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Taxonomic revision of *Aspalathus* subgen. *Sericea* (Crotalarieae, Fabaceae)

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ABSTRACT

Dahlgren's informal Group 1 "Sericeae" represents one of the most morphologically distinctive lineages within *Aspalathus*, characterised by flat, often sericeous leaflets, terminal inflorescences, and silky-hairy floral parts. Despite this morphological coherence, the group has long been taxonomically unstable, largely due to the application of broad species concepts, resulting in extensive synonymy and poorly resolved infraspecific limits. To address these uncertainties, a comprehensive taxonomic revision was undertaken based on extensive herbarium study and field observations, integrating quantitative morphometric analyses, micromorphological observations, life-history traits, and ecological data. Phenetic analyses identify vegetative characters and floral dimensions as primary axes of morphological differentiation, while fire-response strategy and substrate association provide additional, independent resolution. Marked ecological differentiation is evident across the group, with approximately half of the taxa regenerating exclusively as reseeders after fire and the remainder persisting as resprouters. On the basis of these combined lines of evidence, the Sericeae group is here formally recognised at subgeneric rank as *Aspalathus* subgen. *Sericea* Madika, comprising 35 taxa, including 32 species and three subspecies. Several taxonomic changes are proposed, including the reinstatement of *A. lagopus* at species rank, the elevation of *A. quinquefolia* subsp. *virgata* to *A. virgata*, and the recognition of *A. staurantha* as a distinct species. In contrast, the *A. radiata* complex exhibits strong infraspecific cohesion and is retained at subspecific rank, while relationships within the *A. rotunda* complex remain provisionally unresolved pending further evidence. Extensive locality data further enable preliminary conservation assessments, identifying four narrow-range endemics (*A. albicephala, A. lagopus, A. radiata* subsp. *pseudosericea*, and *A. staurantha*) as taxa of conservation concern, and two species known only from historical type collections (*A. incana*, and *A. singuliflora*) that may already be extinct. This study resolves long-standing taxonomic uncertainty surrounding the Sericeae group, formalises its rank within *Aspalathus*, and provides a stable and evolutionarily informed framework for future systematic, ecological, and conservation research.

1. Introduction

The genus *Aspalathus* L. derives its name from the Greek word aspalathos (ασπαλάθος), originally referring to a fragrant shrub found in Greece, now placed in the related genus *Astragalus* L. (Jackson, 1990). The gender of the name has long been debated. Linnaeus originally treated it as feminine, likely following the Greek form (Dahlgren, 1988), despite the Latin ending -us typically taking a masculine gender. While Linnaeus latinised the name as *Aspalathus*, the feminine usage has remained standard, with only a few historical exceptions (e.g., Steudel, 1830; Meyer, 1832). Compton (1940) proposed changing the name to masculine, citing a 1935 Kew Bulletin article advocating for classical consistency in generic gender. However, this proposal was never implemented.

The historical development of the Sericeae group within *Aspalathus* reflects a long and often complex trajectory of taxonomic refinement,

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shaped by centuries of botanical exploration, shifting generic boundaries, and evolving approaches to species delimitation (Table 1). The earliest clues to the distinct identity of this assemblage, characterised by flat or sericeous leaflets, can be traced to pre-Linnaean works by Breyne (1678) and Plukenet (1696), where species now recognised as Sericeae were illustrated under unrelated genera such as *Genista* L. and *Achyronia* L. The formal description of *Aspalathus* by Linnaeus in *Species Plantarum* (1753) consolidated disparate elements under a single genus but left much of its internal variation unresolved. The first species clearly assignable to Sericeae, *A. sericea*, was described by Bergius in 1767, and Thunberg's prolific Cape explorations in the late 18th century added landmark species such as *A. rugosa* Thunb., *A. villosa* Thunb., *A. lotoides* Thunb., *A. cinerea* Thunb. (later synonymised with *A. cytisoides* Lam.), and *A. bracteata* Thunb., preserved today in the Thunberg Herbarium at Uppsala.

The 19th century brought a dramatic increase in the number of *Aspalathus* species described, particularly among the flat-leaflet taxa later associated with Sericeae. Collections by Ecklon, Zeyher, and Drège formed the basis of extensive descriptive works by Meyer (1835–1837), who introduced 43 new taxa in *Commentariorum de Plantis Africae Australioris*, with Ecklon & Zeyher (1836) also naming additional species. Yet this proliferation of names generated extensive synonymy, as even minor morphological variants were often elevated to species rank. This period, therefore, marked both a flourishing of discovery and the onset of significant taxonomic instability.

Attempts to bring order to the Sericeae group followed. Presl (1844) proposed dividing *Aspalathus* into a suite of smaller genera (e.g., *Heterolathus, Paraspalathus, Psilolepus, Trineuria*), some of which attempted to isolate the flat-leaflet species. These proposals were, however, inconsistently applied and gained little acceptance. In contrast, Bentham's (1848) influential treatment of *Aspalathus* adopted a more pragmatic approach, rejecting artificial generic segregations and organising the genus into a series of putatively natural assemblages, including the Cephalanthae, Sericeae, and Pedunculares. This framework enabled the description of several additional taxa attributable to Sericeae, namely *A. capitella* Burch. ex Benth., *A. conferta* Benth., *A. falcata* Benth., *A. myrtillifolia* Benth., and *A. orbiculata* Benth., although subsequent authors, particularly Dahlgren (1988), reassigned some of these taxa to alternative infrageneric groupings.

Despite Bentham's stabilising influence, confusion persisted well into the late 19th and early 20th centuries. Some flat-leaflet taxa were even transferred outside *Aspalathus* altogether, as in the case of *A. villosa*, placed for a time in the genus *Borbonia* L. (Phillips, 1920). Efforts to distinguish the two genera using traits such as calyx morphology or leaf venation proved unsatisfactory, and eventually such transfers were considered artificial and abandoned. Harvey's treatment in *Flora Capensis* (1862) further refined the taxonomy by reducing synonymy and rationalising inflated species counts, though many Sericeae taxa remained under shifting names and interpretations.

By the late 19th century, collectors such as Schlechter, Harry Bolus, Marloth, and Guthrie provided new material that allowed for more rigorous taxonomic work. Bolus (1896) emphasised the diagnostic value of flat-leaflet morphology and described several distinctive Sericeae species, including *A. bodkinii* Bolus, *A. latifolia* Bolus, and *A. intervallaris* Bolus. His approach reflected a growing shift from broad morphological generalisations toward population-based delimitation, influenced by the rise of phytogeography as a taxonomic tool. These developments laid the groundwork for Rolf Dahlgren's systematic revisions (1960, 1963, 1988), which recognised Sericeae as a distinct infrageneric group within *Aspalathus* based on consistent morphological traits such as flat or sericeous leaflets, pedunculate inflorescences, and characteristic pod morphology. Over the course of its taxonomic history, the Sericeae group has increasingly been recognised as a coherent assemblage defined by a distinctive suite of morphological traits. Early treatments were complicated by misapplied names, synonym proliferation, and inconsistencies in the delimitation of informal groups, resulting in a fragmented understanding of the lineage. Subsequent revisions by Bentham, Harvey, and especially Dahlgren provided greater structure, yet these remained limited by the absence of an explicit phylogenetic framework. Based on a well-sampled phylogenetic study (Madika *et al.*, 2026), which provides an opportunity to clarify species membership, Sericeae is here formally recognised at subgeneric rank. The work aims to clarify species and infraspecific boundaries using discrete morphological traits and morphometric data, to standardise taxonomy through expanded descriptions and an updated identification key, and to assess distribution patterns and conservation status in line with IUCN Red List criteria.

Table 1
Summary of classifications within *Aspalathus* with context on the development of infrageneric concepts.

Year /	Subdivisions / Details
Thunberg (1802)	1. Grouped by leaf arrangement: *1. Foliis ternatis*; 2. *Foliis ternis*; 3. *Foliis fasciculatis* (further divided into: *Sericeis, Pilosis, Glabris*, and *Caule ramisque spinosis*).
De Candolle (1825).	Grouped by flower type and leaf arrangement: *Floribus subsessilibus* and *Floribus distincte pedicellatis.*
Ecklon & Zeyher (1836)	Associated species with *anthylloides* (=*aspalathoides*), *truncata, stellaris* (=*aspalathoides*), *stenophylla, inops, securifolia, spathulata* (=*securifolia*), *exigua* (*securifolia*), *cinera* (=*cytisoides*), and *cytisoides*.
Meyer (1836)	Seven groups based on leaf and stem form: *Planifolia stipulare, Planifoliae viminales, Planifoliae lotoideae, Filifoliae mucronatae, Muticae, Filifoliae nervosae, Pedunculares*
Presl (1844)	Adopted Meyer's groups and added *Simplicifoliae*
Bentham (1848)	Twelve sections, including: 1. Cephalanthae (flat, glabrous or villous leaves) 2. Sericeae (flat but silky leaflets) 3. Synpetalae (narrow, ericoid leaflets) 4. Leptanthae (a heterogeneous group) 5. Laterale (lateral flowers and villous pods) 6. Macrocarpae (long pods, two species) 7. Grandiflorae (placed next to Macrocarpae) 8. Pachycarpae (thick pods with terminal inflorescence) 9. Carnosae (usually glabrous petals, carnose leaves and calyx) 10. Pingues (subglabrous petals, smaller flowers) 11. Terminales (flowers at branchlet tips) 12. Pedunculares (following Meyer's concept)
Harvey (1862)	Followed Bentham's classification with minor adjustments
Kuntze (1891); von Post & Kuntze (1903)	Reclassified under Achyronia and created 12 new groups (*Heterolathus, Eriocylax, Trineuria, Scaligera, Streptosema, Plagiostigma, Macrachyronia, Pachyraphea, Sarcophyllum, Diallosperma, Termachyronia*, and *Acropodium*)
Dahlgren (1963)	Proposed six new infrageneric groups: *Purpureipetala, Ecklonella, Nortieria, Triplobractea, Aspalathus, Rafnioides*
Dahlgren (1988)	Formalised 34 groups without assigning formal ranks

2. Materials and methods

2.1. Specimen sampling and morphological data

To investigate morphological diversity and species boundaries within the Sericeae group of *Aspalathus*, over 300 specimens were examined. This included material accessed from major South African and international herbaria, including BOL, BM, K, LD, PRE, NBG, and S (herbarium acronyms follow the *Index Herbariorum*, Thiers 2024). Additional type and historical specimens were reviewed from UPS-THUNB (Uppsala), with further reference material sourced digitally via JSTOR Global Plants (https://plants.jstor.org/), Plants of the World Online (https://powo.science.kew.org/), GBIF (https://www.gbif.org), the BGBM Virtual Herbarium (https://ww2.bgbm.org/herbarium/), the

Royal Botanic Garden Edinburgh (E), the New York Botanical Garden Virtual Herbarium (https://sweetgum.nybg.org/science/), and the Naturalis Biodiversity Center (https://bioportal.naturalis.nl).

Field-based observations and *in situ* photographs were used to verify diagnostic morphological characters and to assess phenotypic variation under natural conditions. Additional high-quality photographic records were sourced from iNaturalist (https://www.inaturalist.org), from which only images showing clearly identifiable diagnostic characters were selected. These images were used to complement herbarium observations, particularly for flowering phenology, growth form and colour characters. Species identifications were verified through direct comparison with authenticated herbarium specimens and expert-determined material to ensure taxonomic reliability. Where possible, a minimum of five accessions per putative taxon were examined to capture intraspecific morphological and geographic variation. Floral parts were rehydrated by immersion in boiling water for 3 minutes prior to dissection under a Nikon SMZ1500 stereomicroscope and Zeiss Discovery V8 microscope, both equipped with camera attachments for imaging.

Dahlgren's monographic treatment of *Aspalathus* (Dahlgren, 1988), which includes extensive line drawings of floral and vegetative morphology for most species examined here, was used as an important comparative reference for character interpretation and illustration. Where appropriate, these drawings were consulted to corroborate observed character states and to assist with the interpretation of morphological variation.

2.2. Morphological character selection and coding

Morphological variation within the Sericeae group was analysed using a phenetic approach based on mixed quantitative and qualitative morphological data. Individual specimens (vouchers) were treated as Operational Taxonomic Units (OTUs). Although specimens were identified prior to analysis using existing taxonomic concepts, species names were used only for post hoc interpretation of analytical results and were not imposed as a priori groupings.

An initial set of 34 morphological characters was scored for each OTU, comprising 22 continuous quantitative characters (e.g. leaflet, bract, calyx and petal dimensions; measurements of reproductive organs) and 12 qualitative characters describing discrete morphological states (e.g. leaflet shape, indumentum type, bract morphology, petal form and colour). All continuous characters were recorded with explicit measurement units, and discrete characters, such as ovule number, were treated as counts. Qualitative characters were explicitly defined and coded numerically, with character states and coding schemes provided in Table 2 and Supplementary Table A1.

Table 2
Morphological characters scored for Operational Taxonomic Units (OTUs) in the phenetic analysis of the *Aspalathus* Sericeae group. m-meters, mm-millimetres.

	Character	Type	Units/Coding
1	Plant height	Quantitative	m
2	Central Leaf length	Quantitative	mm
3	Central Leaf width	Quantitative	mm
4	Lateral leaf length	Quantitative	mm
5	Lateral leaf width	Quantitative	mm
6	Leaflets length	Quantitative	mm
7	Leaflets weight	Quantitative	mm
8	Bracteole length	Quantitative	mm
9	Bracteole width	Quantitative	mm
10	Calyx height	Quantitative	mm
11	Lobe width	Quantitative	mm
12	Standard petal length	Quantitative	mm
13	Standard petal width	Quantitative	mm
14	Standard petal pedicel length	Quantitative	mm
15	Wing petal (WP) length	Quantitative	mm
16	WP width	Quantitative	mm
17	WP pedicel lenght	Quantitative	mm
18	Keel petal length	Quantitative	mm
19	KP width	Quantitative	mm
20	KP pedicel length	Quantitative	mm
21	Androecium length	Quantitative	mm
22	Pistil length	Quantitative	mm
23	Ovary length	Quantitative	mm
24	Ovule number	Discrete	count
25	Leaf shape	Qualitative	Oblanceolate=0, Elliptic=1, Lanceolate=2, Obovate=3, Linear=4
26	Bracts shape	Qualitative	Oblanceolate=0, Linear=1, Lanceolate=2, Rounded=3, Obovate=4, Ovate=5, Oblong=6
27	Bracteole shape	Qualitative	Oblanceolate=0, Linear=1, Lanceolate=2, Subfiliform=3, Filiform=4, Ovate=5
28	Petal colour	Qualitative	Yellow=0, Not yellow=1
29	Calyx tube	Qualitative	Campanulate=0, Linear=1, Lanceolate=2
30	Calyx vestiture	Qualitative	Sericeous=0, Villous=1, Tomentose=2
31	Lobe shape	Qualitative	Linear=0, Triangular=1, Ovate=2, Oblanceolate=3
32	Standard petal shape	Qualitative	Ovate=0, Elliptic=1, Obovate=2
33	Wing petal shape	Qualitative	Lunate=0, Oblong=1, Ovate=2, Oblanceolate=3
34	Keel shape	Qualitative	Lunate=0, Obovate=1, Triangular=2

2.3. Phenetic analysis of quantitative and qualitative morphology

2.3.1. Data standardisation and distance measures

Phenetic analyses were conducted in RStudio (version 2024.12.1) using the packages *vegan, cluster, dendextend, pvclust*, and *ggplot2*. Analyses were based exclusively on quantitative morphological characters. Prior to analysis, continuous variables were standardised to zero mean and unit variance to remove scale effects. Pairwise phenetic dissimilarities among OTUs were calculated using Euclidean distance.

2.3.2. Hierarchical clustering and bootstrap validation

Hierarchical agglomerative clustering was performed using Ward's minimum variance method (Ward.D2) to identify phenetically coherent groups while minimising within-cluster variance. Dendrograms were visualised with branch lengths proportional to phenetic dissimilarity. To assess the robustness of the clustering structure, multiscale bootstrap resampling was implemented using the pvclust package with 1,000 bootstrap replicates. Cluster support was evaluated using approximately unbiased (AU) p-values, which provide a less biased estimate of cluster stability than conventional bootstrap probabilities (Shimodaira, 2002; Suzuki & Shimodaira, 2006). Following established guidelines, clusters with AU $\geq$ 95 % were interpreted as strongly supported, values between 70 and 95 % as moderately supported, and values $<$ 70 % as weakly supported or unstable. Bootstrap-supported clustering was used to identify robust phenetic groupings and to distinguish stable clusters from weakly supported or transitional structure indicative of continuous morphological variation.

2.3.3. Ordination analyses

Ordination analyses were conducted to visualise phenetic structure in reduced multivariate space. Principal Coordinates Analysis (PCoA) was used to examine morphometric variation within individual species complexes. PCoA was performed using Gower distance to accommodate the scaling of quantitative traits (Gower, 1971). Separate ordinations were generated for the *A. lotoides, A. quinquefolia, A. radiata*, and *A. tridentata* complexes to facilitate focused interpretation of infraspecific patterns. Non-metric multidimensional scaling (NMDS) was

additionally used to visualise overall morphometric structure and to assess patterns associated with growth form categories. Ordination stress values were used to evaluate goodness-of-fit.

2.3.4. Statistical testing of growth form effects

To formally test whether plant growth form was associated with multivariate morphological variation, permutational multivariate analysis of variance (PERMANOVA) was performed using the *adonis2* function in *vegan*. Growth form was defined based on plant height, with specimens classified as low-growing (<0.5 m) or high-growing (≥0.5 m). Analyses were conducted using Euclidean distance and 9,999 permutations. Homogeneity of multivariate dispersion among growth-form groups was assessed using *betadisper* to confirm that significant PERMANOVA results reflected differences in group centroids rather than unequal variance.

2.3.5. Univariate trait visualisation

To complement multivariate analyses, univariate boxplots were generated for all quantitative traits to visualise the distributions underlying phenetic structure. Comprehensive boxplots for all traits are provided in Supplementary Fig. B3. A subset of the most informative traits was selected for presentation in the main text to illustrate patterns of infraspecific differentiation within species complexes.

2.4. Scanning electron microscopy (SEM)

To examine fine-scale epidermal and floral micromorphological features within the Sericeae group of *Aspalathus*, selected specimens were prepared for scanning electron microscopy (SEM) at the Electron Microscopy Unit of the Royal Botanic Gardens, Kew (London, UK). All specimens analysed under SEM were sourced exclusively from the Kew Herbarium (K), with no access to fresh material. Consequently, specimen condition varied significantly, and in some cases the advanced age, fragility, or brittleness of mounted material limited the availability of intact or analysable floral organs, particularly wing petals. Preparation of specimens followed a modified protocol appropriate for desiccated herbarium samples. Flowers were first rehydrated for dissection using the method outlined in Section 2.1. Thereafter, small floral fragments, primarily including petals and reproductive structures, were carefully excised from mounted sheets using fine-tipped forceps under a stereomicroscope. To minimise structural collapse and enable clearer resolution of surface features, excised parts were affixed to aluminium stubs using adhesive carbon tabs. Given the delicate nature of the historical material, critical point drying was omitted to avoid further tissue degradation. Instead, samples were left untreated and sputter-coated with a thin layer of gold using a Quorum Q150T Sputter Coater. The sputtering protocol involved coating durations of 30 to 90 seconds at 0.25 bar argon pressure, depending on the surface conductivity and thickness requirements of each sample. Specimens were examined and imaged using a Zeiss EVO MA10 scanning electron microscope operated under high-vacuum mode. Digital micrographs were captured at varying magnifications to document the surface features of the wing and keel petals. Where possible, multiple floral organs from different individuals of the same taxon were imaged to assess consistency of micromorphological characters. Terminology used to describe petal sculpturing follows Stirton (1981), with wing petal surfaces categorised according to established sculpturing types, including transcostal and lamellate patterns, based on the arrangement and prominence of ridges and surface relief. SEM observations were used qualitatively to complement macromorphological analyses and were not included in quantitative phenetic analyses.

2.5. Arrangement of specimens examined

Specimens were arranged based on overall morphological similarity, following the diagnostic logic of the dichotomous key presented in this study. Initial sorting was conducted using major vegetative and floral characters, after which specimens were progressively refined into smaller, more homogeneous groupings based on additional diagnostic features. This similarity-based arrangement ensured consistency between specimen assessment, phenetic analyses, and taxonomic interpretation.

2.6. Distribution maps and conservation assessments

Species distribution data were compiled from verified herbarium records, field collection coordinates, and validated citizen-science observations from GBIF and iNaturalist. Distribution maps were created using QGIS version 3.20.0 (QGIS Development Team, 2021). Extent of Occurrence (EOO) and Area of Occupancy (AOO) were calculated using ShinyGeoCAT (Bachman et al., 2011; Moat et al., 2023) to inform preliminary conservation assessments. Where Red List assessments already existed, they were reviewed using data from the SANBI Red List of South African Plants (Raimondo et al., 2009; updates via https://redlist.sanbi.org). For taxa lacking formal assessments or where new distribution data significantly altered known ranges, updated conservation statuses were proposed following IUCN Red List Categories and Criteria: Version 3.1 (IUCN, 2025). Vegetation types were assigned according to the National Vegetation Map of South Africa (Mucina & Rutherford, 2006). Each taxon's habitat description follows the formal VegMap units and code. Specimens examined are cited according to the Quarter Degree Reference System (QDS) as outlined by Leistner & Morris (1976). Within each species treatment, examined specimens are arranged geographically from north to south, and within the same latitudinal band from west to east, following standard southern African floristic practice (Edwards & Leistner, 1971).

2.7. Species concept and integrative framework

Ecological information, including substrate affinities, fire-response strategies, and patterns of geographic distribution, was incorporated to evaluate whether phenetic discontinuities corresponded with ecological differentiation or habitat segregation. These datasets were interpreted together following the unified lineage-based species concept of de Queiroz (2007), in which species are defined as independently evolving metapopulation lineages, and taxonomic decisions are based on evidence for lineage separation, typically strengthened by congruence among multiple morphological, ecological, or evolutionary criteria.

3. Results

3.1. Phenetic analyses

3.1.1. Hierarchical clustering of phenetic traits

Morphometric analyses of the *Aspalathus* taxa revealed structured but variably supported patterns of phenetic similarity when assessed using hierarchical clustering. Standardisation of the 22 quantitative traits allowed the construction of a Euclidean distance matrix capturing overall morphometric similarity among specimens. Hierarchical agglomerative clustering using Ward's method produced a dendrogram in which branch lengths reflect phenotypic dissimilarity, with approximately unbiased (AU) bootstrap support values indicated at internal nodes (Fig. 1). Bootstrap support values displayed on the dendrogram (Fig. 1) indicate that several terminal groupings are strongly supported (AU ≥ 95 %), whereas deeper internal nodes generally receive lower AU support. At higher levels of dissimilarity, the dendrogram resolves the dataset into three broad phenetic groupings, which show partial correspondence with plant height categories. However, cluster boundaries are not defined exclusively by growth form, and both low- and high-growing specimens occur within multiple clusters. This indicates that growth form contributes to overall morphometric structure but does not

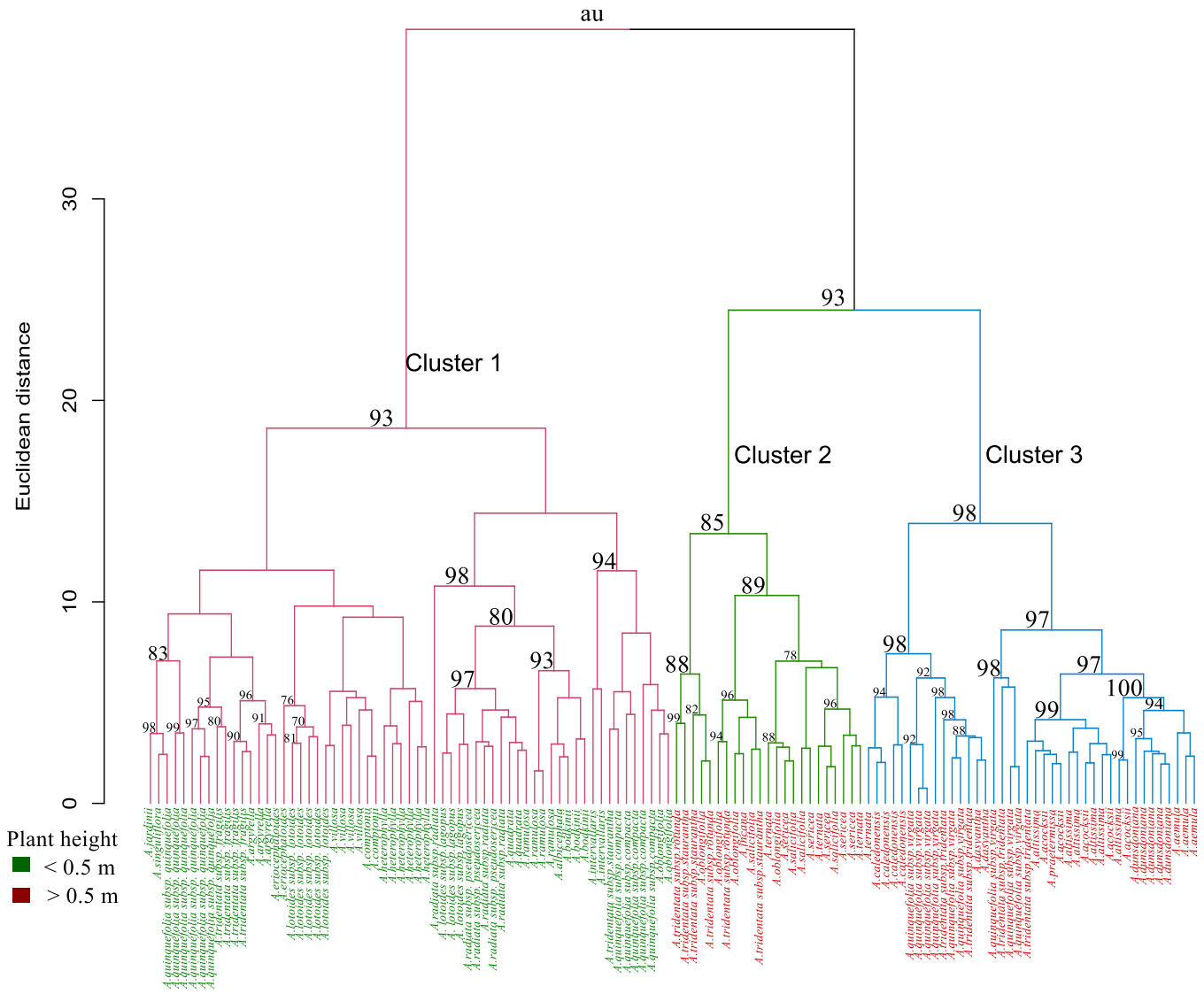

Fig. 1. Hierarchial clustering dendogram of *Aspalathus* group Sericeae specimens based on 22 standardised quantitative morphological traits. Pairwise phenetic dissimilarities were calculated using Euclidean distance, and clustering was performed using Ward's minimum variance method. Branch lengths reflect phenetic dissimilarity among specimens. Specimens are colour-coded by growth form, with low growing individuals (< 0.5 m) shown in green and high growing individuals (> 0.5 m) shown in red. Major clusters correspond to phenetically coherent groupings within and among species. Approximately unbiased (AU) bootstrap support values are shown at the internal nodes; clusters with AU ≥ 95% are considered strongly supported, AU values of 70–95% indicate moderate support. Branches without displayed AU values represent weakly supported nodes.

alone determine phenetic grouping.

Patterns of phenetic cohesion and differentiation vary among the species complexes examined. Specimens of the *A. radiata* complex are distributed across closely related branches of the dendrogram, reflecting substantial overlap in quantitative vegetative and floral traits rather than a single discrete cluster. In the *A. quinquefolia* complex, *A. quinquefolia* subsp. *quinquefolia* and *A. quinquefolia* subsp. *compacta* occur on separate but closely positioned branches, whereas *A. quinquefolia* subsp. *virgata* is resolved on a more distinct branch at higher levels of phenetic dissimilarity. The *A. tridentata* complex exhibits pronounced internal heterogeneity, with subspecies distributed across multiple, well-separated branches of the dendrogram. The *A. tridentata* subsp. *staurantha* and *A. tridentata* subsp. *rotunda* occur in closer proximity, while the *A. tridentata* subsp. *tridentata* and *A. tridentata* subsp. *fragilis* are separated at higher levels of morphometric divergence. The *A. lotoides* complex likewise shows clear separation between *A. lotoides* subsp. *lotoides* and *A. lotoides* subsp. *lagopus*, indicating measurable divergence in overall morphometric profiles.

3.1.2. Ordination analyses (PCoA and NMDS)

Ordination analyses were used to visualise overall phenetic structure within the Sericeae group of *Aspalathus* and to explore patterns of morphometric similarity at both broad and fine taxonomic scales. Non-metric multidimensional scaling (NMDS) was first applied to the complete dataset to assess global morphometric structure and associations with growth form. The NMDS ordination, based on Euclidean distances calculated from standardised quantitative traits, produced a stable two-dimensional solution with an acceptable stress value (stress = 0.147; Supplementary Fig. B2). The ordination reveals a broadly continuous distribution of specimens, with no sharply discrete groupings across the dataset. When specimens are coloured according to growth form, low-growing (<0.5 m) and high-growing (≥0.5 m) individuals show partial separation in ordination space, although substantial overlap persists. This pattern indicates that growth form contributes to overall morphometric variation but does not fully structure phenetic space across the Sericeae group. Principal Coordinates Analysis (PCoA) was subsequently used to further visualise morphometric relationships and patterns of

phenetic differentiation. A PCoA of the complete Sericeae dataset is provided in Supplementary Fig. B1 and supports the NMDS results by illustrating continuous variation with limited global separation among taxa. To facilitate interpretation of infraspecific structure, separate PCoA ordinations were generated for each of the four species complexes recognised in this study: the *A. lotoides, A. quinquefolia, A. radiata*, and *A. tridentata* complexes.

In the *A. lotoides* complex (Fig. 2A), the ordination shows a complete two-dimensional separation of the two subspecies. Axis 1 accounts for 89.41 % of the total morphological variation and clearly segregates *A. lotoides* on the negative side from *A. lotoides* subsp. *lagopus* on the positive side. Axis 2 explains an additional 4.72 % of the variation but does not contribute to any intertaxon overlap, resulting in a distinctly isolated positioning of the two subspecies in the morphometric space.

The *A. quinquefolia* complex (Fig. 2B) displays a more nuanced pattern of infraspecific structure. Along PCoA Axis 1 (40.64 % of total variation), *A. quinquefolia* subsp. *virgata* is separated from the closely allied *A. quinquefolia* subsp. *quinquefolia* and *A. quinquefolia* subsp. *compacta*. Axis 2, which explains 19.39 % of the variation, further resolves *A. quinquefolia* subsp. *quinquefolia* from *A. quinquefolia* subsp. *compacta*. Notably, a specimen of *A. elongata* var. *densa*, which is treated here as a synonym under *A. quinquefolia* subsp. *virgata*, is positioned away from the main cluster of *A. quinquefolia* subsp. *virgata* along Axis 2, reflecting its morphological distinctiveness within the broader complex. The *A. radiata* complex (Fig. 2C) shows a high degree of phenetic cohesion. *Aspalathus radiata* subsp. *radiata* and *A. radiata* subsp. *pseudosericea* are distributed primarily along Axis 1 (50.07 % of the total variation) and exhibit only minimal separation along Axis 2 (17.87 %). This pattern is consistent with the overlap observed in the dendrogram. In contrast, the *A. tridentata* complex (Fig. 2D) exhibits the most pronounced internal differentiation. All four subspecies occupy unique regions of the ordination space, reflecting their broader morphological diversity. Along Axis 1 (39.68 % of the total variation), *A. tridentata* subsp. *tridentata* and *A. tridentata* subsp. *staurantha* are separated from *A. tridentata* subsp. *fragilis* and *A. tridentata* subsp. *rotunda*. Axis 2 (28.79 % of the variation) further distinguishes the taxa into two perpendicular

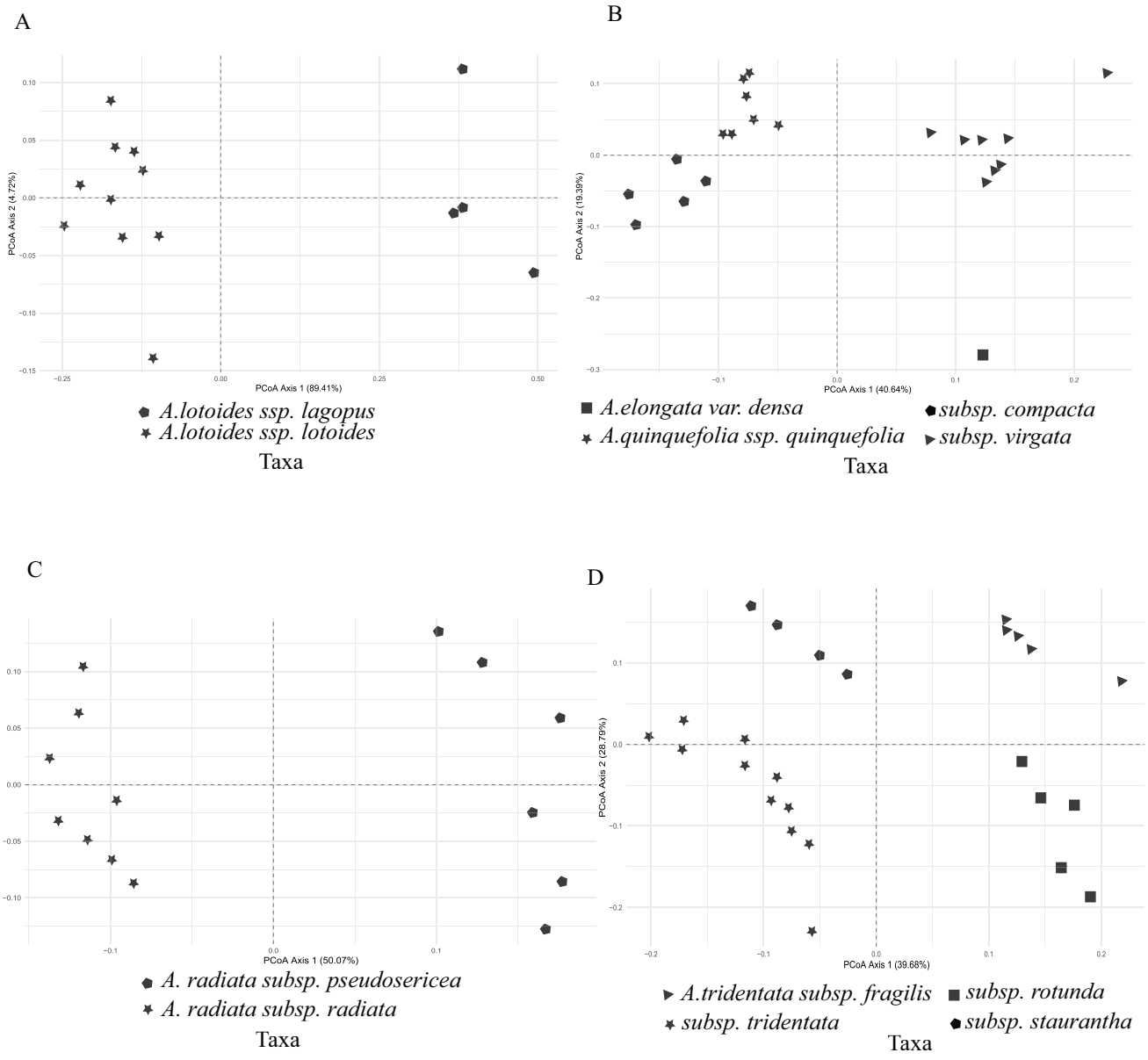

Fig. 2. Principal Coordinates Analysis (PCoA) of quantitative morphometric data for four *Aspalathus* complexes presented alphabetically, (A) *A. lotoides* complex, (B) *A. quinquefolia* complex, (C) *A. radiata* complex, and (D) *A. tridentata* complex. PCoA was performed using Gower distance.

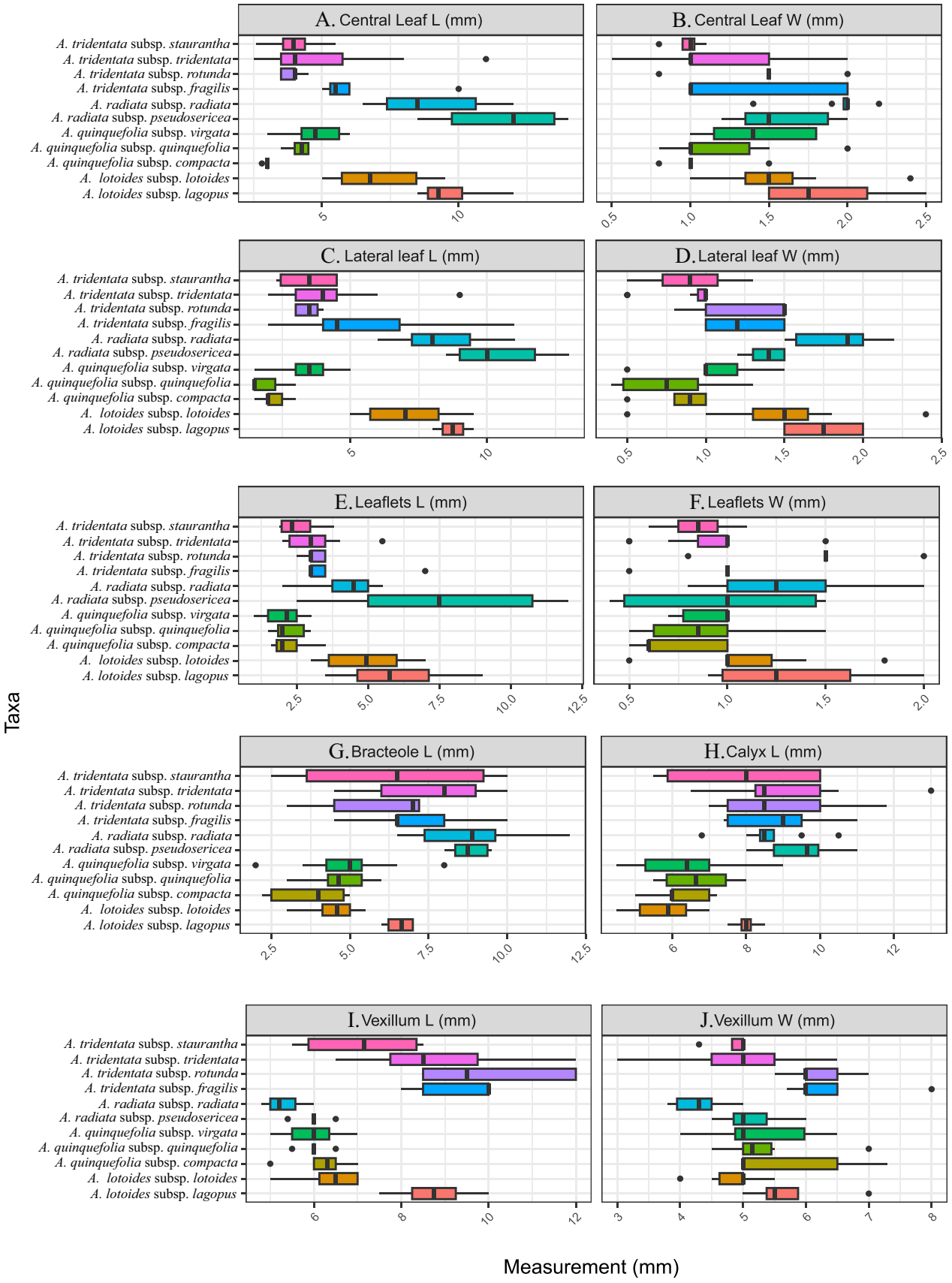

Fig. 3. Boxplots of qualitative morphometric traits for the four *Aspalathus* species complexes: *A. lotoides, A. quinquefolia, A. radiata*, and *A. tridentata*. Each boxplot represents the distribution of measured trait values for the subspecies within each complex, with the horizontal line indicating the median, boxes showing the interquartile range (IQR), and whiskers extending to 1.5 x IQR. Outliers are shown as individual points.

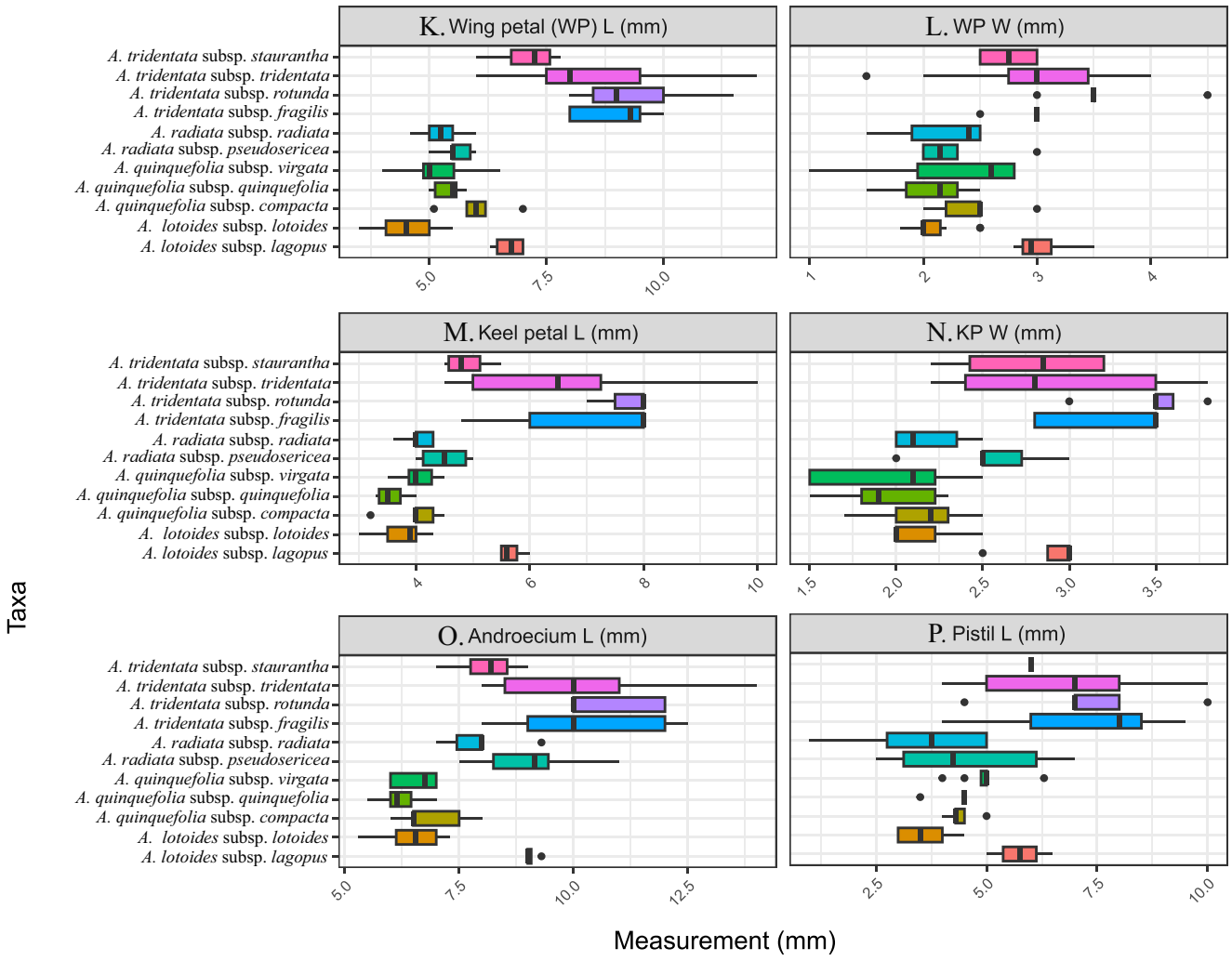

Fig. 3. (*continued*).

gradients, positioning *A. tridentata* subsp. *tridentata* and *A. tridentata* subsp. *rotunda* apart from *A. tridentata* subsp. *fragilis* and *A. tridentata* subsp. *staurantha*. This configuration indicates that the complex is morphometrically heterogeneous and that each subspecies expresses a distinctive combination of vegetative and floral measurements in the multivariate space.

3.1.3. Statistical tests of growth form differentiation (PERMANOVA)

To formally test whether plant growth form is associated with multivariate morphometric variation, a permutational multivariate analysis of variance (PERMANOVA) was conducted using Euclidean distances calculated from standardised quantitative traits. Growth form was defined a priori based on plant height, with specimens classified as low-growing (<0.5 m) or high-growing (≥0.5 m). The PERMANOVA revealed a statistically significant effect of growth form on overall morphometric variation (PERMANOVA, $F = 6.87$, $R^2 = 0.10$, $p = 0.0001$), indicating that growth form explains approximately 10 % of the total variation in the quantitative morphological dataset. To assess whether this result was influenced by unequal dispersion among groups, homogeneity of multivariate dispersion was evaluated using *betadisper*. The dispersion test was not statistically significant ($F = 2.76$, $p = 0.067$), indicating no strong differences in within-group variance between low- and high-growing specimens.

3.1.4. Univariate analysis of key morphometric traits

To complement the multivariate clustering and ordination analyses, univariate boxplots were generated to visualise the distribution of individual morphometric traits across all *Aspalathus* taxa (Fig. 3). This approach allowed direct inspection of the variation underlying the phenetic structure observed in the dendrogram and PCoA plots. Boxplots were first produced for the complete dataset, encompassing all quantitative measurements for all sampled taxa. These comprehensive visualisations, provided as Supplementary Fig. B3, illustrate the full range of variation for each trait across the group and highlight both inter- and intraspecific diversity.

From this full suite of boxplots, a subset of the most informative traits was selected for focused presentation in the main text (Fig. 3). These plots concentrate on the four primary species complexes: *A. lotoides, A. quinquefolia, A. radiata*, and *A. tridentata*, to highlight patterns of infraspecific differentiation. These plots illustrate the range, median, and distribution of each measured morphometric variable, highlighting characters with strong discriminatory value and others that exhibit overlapping ranges across subspecies.

In the *A. lotoides* complex, the boxplots show that *A. lotoides* subsp. *lotoides* and *A. lotoides* subsp. *lagopus* differ most strongly in leaflet and floral measurements, particularly central and lateral leaflet lengths (Fig. 3 A–D) and widths as well as vexillum and wing petal dimensions (Fig. 3 I–L). *A. lotoides* subsp. *lotoides* generally exhibits smaller vegetative and floral organs, while *A. lotoides* subsp. *lagopus* consistently shows larger measurements, reflecting the pattern of complete separation seen in the PCoA ordination (Fig. 2A). The *A. quinquefolia* complex exhibits more nuanced variation. *A. quinquefolia* subsp. *quinquefolia* and

A. quinquefolia subsp. *compacta* show broadly overlapping trait ranges, consistent with their tight clustering in the dendrogram and PCoA (Fig. 2B). In contrast, *A. quinquefolia* subsp. *virgata* tends to have longer leaves (Fig. 3 A–D) and larger floral organs (Fig. 3 I–N), producing partially distinct boxplot distributions. A specimen of *A. elongata* var. *densa*, treated as a synonym of *A. quinquefolia* subsp. *virgata*, is represented among the larger sized measurements, consistent with its partial separation in the PCoA space.

Boxplots for the *A. radiata* complex indicate that *A. radiata* subsp. *radiata* and *A. radiata* subsp. *pseudosericea* share largely overlapping ranges for most vegetative and floral traits. The distributions exhibit minimal separation, reinforcing the dendrogram and PCoA results that suggest high phenetic similarity and limited discriminative power of quantitative traits alone for separating these subspecies. The *A. tridentata* complex exhibits the greatest internal morphological variation among the four species complexes. The boxplots reveal wide and partially overlapping ranges for key traits, including central leaflet length (Fig. 3A), calyx length (Fig. 3H), and vexillum dimensions (Fig. 3 I–J), indicating considerable infraspecific diversity. *A. tridentata* subsp. *staurantha* is morphometrically the smallest member of the complex, consistently showing reduced vegetative and floral dimensions relative to the other subspecies. *A. tridentata* subsp. *rotunda* and *A. tridentata* subsp. *fragilis* displays overlapping trait distributions, particularly for most floral and vegetative characters, but they are clearly separated along central leaflet length, with *A. tridentata* subsp. *rotunda* exhibiting the most reduced leaf size. *A. tridentata* subsp. *tridentata* generally possesses larger vegetative and floral measurements than the other subspecies and shows only slight overlap with *A. tridentata* subsp. *staurantha*, which remains distinct in its smaller overall morphology.

4. Discussion

This study provides the first comprehensive reassessment of species and subspecies boundaries within the lineage traditionally referred to as the Sericeae group of *Aspalathus*. Bentham (1848) initially circumscribed this assemblage on the basis of shared vegetative and floral characters, and Dahlgren (1960, 1988) subsequently refined its concept, emphasising the diagnostic value of silky pubescent indumentum and distinctive floral morphology. Although Dahlgren did not accord the group formal taxonomic rank, his treatment recognised 27 taxa united by these features. Subsequent fieldwork and taxonomic study have expanded the diversity of the group through the description of additional species, including *A. eriocephaloides* (Stirton & Muasya, 2016), *A. albicephala* and *A. jardinii* (Du Preez & Stirton, 2024), and *A. praetermissa* (Stirton et al., 2024). Together, these contributions have clarified species limits within Sericeae while also revealing cases of synonymy and strong infraspecific cohesion. In light of this revised understanding, the group is here formalised at subgeneric rank, comprising 35 taxa (including 32 species and three subspecies). Recognition at this level reflects both its consistent morphological distinctiveness, characterised by flat, often sericeous leaflets, terminal inflorescences, and silky-hairy floral parts, and its long-recognised taxonomic coherence within *Aspalathus*.

4.1. Phenetic structure and morphological signal

The phenetic analyses conducted in this study demonstrate that morphological variation within the Sericeae group of *Aspalathus* is structured, yet not uniformly discrete. Hierarchical clustering (Fig. 1) and ordination analyses (Supplementary Fig. B1) consistently reveal the presence of locally coherent morphological groupings that are embedded within a broader continuum of variation. This means that while some lineages can be clearly distinguished based on combinations of quantitative traits, others grade into one another without sharp morphological breaks. Such patterns are increasingly recognised in taxonomic groups shaped by recent diversification, ecological heterogeneity, and incomplete lineage sorting, where morphology retains an informative signal but does not always translate into clear-cut boundaries (Schnitzler et al., 2011; Pirie et al., 2016).

Hierarchical clustering based on standardised quantitative traits provides an initial overview of this structure by grouping specimens according to overall morphometric similarity. The resulting dendrogram resolves the dataset into several broad phenetic groupings, but bootstrap support indicates that the strength of these groupings is uneven. Strong support is largely confined to terminal clusters, which represent stable and repeatable morphological associations among closely related specimens. In contrast, deeper nodes often show weak to moderate support, indicating that higher-level subdivisions are sensitive to resampling. Rather than reflecting analytical artefacts, such patterns are widely interpreted as evidence of gradual morphological transitions and overlapping trait distributions, particularly in systems where divergence is recent or ongoing (Sneath & Sokal, 1973; Legendre & Legendre, 2012). Comparable patterns of structured but continuous variation have been documented in phenetic and phylogenetic studies of Cape legumes, especially within the tribe Crotalarieae, where growth form and fire-response strategies have evolved repeatedly and independently (Boatwright et al., 2008; Bond & Midgley, 2001).

Ordination analyses provide a complementary perspective by visualising these relationships in reduced multivariate space. Across the Sericeae group, ordinations reveal substantial overlap among taxa, even in cases where hierarchical clustering suggests partial separation. This overlap does not indicate inconsistency between analytical approaches; rather, it reflects the inherently multidimensional nature of morphological variation. Different traits vary along partially independent axes, so separation along one dimension may be obscured when viewed across multiple dimensions simultaneously. As a result, phenetic differentiation is often expressed as gradients rather than as sharply discrete clusters. Similar patterns of overlap and clinal variation have been reported in morphometric studies of other Cape Floristic Region lineages, including *Erica* and *Aspalathus* sensu lato, where gradual morphological transitions are common (Dahlgren, 1988; Pirie et al., 2011, 2016).

Statistical tests of group differentiation add an important quantitative context to these observations. Growth form explains a statistically significant but relatively small proportion of total morphometric variation, indicating that plant stature and associated size-related traits contribute to phenetic similarity without fully determining it. This finding is consistent with ecological studies showing that growth habit often covaries with multiple vegetative and reproductive traits, particularly in fire-prone shrublands, but rarely acts as a primary axis of taxonomic differentiation on its own (Bond & van Wilgen, 1996). The modest effect size observed here cautions against over-emphasising growth form as a determinant of species boundaries and instead underscores the importance of integrating multiple morphological dimensions when interpreting phenetic structure.

4.2. Growth form, size, and continuous morphological variation

Growth form and overall plant size emerge from the phenetic analyses as influential components of morphological variation within the Sericeae group, yet their effects are expressed along continuous gradients rather than as discrete categorical states. Although stature is one of the most conspicuous traits observed in the field, the present results demonstrate that it contributes to phenetic structure in a context-dependent manner, interacting with vegetative and floral characters rather than acting as an independent determinant of taxonomic boundaries.

At broad scales, low-growing, compact taxa tend to occupy different regions of morphometric space from taller, erect shrubs, a pattern that is reflected in both clustering and ordination analyses (Fig. 1 & Supplementary Fig. B1). However, this separation is incomplete, with extensive overlap among intermediate forms and across species complexes. Such overlap indicates that plant height alone is a poor predictor of overall

morphological similarity and highlights the graded nature of size variation within the group. This pattern reflects the multifunctional and plastic nature of architectural traits, which are shaped by both evolutionary history and local environmental filters, including soil depth, exposure, and disturbance intensity (e.g. Grobler & Cowling, 2021).

In the fire-prone ecosystems of the Cape Floristic Region, growth form is closely linked to life-history strategy, particularly the balance between reseeding and resprouting. Resprouters frequently adopt low, compact architectures that enhance survival through repeated fire events, whereas reseeders more commonly develop taller, erect forms associated with greater reproductive output following disturbance (Bond & Midgley, 2001; He et al., 2019). While these associations are evident in the Sericeae group, they do not map cleanly onto species boundaries. Instead, similar growth forms recur across multiple lineages, resulting in substantial morphological convergence.

Recent molecular syntheses of Cape lineages provide a robust evolutionary explanation for this pattern. Studies of diversification in the Greater Cape Floristic Region demonstrate that repeated ecological filtering under heterogeneous environments and recurrent fire regimes has promoted rapid and often shallow lineage divergence, with key traits such as growth form evolving independently multiple times (Mengel et al., 2026). Under these conditions, architectural traits frequently reflect adaptive responses to local ecological pressures rather than shared ancestry. This repeated evolution of similar growth forms reduces the taxonomic signal of size and stature when considered in isolation and explains why growth form contributes to phenetic structure without imposing discrete morphological breaks.

Size-related scaling effects further amplify the apparent importance of growth form in multivariate analyses. Leaflet dimensions, floral organ lengths, and reproductive structures commonly covary with overall plant stature, causing growth form to influence phenetic similarity indirectly through suites of correlated traits. As a result, growth form appears prominently in clustering and ordination analyses, yet statistical tests indicate that it accounts for only a modest proportion of total morphometric variation. This disparity underscores the need to interpret stature as part of an integrated morphological syndrome rather than as a primary axis of differentiation.

The continuous nature of size variation within the Sericeae group also reflects the ecological breadth occupied by many taxa. Several species and subspecies span heterogeneous landscapes that vary in altitude, substrate type, and disturbance regime. Spatially variable selection on plant architecture under such conditions is likely to promote broad intraspecific morphological ranges and blur phenetic boundaries. Similar patterns of morphological flexibility have been documented across the Cape flora, where long-term climatic buffering and fine-scale niche partitioning facilitate persistence without strong phenotypic canalisation (Mengel et al., 2026).

4.3. Species and infraspecific boundaries in Sericeae

Building on the phenetic structure and growth-form patterns outlined above, the following sections evaluate species and infraspecific boundaries within each major *Aspalathus* complex using an integrative framework.

4.3.1. The Aspalathus lotoides complex

The *Aspalathus lotoides* complex, comprising *A. lotoides* subsp. *lotoides* and *A. lotoides* subsp. *lagopus* exhibits the clearest phenetic separation among all four complexes analysed. Hierarchical clustering (Fig. 1) resolved the two subspecies into non-overlapping clusters, while the PCoA ordination (Fig. 2) revealed complete separation along the first axis (89.41 %), which accounted for most of the morphological variance. *A. lotoides* subsp. *lagopus* is consistently morphometrically larger, particularly in vexillum and keel petal dimensions, and exhibits significantly higher ovule counts relative to *A. lotoides* subsp. *lotoides*. This pattern of divergence is reinforced by boxplots of key traits (Fig. 3), which show minimal to no overlap across most floral and vegetative variables.

This morphometric differentiation is paralleled by distinct life history strategies and ecological preferences. *A. lotoides* subsp. *lagopus* is a resprouter, confined primarily to granite- and shale-derived lowlands of the Hopefield and Saldanha Bay regions. These sites are characterised by low fire frequency, moderate disturbance, and sandy-loamy soils—conditions favouring persistence and vegetative regeneration, in line with regional patterns of resprouter ecology (Cowling et al., 2018). In contrast, *A. lotoides* subsp. *lotoides* is a reseeder occurring in fire-prone coastal and subcoastal habitats, often on marine sands or shallow soils surrounding granite outcrops. Its broader ecological amplitude and dependence on post-fire seedling recruitment suggest a life history strategy optimised for high-disturbance fynbos systems.

The combined morphometric, ecological, and life history divergence clearly supports the interpretation of subsp. *lagopus* as an evolutionarily independent lineage. Consistent with principles of diagnosability and lineage divergence (de Queiroz, 2007), these results justify elevating *A. lotoides* subsp. *lagopus* to species rank as *Aspalathus lagopus* (Thunb.) Madika comb. nov., in accordance with Thunberg's (1800) original description as *Ononis lagopus*. Accordingly, subsp. *lagopus* is here recognised at species rank.

4.3.2. The Aspalathus quinquefolia complex

The *A. quinquefolia* complex exhibits partial infraspecific separation, with clear morphometric and ecological differentiation among its subspecies. *A. quinquefolia* subsp. *quinquefolia* and *A. quinquefolia* subsp. *compacta* do not form a single tight terminal cluster in the hierarchical dendrogram but instead occur on closely related yet distinct branches within the same broader phenetic assemblage (Fig. 1). This branching pattern indicates high overall morphometric similarity coupled with consistent, though subtle, differentiation. The separation between the two subspecies is plausibly influenced by differences in growth form: *A. quinquefolia* subsp. *quinquefolia* typically exhibits a creeping habit, whereas *A. quinquefolia* subsp. *compacta* is procumbent, resulting in small but systematic differences in plant architecture and associated size-related traits. In the PCoA ordination, this differentiation is expressed primarily along the second axis, which accounts for 19.39 % of the total morphometric variation (Fig. 2). Boxplot distributions of key vegetative and floral traits further support this pattern, showing broadly overlapping ranges but consistent shifts in central tendency between the two subspecies (Fig. 3). These results indicate phenetic cohesion without identity, supporting recognition of *A. quinquefolia* subsp. *quinquefolia* and *A. quinquefolia* subsp. *compacta* as closely allied but distinct infraspecific entities rather than fully discrete species. In contrast, *A. quinquefolia* subsp. *virgata* is consistently resolved as morphometrically distinct, driven by its generally larger and more elongated vegetative and floral organs. This separation is evident in the dendrogram, where *virgata* forms an isolated branch, and in the PCoA, where it occupies a unique position along the first axis of variation. Ecological and life history evidence further supports differentiation within the *A. quinquefolia* complex. *Aspalathus quinquefolia* subsp. *quinquefolia* and *A. quinquefolia* subsp. *compacta* are both resprouters, occurring in lower slope or sheltered microsites within sandstone-derived fynbos, where longer fire return intervals or reduced fire intensity favour vegetative persistence via basal resprouting. In contrast, *A. quinquefolia* subsp. *virgata* is a reseeder, associated with more frequently burned, exposed lowland habitats, where shorter fire cycles promote seedling recruitment and favour life histories reliant on post-fire regeneration from persistent soil seed banks (Cowling et al., 2018). This divergence in fire response strategy complements the morphometric and micromorphological distinctions among subspecies and further supports their ecological separation.

Floral micro-morphology, as revealed by SEM, provides additional support for taxonomic distinction. *A. quinquefolia* subsp. *quinquefolia* and *A. quinquefolia* subsp. *compacta* exhibits weakly sculptured adaxial

petal surfaces with faint rugulose texturing, whereas *A. quinquefolia* subsp. *virgata* shows more pronounced non-transcostal lunate folds, consistent with a shift in floral surface elaboration (Fig. 9). Such sculptural differences, when combined with consistent morphometric and life-history divergence, satisfy the criteria of diagnosability and evolutionary independence *sensu* de Queiroz (2007).

These findings justify the elevation of *A. quinquefolia* subsp. *virgata* to species rank as *Aspalathus virgata* Thunb., reinstating the original binomial published by Thunberg in 1800 and thereby clarifying its status. The analysis also provides new insight into the placement of *A. elongata* var. *densa*, which has historically been included as a synonym under *A. quinquefolia* subsp. *virgata* (Dahlgren, 1988). In the PCoA, the holotype specimen of *A. elongata* var. *densa* is displaced along Axis 2, forming a position separated from the main *virgata* cluster. This pattern may indicate subtle but consistent morphometric divergence, which, if corroborated by additional material, could justify recognition as a distinct taxon rather than strict synonymy. This reflects a pattern observed in other Cape legumes, where morphologically discrete local endemics were historically treated as varieties but later reinstated to species status when supported by combined ecological, morphological, and genetic evidence (Boatwright et al., 2008; Stirton & Muasya, 2016).

4.3.3. The Aspalathus radiata complex

The *Aspalathus radiata* complex, comprising *A. radiata* subsp. *radiata* and *A. radiata* subsp. *pseudosericea*, exhibits pronounced phenetic overlap across all quantitative analyses, indicating limited morphometric differentiation between the two taxa. In the hierarchical clustering, specimens of both subspecies are interspersed within the same broader phenetic assemblage rather than forming discrete or reciprocally exclusive clusters (Fig. 1). This pattern indicates a lack of consistent separation based on quantitative morphology. Similarly, the PCoA ordination reveals extensive overlap between subspecies, with Axis 1 accounting for 50.07% of the total morphometric variation and providing only weak differentiation (Fig. 2). Boxplots of key vegetative and floral traits further support this interpretation, showing broadly overlapping trait ranges and no consistent shifts in central tendency that would reliably distinguish the two subspecies (Fig. 3).

Despite this morphometric cohesion, the subspecies can be distinguished by a combination of growth form, life-history strategy, and subtle but consistent qualitative characters. *A. radiata* subsp. *radiata* is typically a low, decumbent resprouter, whereas *A. radiata* subsp. *pseudosericea* is an erect reseeder characterised by more elongated inflorescences and a generally slender vegetative architecture. Both subspecies share lamellate wing-petal sculpturing with parallel ridges and lemon-yellow flowers that age to orange-brown, indicating strong structural and developmental similarity. These qualitative differences, while insufficient to produce discrete separation in multivariate space, remain taxonomically informative when interpreted in combination with ecological and life-history traits.

The high degree of morphological overlap likely contributes to the historical under-representation of *A. radiata* subsp. *pseudosericea* in herbarium collections, with the most recent confirmed record dating to Stirton's 1986 collection. Although this pattern cannot be attributed unambiguously to misidentification, it is consistent with broader trends in the Cape Floristic Region, where cryptic reseeders with narrow distributions are often under-collected relative to more conspicuous resprouting taxa (Manning & Goldblatt, 2012; Cowling et al., 2018).

The *A. radiata* complex represents a morphometrically cohesive but ecologically and reproductively differentiated lineage, in which discrete traits rather than quantitative measurements underpin taxonomic recognition. Despite these ecological and life-history contrasts, the overall morphological continuity and high phenetic cohesion between *A. radiata* subsp. *radiata* and *A. radiata* subsp. *pseudosericea* argues against recognition at the species rank. Both subspecies share key diagnostic features, including petal sculpturing and floral colouration, with no discrete morphological discontinuities observed in multivariate or univariate analyses. Their treatment at the subspecific level thus reflects the minor, though consistent, ecological divergence within an otherwise integrated lineage.

4.3.4. The Aspalathus tridentata complex

The *A. tridentata* complex has long been recognised as one of the most morphologically challenging assemblages in the genus. Dahlgren (1960) treated it as a single species with four subspecies; subsp. *tridentata, fragilis, rotunda*, and *staurantha*, and acknowledged that "variation is extensive in all characters," foreshadowing the instability of this taxonomic arrangement. The present morphometric analysis confirms this complexity, revealing the greatest internal heterogeneity of any complex examined.

The quantitative results clearly reflect the marked heterogeneity within the *Aspalathus tridentata* complex. *Aspalathus tridentata* subsp. *staurantha* is consistently resolved as the morphometrically smallest member of the complex, exhibiting reduced vegetative and floral dimensions across all analyses. In contrast, *A. tridentata* subsp. *rotunda* and *A. tridentata* subsp. *fragilis* are resolved as distinct and non-overlapping entities in the hierarchical clustering, occupying separate branches within the dendrogram and showing no evidence of phenetic intergradation (Fig. 1). This separation indicates that, despite superficial similarity, the two subspecies possess consistently different morphometric profiles.

The differentiation between *A. tridentata* subsp. *rotunda* and *A. tridentata* subsp. *fragilis* is driven primarily by vegetative traits, most notably central leaflet length, with *A. tridentata* subsp. *rotunda* exhibiting the most reduced leaves within the complex. This distinction is maintained across the multivariate analyses. In the PCoA ordination (Fig. 2D) and boxplots (Fig. 3), the two subspecies occupy discrete or only minimally overlapping regions of morphometric space, reinforcing the separation observed in the hierarchical clustering and confirming that their differentiation is not an artefact of clustering methodology.

Aspalathus tridentata subsp. *tridentata* is resolved as morphometrically larger than the other members of the complex, with consistently greater measurements across both vegetative and floral characters. Although it shows limited proximity to *A. tridentata* subsp. *staurantha* in parts of the ordination space, this association is weak and not supported by clustering or univariate trait distributions.

The present analysis has important taxonomic implications. *Aspalathus tridentata* L. remains recognised at species rank, as originally circumscribed by Linnaeus (1753). The results demonstrate consistent morphological cohesion and non-overlap with allied taxa, thereby providing no basis for recognising subspecies within *A. tridentata*. In parallel, *A. staurantha* Eckl. & Zeyh. is upheld as a distinct species, characterised by its spiny leaf bases, smaller vegetative and floral parts, and fewer-flowered inflorescences, together with its partly separate ecological and geographic distribution. Both taxa are clearly diagnosable and meet current species concepts emphasising morphological and evolutionary independence (de Queiroz, 2007).

By contrast, *A. tridentata* subsp. *rotunda* and *A. tridentata* subsp. *fragilis* form a closely allied phenetic pair, sharing overlapping morphometric space and broadly similar vegetative architecture. The primary axis of differentiation is central leaflet size, with *A. tridentata* subsp. *rotunda* exhibiting the most reduced leaves, whereas *A. tridentata* subsp. *fragilis* retains slightly broader leaflets. This close affinity suggests that the two may be best treated as a single species pair forming a residual *rotunda–fragilis* complex, pending further evidence from molecular phylogenetics and population-level- sampling. Elevation of each to species rank is plausible but provisional, as the morphometric overlap and ecological proximity indicate a recent or incomplete divergence rather than fully resolved speciation.

4.4. Biogeography, ecology, and conservation implications

Although biogeographic distributions, habitat preferences, and

conservation assessments are treated in detail under individual taxonomic accounts, several broader patterns emerge when these data are considered in light of the phenetic and taxonomic results presented here. Together, these patterns underscore the close coupling between morphology, ecology, and geography in the Sericeae group and highlight the importance of taxonomically informed frameworks for conservation planning in the Cape Floristic Region.

At a regional scale, species and subspecies within Sericeae exhibit strong geographic structuring, with many taxa confined to narrow edaphic or topographic niches. This pattern is consistent with the high levels of endemism characteristic of the Cape Floristic Region and reflects the interaction between heterogeneous substrates, fire regimes, and climatic gradients. Several taxa are restricted to specific geological substrates, including granitic lowlands, sandstone-derived slopes, or shale bands, indicating that edaphic specialisation plays a significant role in shaping distributional limits. Such substrate fidelity likely contributes to both phenetic differentiation and geographic isolation, reinforcing lineage divergence in some complexes while maintaining cohesion in others.

Ecologically, the repeated association between growth form, life-history strategy, and habitat context has important implications for both diversification and persistence. The distinction between reseeding and resprouting strategies, discussed in earlier sections, corresponds not only to morphological patterns but also to differences in geographic range size and habitat stability. Resprouting taxa often occupy more stable or topographically buffered environments and may persist over long time spans at individual localities, whereas reseeders are more frequently associated with fire-prone or environmentally dynamic habitats. These ecological contrasts help explain observed differences in distribution breadth and collection frequency among taxa and may underlie some of the phenetic patterns recovered in the analyses.

From a conservation perspective, the taxonomic refinements presented here have direct consequences for assessing extinction risk and prioritising management actions. Elevation of certain subspecies to species rank, as well as the recognition of previously obscured lineages, results in narrower circumscription of several taxa and, consequently, smaller inferred ranges. In such cases, conservation assessments based on outdated taxonomy may underestimate vulnerability by aggregating multiple lineages under a single, broadly distributed name. Conversely, the retention of subspecies status for morphometrically cohesive but ecologically differentiated taxa avoids unnecessary inflation of species numbers and promotes stability in conservation assessments.

The results further emphasise the importance of integrating morphological and ecological data when evaluating conservation status. Several taxa exhibit high phenetic cohesion yet differ markedly in habitat specificity, fire response, or geographic distribution. For such taxa, quantitative morphometric similarity alone would obscure conservation-relevant differences, underscoring the need for holistic approaches that incorporate ecological context. This is particularly relevant for narrowly distributed resprouting taxa, which may be disproportionately vulnerable to changes in fire frequency, land transformation, or climate variability.

The under-collection of certain taxa, especially those that are morphologically cryptic or occur in remote or seasonally inaccessible habitats, also emerges as a recurring theme. Phenetic cohesion within some complexes suggests that cryptic diversity may remain underdetected in herbarium collections, while ecological specialisation may limit opportunities for collection. This indicates the continued importance of targeted fieldwork, particularly in poorly sampled regions and habitats identified through taxonomically informed analyses.

5. Conclusion

This study provides the first integrative, phenetically informed reassessment of species and infraspecific boundaries within the Sericeae group of *Aspalathus*, combining quantitative morphometrics, qualitative morphology, micromorphological evidence, ecological information, and statistical validation. By treating individual specimens as operational taxonomic units and analysing morphological variation independently of a priori taxonomic assignments, this work establishes a robust framework for evaluating lineage structure in a morphologically complex and ecologically dynamic group. The results demonstrate that morphological variation within *A.* subgen. *Sericea* is structured but frequently continuous, with discrete phenetic clusters embedded within broader gradients of size, growth form, and trait expression. Hierarchical clustering, ordination analyses, and bootstrap validation reveal that strong phenetic cohesion is confined to certain lineages, while other complexes exhibit substantial overlap and gradual differentiation. Growth form and plant size contribute significantly to phenetic structure, but their modest explanatory power and continuous variation caution against their use as primary taxonomic delimiters in isolation. Application of an integrative, lineage-based species concept allows these patterns to be interpreted coherently. Taxa supported by multiple, congruent lines of evidence are recognised at species rank, while morphometrically cohesive but ecologically differentiated lineages are retained at subspecific rank. This approach avoids both taxonomic inflation and excessive lumping, ensuring that taxonomic decisions reflect evolutionary independence rather than single-character divergence. The elevation of *Aspalathus lagopus* and *A. virgata* to species rank, alongside the conservative treatment of other complexes, exemplifies this balanced and evidence-based framework. Formal recognition of Sericeae at subgeneric rank further reflects the consistent morphological coherence and long-recognised taxonomic identity of the group within *Aspalathus*. The revised circumscription, comprising 35 taxa, provides a stable and transparent foundation for future taxonomic, ecological, and evolutionary research. Standardisation of diagnostic characters and the restructuring of the identification key translate analytical insights into practical tools, improving the accuracy and usability of species identification across herbaria and field contexts.

6. Taxonomic treatment

6.1. *Aspalathus subgen. Sericea Madika, subgen. nov*

Type species: *Aspalathus sericea* P.J.Bergius.

Diagnosis. *Aspalathus* subgen. *Sericea* is characterised by a persistent silky (sericeous) indumentum and dimorphic trifoliolate leaves. Leaves are always flat and silky-sericeous, with lateral leaflets often reduced and a conspicuously elongated central leaflet. In contrast, *A.* subgen. *Aspalathus* members bear terete, needle-like, or flat leaves, pubescent but never silky, and may be trifoliolate or unifoliolate or appear as a cluster at the nodes. Leaflet apices in *A.* subgen. *Sericea* are never sharply pointed, contrasting with the sometimes acutely pointed tips of *A.* subgen. *Aspalathus*.

6.1.1. *Vegetative morphology*

Members of the *A.* subgen. *Sericea* exhibits a woody, perennial habit characterised by lignified primary stems and variable branching architectures. While most taxa within this group are small to medium-sized shrubs, rarely exceeding 2.5 m in height, growth forms range widely. Low-growing, decumbent or mat-forming taxa are common and are exemplified by *Aspalathus bodkinii, A. comptonii* R.Dahlgren, *A. jardinii* du Preez & C.H.Stirt., and *A. villosa*, which form compact, low-lying cushions typically less than 0.25 m tall (Fig. 4A–C). These growth forms are frequently associated with high-altitude or exposed habitats, where reduced stature may confer protection from wind and temperature extremes. In contrast, several members of the group adopt an erect, bushy growth form, often attaining substantially greater height. Notably tall-growing species include *A. acocksii* (R.Dahlgren) R.Dahlgren, *A. altissima* R.Dahlgren, *A. virgata* Thunb., and *A. praetermissa* C.H.Stirt., du Preez & Helme, which commonly exceed 2 m in height (Fig. 4D–F). Main stems across the group are relatively slender (typically 0.1–0.2 mm

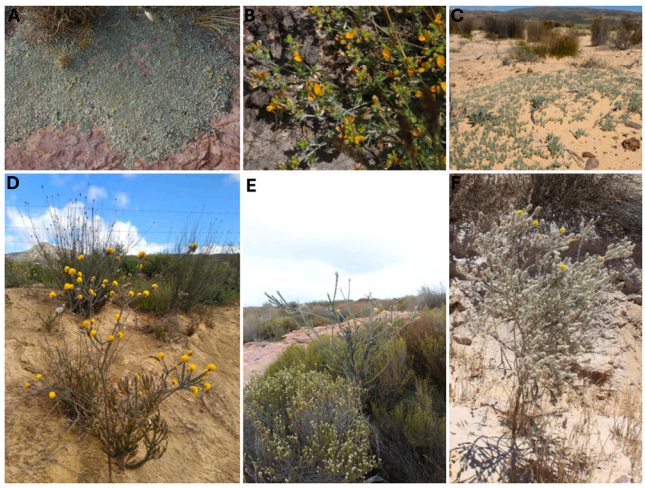

Fig. 4. Examples of growth forms observed among members of *Aspalathus* subgen. *Sericea*. (A–C) Lowgrowing, decumbent or mat-forming taxa, typically < 0.5 m tall: (A) *A. bodkinii*, (B) *A. comptonii*, (C) *A. jardinii*. (D–F) Erect shrub taxa, typically 1.0–1.5 m tall: (D) *A. acocksii*, (E) *A. altissima,* (F) *A. virgata*. No metric scale bars are provided, as photographs were sourced from iNaturalist and were not taken under standardised conditions. Height categories are based on field observations and herbarium specimen data. Image credits: © (A, D–F) Brian du Preez; (B) Charles Stirton; (C) Nick Helme; used with permission via iNaturalist.

in diameter) and covered by thin bark that tends to split longitudinally into narrow, vertical strips. Bark colour varies from pale grey to reddish-brown, contributing to differences in texture and visual appearance.

Leaves in *A.* subgen. *Sericea* are uniformly sessile and predominantly trifoliolate. A distinctive feature at the point of leaf insertion is the presence of a small, raised tubercle, which is consistently observed across the group (Fig. 5A). While such tubercles occasionally occur in other *Aspalathus* species and in closely related genera such as *Wiborgiella* Boatwr. & B.-E van Wyk, they are particularly well-developed in *A.* subgen. *Sericea*. These structures frequently bear reduced axillary branchlets or compact leaflet clusters, contributing to a fasciculate nodal appearance.

In some taxa, such as *A. dasyantha Eckl. & Zeyh.* and *A. staurantha* Eckl. & Zeyh., the tubercle is further modified into a rigid, spine-like projection, sometimes accompanied by diminutive lateral spinelets (Fig. 5B). Leaflet morphology is notably variable within the group. In species adapted to arid or montane environments, the lateral leaflets are often vestigial or greatly reduced, leaving the central leaflet prominently elongated (Fig. 5C). Across taxa, leaflet shape ranges from narrowly lanceolate to broadly obovate, with textures varying from firm-membranous to coriaceous. A prominent vegetative trait shared by nearly all members of the subgenus is a dense indumentum, typically composed of silky or villous, unbranched trichomes formed by elongated epidermal cells (Fig. 5D–F).

6.1.2. Reproductive morphology

The floral morphology in *A.* subgen. *Sericea* members conforms to the typical papilionoid floral structure, consisting of five petals differentiated into a single standard, two lateral wings, and a pair of fused keel petals. Floral symmetry is zygomorphic, with keel petals often partially fused to form a boat-like enclosure that protects the staminal column and pistil. Inflorescence architecture within the group is highly variable and appears to correlate with both phylogenetic differentiation and ecological context (Madika et al., 2026). Species such as *A. quinquefolia* Thunb. and *A. radiata* Garab. ex R.Dahlgren produce dense terminal spikes with closely arranged flowers, forming conspicuous floral displays (Fig. 6A). In contrast, *A. acocksii* and *A. argyrella* MacOwan exhibit more loosely spaced, racemose umbels (Fig. 6B), while species such as

Fig. 5. Variation in leaf morphology and surface features among selected species of *Aspalathus* subgen. *Sericea*. (A) Raised nodal tubercle in *A. albicephala*; (B) spine-like tubercle at the node in *A. dasyantha*; (C) reduced lateral leaflets with an elongated central leaflet in *A. aemula*; (D) dense, silky sericeous indumentum covering vegetative parts in *A. sericea*; (E) woolly indumentum formed by long, interwoven trichomes in *A. dunsdoniana*; (F) subglabrous surface with sparse trichomes in *A. quadrata*. Images are field photographs sourced from iNaturalist and iSpot and are intended to illustrate qualitative morphological characters only; no scale bars are provided. Quantitative measurements are given in the species descriptions. Photo credits: A, C – Brian du Preez; B, D – C.H. Stirton; E – Magriett (iSpot); F – Di Turner.

A. comptonii bear solitary flowers, either axillary or terminal, on abbreviated shoots (Fig. 6C). Floral size varies substantially within the group. Smaller-flowered taxa, such as *A. argyrella,* produce flowers approximately 5 mm in length, whereas larger-flowered species, such as *A. acocksii* and *A. ramulosa* E.Mey., reach lengths of up to 13 mm. While yellow is the predominant corolla colour, exceptions occur where *A. argyrella* presents pale violet flowers (Fig. 6D), and *A. albicephala* du Preez & C.H.Stirt. and *A. eriocephaloides* C.H.Stirt. & Muasya produce white or creamy white corollas (Fig. 6E–F).

Bracts are consistently present and primarily serve a protective function during early floral development. Their morphology varies widely, from broad and foliaceous (e.g., *A. quinquefolia*) to narrow, linear, or filiform forms, as seen in *A. dunsdoniana* Alston ex R.Dahlgren and *A. ternata* (Thunb.) Druce. Bracts in most species are densely covered in a silvery-sericeous indumentum, which often extends to the calyx and contributes to a shimmering appearance at the shoot tip. Bracteoles, situated just below or at base of the calyx, mirror the diversity observed in bracts, with inter- and intraspecific variation in shape and size noted across taxa such as *A. tridentata* Berg. ex Walp. and *A. intervallaris*. While this variation may obscure species boundaries, these structures often retain diagnostic utility when interpreted in combination with other characters.

The calyx comprises five sepals united basally into a short, often campanulate tube, with five free teeth (lobes) that exhibit a wide range of shapes across taxa. Calyx teeth vary from short and broadly triangular (*A. altissima, A. quadrata* L.Bolus) to elongate and lanceolate, with intermediate shapes (e.g., ovate, linear, or filiform) frequently encountered (Fig. 7). In most taxa, lobes exceed the tube in length and may diverge slightly at anthesis. *A. bodkinii* displays a distinct condition, with nearly circular calyx teeth and a convex apex, producing a compact, rounded floral appearance.

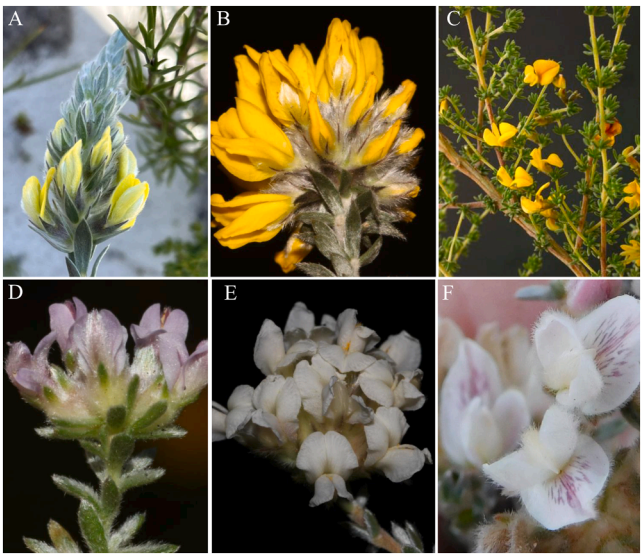

Fig. 6. Floral diversity within *Aspalathus* subgen. *Sericea*, illustrating variation in inflorescence architecture and corolla colour. (A) Conical raceme or spicate inflorescence characteristic of *A. sericea*; (B) conical umbel arrangement as observed in *A. acocksii*; (C) unifloral to bifloral inflorescence typical of *A. ramosissima*; (D–F) representative flower colour variation within the group: (D) mauve flowers in *A. argyrella*; (E) white flowers in *A. albicephala*; (F) creamy-white flowers in *A. eriocephaloides*. Images are field photographs sourced from iNaturalist and herbarium-associated image repositories and are intended to illustrate qualitative floral characters; no scale bars are provided. Quantitative floral measurements are given in the species descriptions. Photo credits: (A) Charleen Brunke; (B, E) Brian du Preez; (C) Vlok & Schutte; (D) Cliff Dorse; (F) Charles Stirton.

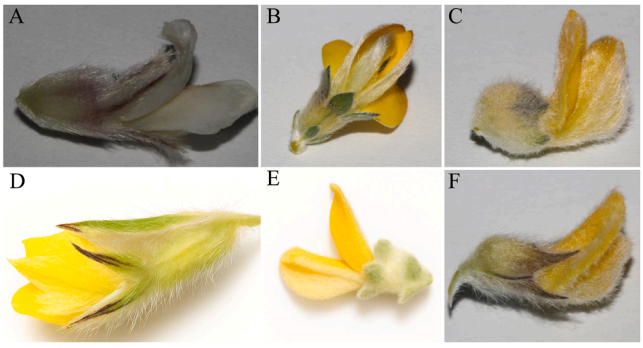

Fig. 7. Variation in calyx tooth morphology within *Aspalathus* subgen. *Sericea*, illustrating the diversity of calyx lobe shapes used as diagnostic characters. (A) Linear calyx teeth in *A. albicephala*; (B) ovate–triangular teeth in *A. oblongifolia*; (C) triangular teeth in *A. altissima*; (D) lanceolate teeth in *A. radiata* subsp. *radiata*; (E) rounded teeth in *A. bodkinii*; (F) linear–lanceolate teeth in *A. aemula*. Images are field photographs sourced from iNaturalist and are provided to illustrate qualitative differences in calyx morphology; no scale bars are included. Quantitative measurements of calyx characters are provided in the species descriptions. Photo credits: (A–D, F) Brian du Preez; (E) Dave U.

The standard petal is generally broadly ovate to subcircular in shape, although narrower forms occur in species such as *A. villosa* and *A. rotunda* subsp. *fragilis* (R.Dahlgren) Madika. While the abaxial surface is frequently covered in fine hairs, variation exists, for example, *A. argyrella* and *A. borbonifolia* R.Dahlgren are often glabrous, whereas *A. tridentata* uniquely bears a hairy upper inner margin. In most taxa, the standard petal appears uniformly coloured and unmarked; however, in a subset of species, including *A. albicephala* and *A. tridentata,* the standard exhibits pronounced longitudinal markings or stripes, which function as nectar guides (Fig. 8). Additionally, in species such as *A. intervallaris*, the

Fig. 8. Variation in standard petal colouration and nectar guide markings within *Aspalathus* subgen. *Sericea*, illustrating qualitative differences in floral pigmentation and patterning. (A) Uniformly yellow standard petal lacking nectar guide markings, representing the most common floral condition observed across the group (e.g. *A. acocksii*); (B) white standard petal with conspicuous purple nectar guide stripes in *A. albicephala*; (C) bicoloured standard petal with prominent orange basal markings in *A. lotoides* subsp. *lotoides*. Images are field photographs sourced from iNaturalist and are provided to illustrate qualitative variation in petal colour and marking; no scale bars are included. Photo credits: (A) Brian du Preez; (B–C) C.H. Stirton.

standard bears localized orange or purplish pigmentation, often in the form of basal blotches. These colour features may serve as visual cues to pollinators.

The wing petals are consistently free, oblong, lunate, or ovate in outline with obtuse apices. Their general shape is relatively stable within species, though the outer surfaces are variably pubescent, usually near the base or along the lower margins. Certain species, such as *A. sericea* and *A. tridentata*, exhibit subglabrous wing petals. A well-defined basal pocket or a broader midline invagination is present in most species and often accompanies sculptural elaboration on the adaxial (inner) surface of the petal. These sculptural features frequently take the form of shallow lunate concavities situated between or across vascular ridges (Fig. 9). The nature and orientation of sculpturing vary notably among taxa. Transversely aligned, lamellate ridges, clearly transcostal as they cross over underlying vascular folds, are prominent in *A. sericea, A. lotoides, A. quinquefolia* subsp. *quinquefolia*, and *A. tridentata*. In contrast, *A. quinquefolia* subsp. *virgata, A. rotunda* subsp. *rotunda* R.Dahlgren, and *A. heterophylla* L.f. exhibit non-transcostal, lunate folds curved, crescent-shaped ridges confined between vascular features. Weakly sculptured or nearly smooth surfaces can also be observed in other taxa, as seen in *A. quinquefolia* subsp. *compacta* R. Dahlgren (Fig. 9C), where only faint rugulose texturing is present. The claw of the wing petal is typically longer than that of the standard and is generally glabrous, although rare instances of pubescence occur in taxa such as *A. ternata* and *A. dasyantha*.

Keel petals are lunate in profile, with a curved lower and straighter upper margin, and are adnate along the lower margins. They are typically pubescent, with glabrous apices and bases. A deep articulation pocket at the base of the keel often interlocks with the wing petals. In certain taxa, such as *A. vulpina* Garab. ex R.Dahlgren, the apex of the keel is more elongate and claw-like than in other members of the group.

The androecium consists of a monadelphous staminal tube, glabrous and dorsally split, curving upward in a shape that mirrors the keel. Curvature differs by species, ranging from strongly arched (*A. vulpina*) to more subdued (*A. heterophylla*). The upper third to half of the filaments are free. Anthers are arranged in two whorls: longer, basifixed outer anthers and shorter, dorsifixed inner ones. The gynoecium consists of a short, glabrous gynophore (1–2 mm) and an ovary that ranges from ovate to linear (e.g., *A. heterophylla*), usually bearing fine hairs. The number of ovules is variable among species, ranging from two to as many as nine. The style is slender, hairy at the base, and glabrous at the apex, which terminates in a small, glandular stigma. Funicles are short to moderate, with no basal callosities observed.

Fruiting material was sparse across examined specimens, limiting direct observations of pod morphology. As a result, descriptions draw heavily from Dahlgren (1988), supplemented by limited herbarium and

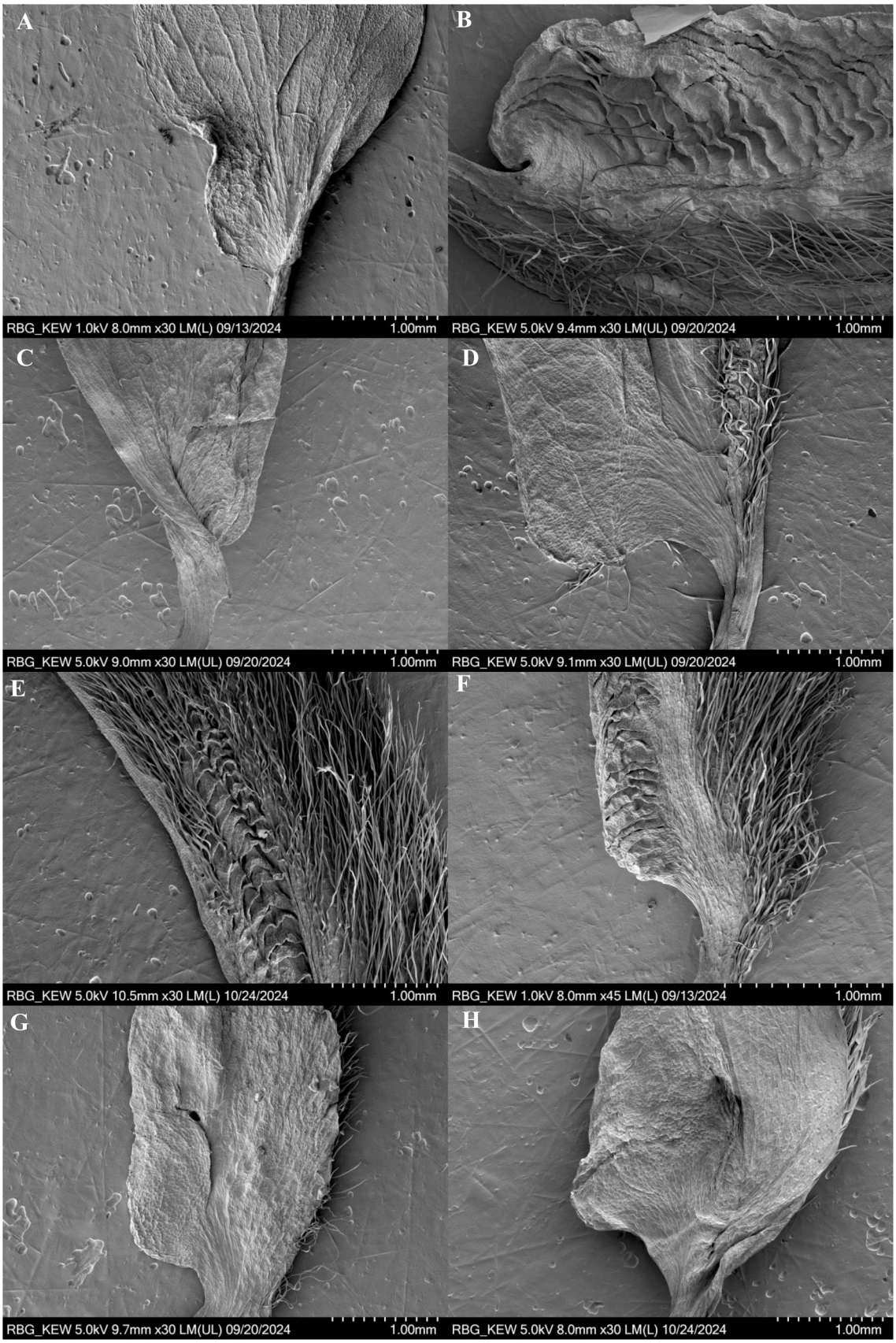

Fig. 9. Scanning electron micrographs showing basal pocket morphology on the adaxial surface of wing petals in selected *Aspalathus* group Sericeae taxa. (A) *A. quinquefolia* subsp. *quinquefolia*; (B) *A. quinquefolia* subsp. *virgata*; (C) *A. quinquefolia* subsp. *compacta*; (D) *A. tridentata* subsp. *tridentata*; (E) *A. tridentata* subsp. *rotunda*; (F) *A. lotoides* subsp. *lotoides*; (G) *A. heterophylla*; (H) A. sericea. All images shown at equal magnification (scale bar = 1.00 mm). Magnifications × 30– × 45.

field data. Pods are generally ovate to lanceolate, moderately soft, and dehiscent, typically splitting from base to apex along the lower suture. Most species retain mature pods on the plant well beyond seed dispersal. Indehiscent pods are rare but documented in species like *A. bodkinii* and *A. argyrella*, where old fruits may persist among branches for over a year. Pod surfaces are variably pubescent and display colours ranging from green to brown or black, depending on species and developmental stage. While seed morphology and dispersal traits appear consistent across the group, they remain poorly studied and warrant further investigation, particularly regarding their ecological significance and population-level variability.

Etymology. The name *Sericea* is derived from the Latin *sericeus*, meaning "silky," and refers to the persistent silky (sericeous) indumentum that is the most striking and diagnostic feature of this group. This indumentum is composed of fine, appressed, shining hairs that impart a silvery or satiny sheen to young shoots, leaves, and floral organs, and often persists on calyces, corollas, and developing fruits. Among members of this lineage, the sericeous covering not only serves as a conspicuous visual trait but also underlies its historical recognition as a morphologically coherent assemblage, as it immediately differentiates these species from the pubescent but non-silky members of the *A.* subgen. *Aspalathus*.

6.2. Key to the species of Aspalathus subgen. Sericea

1a. Plant prostrate, decumbent, or mat-forming; height <0.5 m	**Key 1**
1b. Plant erect, or ascending; height ≥0.5 m	**Key 2**

Key 1

2a Petals white to mauve	**3**
2b. Petals light (lemon) yellow, or bright yellow	**4**
3a. Leaves 2.5–6.0 mm long; flowers mauve	**1. *A. argyrella***
3b. Leaves 1.0–1.8 mm long; flowers white, sometimes pale pink	**2. *A. eriocephaloides***
4a. Plant forming compact mats; pods indehiscent	**3. *A. bodkinii***
4b. Plant not mat-forming or loosely spreading; pods dehiscent	**5**
5a. Branches thorn-like; inflorescences solitary or paired, ≤2 flowers on seasonal shoots.	**13. *A. singuliflora***
5b. Branches without thorns; inflorescences conical racemes or compound umbels, >2 flowers	**6**
6a. Internodes immediately below inflorescences elongate (often ≥10 mm); calyx narrowly ovate in outline	**4. *A. comptonii***
6b. Internode below inflorescences short (typically <10 mm); calyx triangular or narrowly lanceolate in outline	**7**
7a. Plant branches from prostrate basal shoots; standard brightly yellow and not changing colour; leaflets lanceolate	**8**
7b. Plant branches from upright stems; standard lemon-yellow or pale-yellow aging to orange reddish; leaflets ovate-oblanceolate or lanceolate	**10**
8a. Multi-stemmed shrublets, with branches arising from the base; inflorescences umbellate, with 3–4 flowers on seasonal shoots; standard petal ovate, 8.0–8.5 × 4.5–6.0 mm; wing petals elliptic-lanceolate	**5. *A. jardinii***
8b. Single-stemmed shrublets, unbranched or sparsely branched distally; inflorescences spicate, with >4 flowers on seasonal shoots; standard petal ovate-circular, 5.5–6.5 × 5.5–6.5 mm; wing petals ovate	**9**
9a. Leaves not arising from a prominent tuberculate base; inflorescences short, subglobose spikes, with 5–13 flowers.	**6a. *A. quinquefolia*** subsp. ***quinquefolia***
9b. Leaves prominent, arising from a prominent tuberculate base; inflorescences ovate spikes, usually with 10–20 flowers	**6b. *A. quinquefolia*** subsp. ***compacta***
10a. Standard petals uniformly coloured, without dark markings	**11**

(*continued on next column*)

(*continued*)

10b. Standard petals with distinct dark streaks or linear markings near the base or midline	**14**
11a. Inflorescences umbellate, terminal, 1–4-flowered, compact and few-flowered	**7. *A. villosa***
11b. Inflorescences spicate, on seasonal shoots, >10-flowered, dense and many-flowered	**12**
12a. Leaves broadly lanceolate, sparsely sericeous; standard petal broadly ovate, not hooded; wing and keel petals distinctly separated	**8. *A. lotoides***
12b. Leaves narrowly lanceolate, densely pubescent; standard petal oblong, hooded; wing and keel petals compressed, less distinctly separated	**13**
13a. Inflorescence spicate semi-globose; standard petals <6 mm; petals pubescence sericeous; calyx lobes 3–4 mm long	**9a. *A. radiata*** subsp. ***radiata***
13b. Inflorescence ovate pyramidal; standard petals >5.4 mm; petals pubescence tomentose, calyx lobes 5–5.5 mm long	**9b. *A. radiata*** subsp. ***pseudosericea***
14a. Standard petals acute-ovate, recurved, measuring 9–13 mm long and 4–6 mm wide.	**10a. *A. rotunda subsp. fragilis***
14b. Standard petals broadly ovate, not recurved, measuring ca. 6.0–8.0 mm long and 4.0–7.0 mm wide	**15**
15a. Leaves deep green, linear-lanceolate; keel partially enclosed by the wing petals; ovules 9	**11. *A. lagopus***
15b. Leaves pale green, oblanceolate; wing petals spreading, not enclosing the keel; ovules 5–6	**12. *A. heterophylla***

Key 2

1a. Branches herbaceous or flimsy, not woody; standard petals glabrous; calyx lobes ovate to circular	**14. *A. intervallaris***
1b. Branches woody; standard petals sericeous or subglabrous; calyx lobes linear-triangular or broadly triangular	**2**
2a. Leaflets arising from spur-like woody projections (tubercles or brachyblasts)	**3**
2b. Leaflets not associated with spur-like projections	**10**
3a. Projections spine-like, with a sharp, pointed tip	**4**
3b. Projections enlarged, knot-like or tuberculate, not spine-tipped	**6**
4a. Standard petals subglabrous, with hairs restricted to the margins; spines short (1–3 mm)	**5**
4b. Standard petals fully sericeous; spines longer (3–5 mm)	**9**
5a. Bracts narrowly elliptic to oblanceolate, 2.0–4.0 × 0.5–1.0 mm; wing petals obliquely ovate, 7.5–8.5 × 4.0–4.5 mm; keel petals lunate, 6.0–6.5 × 4.0–4.5 mm	**15. *A. dasyantha***
5b. Bracts broadly oblanceolate, 2.5 × 1.0 mm; wing petals oblong-elliptic, 8.0 × 4.0 mm; keel petals triangular-lunate, 8.0 × 4.0 mm	**16. *A. oblongifolia***
6a. Inflorescences conical umbels, 2–8 flowered per seasonal shoot	**17. *A. ramulosa***
6b. Inflorescences pyramidal to ovate spikes, more than 10 flowers per seasonal shoot	**7**
7a. Inflorescences spicate, up to 50 mm long; standard petals circular; flower bracts oblong or oblanceolate, 2–4 mm long and 0.5–0.8 mm wide	**18. *A. altissima***
7b. Inflorescences pyramidal to ovate, up to 30 mm long; standard petals ovate, flower bracts linear-lanceolate, 4–11 mm long and 0.7–3 mm wide	**8**
8a. Wing petals oblong to very narrowly elliptic, 7.0 × 2.7 mm; ovules 3	**19. *A. aemula***
8b. Wing petals very narrowly obovate-oblong, 9.0–9.5 × 3.7–4.5 mm; ovules 4	**20. *A. sericea***
9a. Leaflets long (5.5–18.0 × 1.4–2.0 mm); flowers 1–2 per seasonal shoot	**21. *A. ternata***
9b. Leaflets shorter (2.0–8.0 × 0.5–1.5 mm); flowers more than 2 per seasonal shoot	**11**
10a. Standard uniformly light to bright yellow, glabrous, including near the margins; calyx yellowish green with triangular teeth	**22. *A. tridentata***
10b. Standard yellow with central red markings, margins sparsely hairy; calyx yellow green with teeth lanceolate-triangular	**23. *A. staurantha***

(*continued on next page*)

(*continued*)

11a. Leaflets subequal in length; plants covered with densely woolly-sericeous hairs	**12**
11b. Lateral leaflets highly reduced (central leaflet distinctly longer than laterals); plants covered with silvery-sericeous hairs	**13**
12a. Inflorescences terminal heads, with 10–25 flowers; not surrounded by uppermost leaves; standard petals elliptic, 8.0–8.5 × 6.5–7.0 mm; wing petals oblong to narrowly elliptic…..	**24. *A. dunsdoniana***
12b. Inflorescences heads of 4–15 flowers, partly surrounded by uppermost leaves; standard petals circular, 5.5–7.0 × 6.5–7.5 mm; wing petals narrowly triangular-ovate	**25. *A. salicifolia***
13a. Pods triangular-lanceolate	**14**
13b. Pods lanceolate or obliquely ovate	**15**
14a. Low branches up to 0.6 m long, arising from a short vertical common rootstock (up to 10 mm thick)	**26. *A. quadrata***
14b. Erect branches up to 0.7 or rarely 1.2 m long; not arising from a thickened vertical rootstock	**27. *A. caledonensis***
15a. Inflorescences 1-2 flowered on seasonal shoot	**28. *A. incana***
15b. Inflorescences pyramidal to elongate spike with >10 flowers on seasonal shoots	**16**
16a. Flowers yellow or pale yellow	**17**
16b. Flowers white	**29. *A. albicephala***
17a. Plant <1.5 m tall	**10b. *A. rotunda*** subsp. ***rotunda***
17b. Plant ≥1.5 m tall	**18**
18a. Leaflets densely clustered, forming compact, radially arranged rosettes on stem; leaflets rigid textured, veins not visible and subglabrous; bracts obovate to oblanceolate, 5–11 × 3–5 mm, tapering to an acuminate apex	**30. *A. acocksii***
18b. Leaves evenly spaced, forming spiral or alternate arrangements along the stem; leaflets soft textured, with visible linear venation and silky pubescence; bracts broadly oblanceolate to ovate or circular, 5–8 × 4.5–7.5 mm, with an acute apex	**19**
19a. Flowers pale yellow, with a buff-orange nectar patch; standard petals 4.5–5.0 × 3.0–3.5 mm; wing petals equal in length to keel	**31. *A. praetermissa***
19b. Flowers golden yellow, with a dark orange nectar patch or none; standard petals 5.5–8.5 × 4.5–7.5 mm; wing petals longer than keel	**32. *A. virgata***

6.3. Species treatments

1. ***Aspalathus argyrella*** MacOwan, in *J. Linn. Soc., Bot.* 25: 387 (1890); H. Bolus & Wolley-Dod in *Trans. S. Afr. phil. Soc.* 14:252 (1903); Adamson & Salter, *Fl. Cape Penins.* 475 (1950); R. Dahlgren in *Op. bot. Soc. bot. Lund* 4: 270 (1960); *ibid.* 9 (1): 145 (1963), *Fl. S. Afr.* 3,6:29 (1988). Type: South Africa, Western Cape, Tulbagh Div (3319): Nieuwe Kloof near Tulbagh, (–AC), Oct 1885, *MacOwan, 567* (BOL, lecto.! here designated; BM–image!, K!, PRE–image!, SAM–image! isolecto.).

Note. *Aspalathus argyrella* MacOwan was described without designation of a holotype. MacOwan 567 represents a set of syntypes distributed across several herbaria. Although Dahlgren later referred to this material as "type", no effective lectotypification was made. The specimen MacOwan 567 (BOL) is here designated as lectotype.

Decumbent, mat-forming, resprouting shrublet up to 0.25 m tall. *Branches* herbaceous, yellow-green, multi-stemmed. *Leaves* trifoliolate, silky sericeous, base sessile without tubercle. *Leaflets* flat, linear-oblanceolate, 2.5–6.0 × 0.8–1.0 mm, acute at apex, both surfaces silky-sericeous. *Inflorescences* capitate, terminal on short shoots; 3–10-flowered. *Flowers* small, mauve, subsessile. *Pedicels* reduced <0.5 mm long. *Bracts* linear-subulate, 3.5–4.5 × 0.7–1.0 mm, silky-sericeous; bracteole like bracts. *Calyx* campanulate, 2–4 mm long, whitish-green, sericeous; teeth 1.5–2.5 mm long, green, triangular, acute, sericeous. *Standard petals* obovate, 2.8–3.5 × 2.0–2.8 mm, apex rounded, outer surface sparsely tomentose; inner surface with purple nectar guide at base of blade, claw 1.5–2.2 mm, glabrous. *Wing petals* linear-oblong, 3.5–4.5 × 0.9–1.2 mm, glabrous; petal sculpturing lunate, with small curved folds concentrated on the lower half; claw 1.0–2.5 mm long. *Keel petals* 2.8–3.2 × 1.0–1.5 mm, fused, lunate, apex concave, silky-sericeous; claws 1.5–2.6 mm. *Androecium* 4.5–6.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 1.8–3.5 mm long; ovary superior, 2.5–4.4 mm long, oblong, pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate; ovules 2. *Pod* and seeds not seen (Supplementary Figure B4).

Diagnostic characters. *Aspalathus argyrella* is most similar to *A. villosa* and *A. bodkinii* in its mat-forming habit, small stature, and silky-sericeous indumentum. However, *A. argyrella* has mauve flowers vs yellow flowers in *A. villosa* and *A. bodkinii*; loosely arranged inflorescences vs congested floral heads in *A. bodkinii*; and longer bracteoles vs shorter bracteoles in both. The standard petal is smaller (<3.5 mm long) vs larger (>3.5 mm) in *A. villosa* and *A. bodkinii*. The leaflets are linear-oblanceolate in *A. argyrella* vs narrowly oblanceolate in the latter two species.

Distribution and habitat. Widespread from the Cape Peninsula to the southern Cederberg, including the areas around Hermanus, Caledon, Tulbagh, and Ceres. It occurs within the Fynbos Biome, primarily in Cederberg Sandstone Fynbos [FFs 4], Winterhoek Sandstone Fynbos [FFs 5], and Peninsula Sandstone Fynbos [FFs 9] (Fig. 10A). The species grows on well-drained, acidic sandy soils derived from Table Mountain Sandstone, typically with a humic surface layer. It occupies open, sunny habitats on level terrain, often in post-fire regeneration areas, and occurs from near sea level up to about 400 m elevation.

Flowering time. September–October.

Etymology. The species epithet *argyrella* is derived from the Greek *argyros*, meaning "silver," and refers to the plant's characteristic silvery-grey pubescence (Dahlgren, 1960).

Conservation Status. Raimondo et al. (2009) classified the species as Least Concern (LC) based on an Extent of Occurrence (EOO) of 81 km^2. However, its relatively limited Area of Occupancy (AOO) of 80 km^2 might indicate a more threatened status (Endangered, EN) when evaluated by occupancy criteria.

Specimens examined.

South Africa. Western Cape. **3219 (Wuppertal):** Between Groot River and Elandskloof, without date, *Leipoldt, C.F.L. 3207* (BOL); Knolfontein, Swartruggens, 60 km NE of Ceres (–DC), 21 Oct 2015, *Jardine, I. 2390* (NBG); West of Rooihogte Mountain near Krom River, (–CB), 18 Nov 1956, *Dahlgren, R. & Peterson, B. 1229* (LD). **3319 (Worcester):** Tulbagh Div., Nieuwe Kloof near Tulbagh, (–AC), 01 Oct 1885, *MacOwan, P. 567* (BOL, K); Houtenbergs River, 40.2 km N of Ceres at Kleinvlei Bridge, (–AB), 20 Oct 1958, *Acocks, J.P.H. 19886* (LD, K, PRE); Koue Bokkeveld, 11.3 km W of Sydown Pass, (–AB), 01 Apr 1928, *Hutchinson, J. 1054* (K). **3418 (Simonstown):** along the range between Smitswinkel Bay and Swartkops peak, (–AB), 05 Nov 1986, *Esterhuysen, E.E. 36398* (BOL, BR); Kalk Bay Mountain, (–AB), 25 Sept 1960, *Esterhuysen, E.E. 28516* (BOL); Kalk Bay Mountain, Cave Peak, (–AB), 17 Oct 1946, *Compton, R.H. 18603* (BOL); Plateau on the Muizenberg Mountain, (–AB), without date, *Salter, T.M. Sub-BH26162* (BOL); Tokai Flats, (–AB), without date, *Guthrie, F.A. 1194* (BOL); Klaasjagters Farm, (–AB), 29 Sept 1938, *Salter, T.M. 7707* (BOL); Simonstown, (–AB), without date, Bolus, H. *Sub-BH4947* (BOL); Cape Peninsula, Silvermine Nature Reserve, (–AB), 10 Nov 2016, *Wilman, V. 7074SM* (NBG); Kalk Bay Mountain, Boyes Drive, (–AB), 19 Oct 1974, *Goldblatt, P. 3100* (PRE); Kalk Bay Mountain, (–AB), 25 Aug 1960, *Esterhuysen, E.E. 28516* (PRE); Red Hill, (–AB), 28 Aug 1960, *Taylor, H.C. 2574* (LD, K, PRE); near Cirkels vlei, (–AD), 18 Oct 1944, *Leighton, F.M. 658* (BOL); Cape of Good Hope, Simon's Bay (–AD), without date, *Wright, C. s.n.* (GH, K); Cape Point, along road to Olifantsbos, 0.7 km NE of Menskoppunt, (–AD), 26 Oct 2007, *Helme, N.A. 5137* (NBG); Flats between Bonteberg and

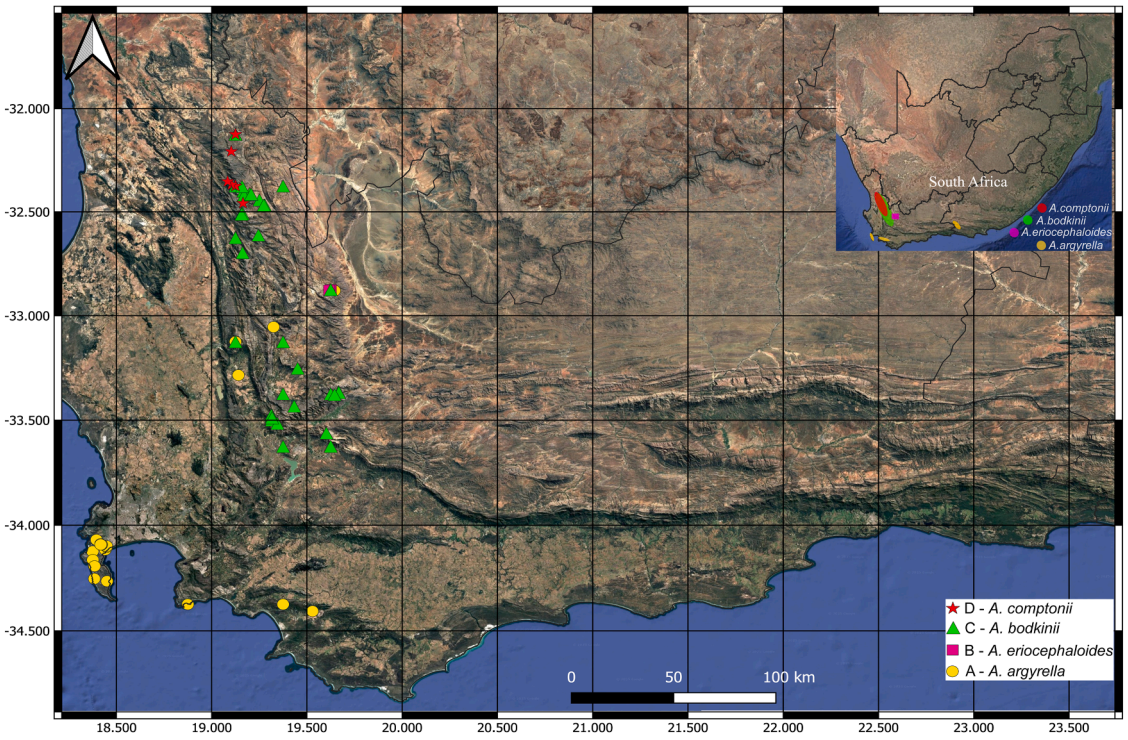

Fig. 10. Known distribution of *Aspalathus argyrella* (A), *A. eriocephaloides* (B), *A. bodkinii* (C), & *A. comptonii*, based on verified herbarium specimens and field records. Each point represents a confirmed locality.

Garslands Kloof, (–AD), 06 Oct 1971, *Taylor, H.C. 7947* (NBG); Cape of Good Hope Nature Reserve, along Olifantsbos road near plot 29, (–AD), 29 Sept 1978, *Taylor, H.C. 9867* (NBG); Southern Hottentots Holland Mountains, Kogelberg State Forest, ca 60 km from Dwars River, (–BB), 22 Sept 1992, *Kruger, I.J. 794* (PRE). **3419 (Caledon):** Vogelklip, (AD), 29 Sept 1942, *Barker, W.F. 1862* (BOL); Between Hermanus and Stanford, (–AD), 08 Oct 1967, *Esterhuysen, E.E. 31737* (BOL); East side of Vogelgat River, (–AC), 18 Oct 1982, *Williams, S.L. 871* (K); Fisheries W of Vogelgat River, (–AC), 04 Oct 1986, *Williams, S.L. 1170* (PRE).

2. ***Aspalathus eriocephaloides*** C.H.Stirt. & Muasya, in *S. Afr. J. Botany* 104: 44 (2016). Type: South Africa, Western Cape, Wuppertal (3219): Swartruggens, Knolfontein, 1.4 km west of Kagga Kamma turnoff on Katbakkies Pass Road, (−DC), 09 Nov 2014, *Helme, N.A. 8119* (BOL, holo.! NBG! iso.).

Erect, small, reseeding shrublet, 0.2–0.3 m tall. *Branches* woody and flexible; young branches pale yellow and sparsely silvery sericeous. *Leaves* trifoliolate, in fascicles, base arising from a prominent tubercle. *Leaflets* flat, lanceolate, 1.0–1.8 × 0.5 mm, acute at apex. *Inflorescences* capitate, terminal on seasonal brachyblasts, consisting of 3–6 flowers, borne atop a 20–30 mm brachyblast. *Flowers* white to very pale pink bearing pink nectar-guide stripes centrally on the standard petal, sessile, and densely sericeous. *Pedicels* 7–8 mm long. *Bracts* lanceolate, 1.5–2.0 × 1.5 mm, resembling vegetative leaflets; bracteoles 2.5–3.0 × 0.5 mm, narrowly lanceolate, sericeous. *Calyx* campanulate, 4 mm long, densely sericeous; teeth triangular, 2 × 2 mm, dark green, equal in length and width, with soft, sericeous texture. *Standard petals* narrowly ovate, 4.0 × 3.0 mm, apex acute, abaxially densely sericeous; claw 2.0 mm, slightly curved, scarcely channelled. *Wing petals* oblanceolate, 4.0 × 2.0 mm, adaxial surface glabrous except for fine erect-appressed hairs along the midrib and secondary veins, abaxial surface densely sericeous on the lower basal fourth; petal sculpturing lamellate, transcostal, composed of thin longitudinal ridges aligned with the raised midvein and faint lateral veins, claw ~1.5 mm, sharply recurved. *Keel petals* lunate, 5.0 × 2.0 mm, fused, pocketed, apex obtuse, sericeous towards the tip; claw 2.0 mm, narrow and ribbon-like. *Andoecium* 5.0 mm long; filaments fused into a staminal tube with dorsal slit; anthers dimorphic, 5 shorter basifixed and 5 longer dorsifixed, versatile, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 5.0 mm long; ovary 1.0 mm, superior, narrowly oblong, shaggy pubescent along upper margin and base of the style; style straight to gently upcurved; stigma capitate, slightly broadened, receptive surface apical; ovules 2–3. *Pod* and seed not seen (Supplementary Figure B5).

Diagnostic characters. *Aspalathus eriocephaloides* is most similar to *A. villosa* Thunb., but can be distinguished by its erect, flexuose, much-branched, bushy growth form, in contrast to the sprawling, decumbent habit of *A. villosa*. It has smaller leaflets (1.0–1.8 mm long) vs larger leaflets (3–8 mm) in *A. villosa*, and terminal, capitate inflorescences with 3–6 flowers vs 1–4 flowers per inflorescence in *A. villosa*. Flowers are white or pale pink with mauve nectar guides on the standard petals in *A. eriocephaloides* vs yellow flowers in *A. villosa*. It also occurs at higher elevations (above 1000 m) vs below 1000 m in *A. villosa*. The species is also similar to *A. comptonii* in its capitate inflorescences and compact stature but can be distinguished by having whiter flowers vs yellowish to cream flowers in *A. comptonii*.

Distribution and habitat. *Aspalathus eriocephaloides* is endemic to the Swartruggens region of the Wuppertal Division, Western Cape (Fig. 10B). It is confined to Swartruggens Quartzite Fynbos (FFq 2), a form of arid mountain fynbos characterised by sparse, low shrubland. The species occurs at elevations around 1200 m, growing on firm, sandy soils derived from quartzitic sandstone.

Flowering time. November.

Etymology. The specific epithet *eriocephaloides* is derived from the genus *Eriocephalus* (Asteraceae), and alludes to the species' resemblance to the fluffy, white fruiting heads of certain *Eriocephalus* species commonly referred to as "kapokbossies" which co-occur in the same habitat (Stirton and Muasya, 2016). The name highlights this superficial similarity in appearance, particularly during fruiting.

Conservation Status. *Aspalathus eriocephaloides* is an extremely range-restricted species, currently known from a single locality near a

major access road, with an estimated Extent of Occurrence (EOO) of 0.1 km^2 and an Area of Occupancy (AOO) of 8 km^2, both of which meet the threshold for Critically Endangered (CR) under IUCN Criterion B (IUCN, 2024). The species is effectively confined to a single population occurring on arid shrubland within a private nature reserve, where the likelihood of large-scale habitat transformation is currently low. However, its severe range restriction makes it highly susceptible to stochastic events, localized disturbance, or habitat degradation, which could rapidly affect the entire global population. Following the IUCN Red List Categories and Criteria, the species is here assessed as Critically Endangered [CR B1ab (i, ii, iii) + 2ab (i, ii, iii)], reflecting its extremely small EOO and AOO, occurrence at a single location, and inferred vulnerability to potential habitat disturbance. This region is poorly collected away from roads so other populations should be looked for in the region.

Specimens examined.

South Africa. Western Cape: **3219 (Wuppertal):** Swartruggens, Knolfontein, 2 km from entrance to Farm Knolfontein towards Ceres (–DC), 19 Nov 2015, *Stirton, C.H. & Jardine 14187* (BOL); Farm Knolfontein, 60 km NE of Ceres (–DC), 3 Nov 2015, *Jardine 2415* (BOL).

3. ***Aspalathus bodkinii*** Bolus, in *J. Bot., Lond.* 34: 19 (1896); R. Dahlgren in *Op. bot. Soc. Bot. Lund* 4:304 (1960); *ibid.* 9 (1):144 (1963); *Bot. Notiser* 121:519 (1968); *Fl. S. Afr.* 3,6:41 (1988). Type: South Africa. Western Cape. Ceres Div (3319): Skurftebergen near Gydouw, (–AB), Dec 1891, *Bodkin, A. 7574* (BOL, holo.! K!, iso.).

Decumbent, mat-forming, resprouting shrublet up to 0.25 m tall. *Branches* woody, with a sympodial branching pattern, peduncle-like internode, sericeous. *Leaves* trifoliolate, fascicles, tuberculate leaf base. *Leaflets* flat, elliptic-oblong, 3– 4.5 × 0.5–1.2 mm, acute at apex. *Inflorescences* unifloral, in the axil of the bract. *Flowers* large, yellow, with reddish-brown to maroon nectar guides concentrated along the lower central region. *Pedicels* 0.7–1 mm long. *Bracts* oblanceolate, 3.5–4 × 0.6–3 mm, ovate-circular, sericeous; bracteoles linear, 1.5–3 × 0.5–2 mm, narrowly ovate-lanceolate, sericeous. *Calyx* campanulate, 3–5 mm long, whitish-green, sericeous; teeth ovate or circular, 1.5–3 mm long, obtuse, silky-sericeous. *Standard petals* broadly ovate, 4–7.5 × 3.8–5.5 mm, apex rounded; claw 2.0–3.0 mm long, glabrous. *Wings petals* oblong, 3.5–5.8 × 1.3–1.5 mm, glabrous above; petal sculpturing lunate, with small curved folds concentrated on lower half; claw 1.8–2.5 mm long. *Keel petals* lunate, 3.6–4.5 × 1.5–2 mm, fused, apex concave, enclosing the reproductive organs, yellow with possible reddish tinge near the apex; margins lightly ciliate; claws 1.5–2.5 mm. *Androecium* 5.4–6.5 mm long; filaments fused into staminal tube with dorsal slit; anthers 10, with 6 shorter basifixed and 4 longer dorsifixed inserted apically or subapically with parallel pollen sacs, tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 2.5–4 mm long; ovary 1.5–2.5 mm, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; 2 ovules. *Pod* enclosed in the calyx, triangular-ovate, c. 5 × 2.5 mm, silvery sericeous, indehiscent. *Seeds* not seen (Supplementary Figure B6).

Diagnostic characters. *Aspalathus bodkinii* is most similar to *A. villosa*, both species sharing a mat-forming, low-growing habit with symmetrical, sericeous leaflets and yellow flowers. However, *A. bodkinii* has broader, elliptic-oblong leaflets (3.0–4.5 × 0.5–1.2 mm) vs narrower, linear to narrowly oblanceolate leaflets (2.5–5.5 × 0.5–1.3 mm) in *A. villosa*. The leaflets of *A. bodkinii* are arranged in dense fascicles vs more loosely clustered in *A. villosa*. It also has larger floral parts and exhibits a sympodial branching pattern with woody stems and peduncle-like internodes vs slender, more decumbent stems in *A. villosa*. The inflorescence is consistently unifloral vs 2–4-flowered heads in *A. villosa*.

Distribution and habitat. *Aspalathus bodkinii* is restricted to wind-swept mountain summits of the Western Cape, occurring in the higher regions of the Worcester, Ceres, and Clanwilliam Divisions (Fig. 10C). It occupies open, rocky habitats in alpine-like conditions, typically above 1 500 m (±5 000 ft) elevation. The species grows in sandy or gravelly soils derived from Table Mountain Sandstone, within high-altitude fynbos vegetation corresponding to Swartruggens Quartzite Fynbos [FFq 2], Cederberg Sandstone Fynbos [FFs 4], and Western Altimontane Sandstone Fynbos [FFs 30].

Flowering time. December–January.

Etymology. The specific epithet *bodkinii* honours Professor Alfred A. Bodkin (1847-1930), a British-born plant collector in South Africa who worked with Harry Bolus and accompanied him on collecting trips. He was Professor of Mathematics at Bishop's, Cape Town from 1881 to 1902. He collected the type specimen (Dahlgren, 1960).

Conservation Status. *Aspalathus bodkinii* is currently regarded as widespread and stable, with no evidence of significant population decline. It was assessed as Least Concern (LC) by Raimondo et al. (2009). However, updated spatial data suggest emerging conservation concerns. The species exhibits an Extent of Occurrence (EOO) of 7,944 km^2, which falls within the threshold for Vulnerable (VU), and an Area of Occupancy (AOO) of 140 km^2, qualifying it for Endangered (EN) status under IUCN criteria.

Specimens examined.

South Africa. Western Cape. **3219 (Wuppertal):** Cederbergen, Krakadouw Peak, (–AA), 31 Dec 1948, *Esterhuysen, E.E. 15005* (BOL); Cederberg Mountain, Krakadouwberg, (–AA), 30 Dec 1941, *Esterhuysen, E.E. 7503* (BOL, LD); Great Krakadouw, (–AA), 05 Jan 1988, *Taylor, H.C. 11958* (PRE, NBG); Heuningvlei, (–AA), 26 Sept 1982, *Taylor, H.C. 10477* (K, PRE); Cedarberg Mountain, ca 2.4 km E of Welbedacht Forest Station, Middleberg range, (–AA), 09 Dec 1965, *Dahlgren, R. & Strid, A. 4486* (LD); Sneeuberg Hut area, (–AC), 08 Jan 1982, *Forsyth, G.G. 165* (NBG, PRE); Sneeuberg, (–AC), 13 Mar 1978, *Kruger, F.J. 1735* (PRE); Sneeuberg, (–AC), 09 Feb 1977, *Haynes, R.A. 1360* (NBG, PRE); Cederberg Mountain, (–AC), without date, *Stokoe, T.P. 7309* (BOL); Algeria, Cedarberg Wilderness Area Farm, Southern slopes of Tafelberg, (–AC), 21 Dec 2001, *Desmet, P.G. 3415* (NBG); Algeria, (–AC), 10 Dec 1981, *Viviers, M. 14* (PRE); Farm Rosendal on road between Ceres and Algeria Forest Station, (–AC), 10 Oct 1976, *Hugo, L. 739* (K); Cederberg, Wolfberg, (–AD), 15 Dec 1950, *Esterhuysen, E.E. 18116* (BOL); Wolfberg, (–AD), 26 Nov 1983, *van Wyk, C.M. 1503* (PRE); Between Ceres Karoo and Koue Bokkeveld, (–AD), 15 Sept 1979, *Van Breda, P.A.B. 4466* (PRE); Elandskloof, (–CA), 03 Oct 1940, *Levyns, M.R.B. 7249* (BOL); Plateau between Sneeuberg Peak & Hut, (–CA), 18 Feb 2017, *Du Preez, B. 274* (BOL); Knolfontein, Swartruggens, 60 km NE of Ceres, (–DC), 26 Oct 2016, *Jardine, I. 2614* (BOL); Knolfontein, 60 km NE of Ceres, (–DC), 30 Oct 2018, *Jardine, I. 3038* (BOL); Southern Cedarberg, (–DC), 17 Dec 1983, *Taylor, H.C. 10848* (NBG); Loskop Peak, Southern Cedarberg, (–DC), 06 Dec 1970, *Taylor, H.C. 7853* (LD). **3319 (Worcester):** Twenty-Four Rivers Mountains above Porterville, (–AA), 23 Oct 1949, *Esterhuysen, E.E. 16154* (BOL); Olifants River Mountain, neck south of Groen, (–AA), 27 Dec 1946, *Esterhuysen, E.E. 13450a* (BOL); Schurfteberg near Gydouw, (–AB), 01 Dec 1891, *Bodkin, A.A. Sub-BH7574* (BOL); Roodeberg, (–BC), 27 Dec 1952, *Esterhuysen, E.E. 20956* (BOL); Milner Peak, (–AD), 16 Dec 1948, *Esterhuysen, E.E. 14900* (BOL); Michell Peak, (–AD), 10 Dec 1948, *Esterhuysen, E.E. 14775* (BOL); Waaihoek Peak, (–AD), 24 Jan 1949, *Esterhuysen, E.E. 15112* (BOL); Mosterts Hoek Twins, (–AD), 08 Jan 1944, *Esterhuysen, E.E. 9828* (BOL); Waaihoek Peak, (–AD), 12 Jan 1954, *Van Niekerk, G. 22583* (BOL, LD); Waaihoek Peak, (–AD), 15 Dec 1942, *Esterhuysen, E.E. 8310* (BOL); Waaihoek Peak, (–AD), 24 Dec 1950, *Esterhuysen, E.E. 18193* (BOL); Schurfteberg Peak, above the Witels, (–AD), 14 Jan 1960, *Esterhuysen, E.E. 28425* (BOL); Sentinel Peak, Hex River Mountains, (–AD), 15 Dec 1957, *Esterhuysen, E.E. 27430* (BOL); Roodeberg, (–BC), without date, *Esterhuysen, E.E. 1511*(BOL); Matroosberg, (–BC), 02 Jan 1897, *Bolus, A. 4399* (BOL); Keeromsberg, (–CA), 22 Nov 1956, *Dahlgren, R. & Peterson, B. 1270* (K, LD); Brandwacht Mountain, (–CB), without date, *Stokoe, T.P. 9592* (BOL); Matroosberg, Fonteintjiesberg, (–CB), 27 Nov 1983, *Forsyth, G.G. 311* (PRE); Twenty Four Rivers Mountains above Porterville, (–CC), 23 Oct 1949, *Esterhuysen, E.E. 16154* (K). **3320 (Montagu):** Waboomsberg, NE of Ceres, (–CB), 02 Dec 2006, *Helme, N.A. 4075* (NBG).

4. ***Aspalathus comptonii*** R.Dahlgren in *Op. Bot. Soc. Bot. Lund* 4: 309 (1960); *ibid.* 9(1): 144 (1963), *Bot. Notiser* 121: 519 (1968), *Fl. S. Afr.* 3,6: 43 (1988). Type: South Africa, Western Cape, Wuppertal (3219): Middleberg Plateau, Cederberg Mountains, (−AC), 14 Dec 1941, *Esterhuysen, E.E. 7240* (BOL, holo.!).

Prostrate, reseeding shrublet up to 0.35 m tall. *Branches* herbaceous, thin and sparsely branched, sympodial branching pattern occasionally evident on older growth, sericeous. *Leaves* trifoliolate. *Leaflets* on long-shoots oblanceolate, 5.0–9.5 × 1.0–1.5 mm, obtuse at apex, weak in texture, glabrescent with age, initially tomentose, becoming yellowish-green and smooth, venation not prominent; leaflets on short-shoots smaller, 3.5–6.5 × 0.8–1.0 mm, remaining tomentose and greyish. *Inflorescences* terminal, pedunculate spike of 2–4 flowers; internodes of up to 5 mm. *Flowers* pale to light yellow. *Pedicels* short (~0.5 mm). *Bracts* narrowly ovate to obovate, 4.5–5.0 × 1.0–1.5 mm, acuminate, pubescent on both surfaces; bracteoles ~3.0 × 0.8–1.0 mm, oblanceolate, acuminate, also finely pubescent. *Calyx* openly campanulate, 4.5–5.0 mm long, densely sericeous; teeth 2.5–3.0 × 1.0–1.2 mm, narrowly ovate, acute, greenish, sericeous; longer than the calyx tube. *Standard petals* obovate, 7.0–8.5 × 5.0–6.5 mm, apex rounded, abaxially sericeous; claw 1.0 mm long. *Wing petals* oblanceolate, 6.0–7.0 × 2.0 mm, apex rounded, claw 2.0 mm long, surfaces sericeous both basally and apically; petal sculpturing lunate, with 1–2 longitudinal rows of minute crescent-shaped folds concentrated near the base of the blade. *Keel petals* narrowly lunate, 6.0 × 2.0–3.0 mm, upper margin slightly S-curved, nearly entirely sericeous; claw 2.2 mm long. *Androecium* ~8.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 3.0–5.0 mm long; ovary superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 2. *Pods* and seeds not seen (Supplementary Figure B7).

Diagnostic characters. *Aspalathus comptonii* is most similar to *A. bodkinii*, both species sharing a decumbent, mat-forming growth form. They differ, however, in several diagnostic features: leaves are longer in *A. comptonii* (5.0–9.5 × 1.0–1.5 mm) vs shorter in *A. bodkinii* (3.0–4.5 × 0.5–1.2 mm); inflorescences bear 2–4 flowers per branch vs consistently unifloral in *A. bodkinii*; and calyx teeth are narrowly ovate in *A. comptonii* vs broadly circular in *A. bodkinii*.

Distribution and habitat. *Aspalathus comptonii* appears to be a local endemic of the Middleberg Mountain, part of the Cederberg range within the Clanwilliam Division (Fig. 10D). Known occurrences are limited to a single collection event involving E. Esterhuysen, R.H. Compton, and T.P. Stokoe, indicating a highly restricted distribution. The species inhabits rocky montane environments within Cederberg Sandstone Fynbos [FFs 4], a vegetation unit of the Fynbos Biome associated with coarse, sandy soils derived from Table Mountain Sandstone. Further ecological details remain poorly documented due to its rarity.

Flowering time. December.

Etymology. The specific epithet *comptonii* honours Professor Robert Harold Compton (1886–1979), a prominent South African botanist and former director of the National Botanic Gardens in Kirstenbosch. He was instrumental in advancing botanical exploration in the Cape Floristic Region and played a foundational role in compiling regional floras. The name commemorates his contribution as one of the original collectors of the type material of this species (Dahlgren 1960).

Conservation Status. *Aspalathus comptonii* is considered rare and was classified as such by Raimondo et al. (2009). Its restricted range and limited known localities place it within the Endangered (EN) category under IUCN criteria, with an estimated Extent of Occurrence (EOO) of 127 km^2 and an Area of Occupancy (AOO) of 24 km^2. Its apparent habitat specificity and limited records highlight the need for ongoing field surveys and habitat protection.

Specimens examined.

South Africa. Western Cape. **3219 (Wuppertal):** Heuningvlei, in shade of Eucalypt tree along track, (–AA), 26 Sept 1982, *Taylor, H.C. 10477* (NBG); Cedarberg, Middleburg Plateau, (–AC), 28 Dec 1962, *Esterhuysen, E.E. 30020* (BOL, LD, PRE); Cedarberg, along path between Crystal Pool and Bassonsklip, (–AC), 08 Nov 1969, *Taylor, H.C. 7453* (NBG); Cedarberg Mountains, N of Algeria Valley, Middelberg range, halfway between Middleberg Hut and Crystal Pool Hut, (–AC), 20 Nov 1965, *Dahlgren, R. 4285* (LD, NBG); Middelberg, (–AC), Dec 1941, *Stokoe, T.P. s.n.* (SAM); Middleburg Plateau, (–AC), 14 Dec 1941, *Compton, R.H. 12686* (NBG); Sneeuwberg, Cedarhout Kloof, (–AC), 17 Oct 1923, *Pocock, M.A. 329* (NBG); Heuningvlei, (–AC), 24 Oct 1923, *Pocock, M.A. 606* (NBG).

5. ***Aspalathus villosa*** Thunb., *Prodr. Pl. Cap.* 2: 125 (1800); Diss. Bot. *Aspalathus* 1: 8 (1802); *Fl. Cap.*, ed. 2: 574 (1823); Walp., *Linnaea* 13: 483 (1839); Benth. in *Hook., Lond. J. Bot.* 7: 601 (1848); Harv., *Fl. Cap.* 2: 106 (1862); R.Dahlgren, *Op. Bot. Soc. Bot. Lund* 4: 301 (1960); *ibid.* 9(1): 144 (1963), *Fl. S. Afr.* 3,6: 39 (1988). ≡ *Aspalathus pilosa* Willd., *Sp. Pl.* 3: 964 (1803); DC., *Prodr.* 2: 142 (1825), *nom. illeg.* ≡ *Paraspalathus villosa* (Thunb.) Presl, *Bot. Bemerk.* 129 (1845). ≡ *Achyronia villosa* (Thunb.) Kuntze, *Rev. Gen. Pl.* 1: 158 (1891). **Type:** South Africa, Western Cape, without precise locality, *Thunberg s.n.* (LD, lecto.! designated by Dahlgren (1988)).

Prostrate, reseeding shrublet up to 0.35 m tall. *Branches* herbaceous, green to yellow green, finely sericeous. *Leaves* trifoliolate, base sessile without a tubercle. *Leaflets* flat, linear-oblanceolate, 3.0–6.0 × 0.6–1.2 mm, acute at apex. *Inflorescences* capitate, terminal on seasonal shoots; 1–4-flowered. *Flowers* small, often partially hidden by leaves, yellow, subsessile. *Pedicels* <0.5 mm. *Bracts* oblanceolate, 2.8–3.2 × 0.5–1.3 mm, convex, sericeous; bracteoles linear, 4.5–5.5 × 0.5 mm, sericeous. *Calyx* campanulate, 3–7.5 mm long, whitish-green, sericeous; teeth triangular, 1.5–2.5 mm long, acute, sericeous. *Standard petals* obovate, 5.5–10 × 3.2–6.5 mm, apex rounded, outer surface sparsely tomentose; claw 0.5–2.0 mm, glabrous. *Wing petals* oblong, 4.8–9 × 1–3 mm, glabrous above; sculpturing minute lamellate folds arranged in 4−5 parallel transverse rows across the basal two-thirds; folds are plate-like, oriented perpendicular to midvein and spaced by inter-rows 2−3 times the ridge height; claw 1.0–3 mm long. *Keel petals* lunate, 5.2–8 × 1.0–3 mm, fused, apex concave, silky-sericeous below, glabrous above; claws 1.5–3 mm. *Androecium* 7–12.5 mm long; filaments fused into staminal tube with dorsal slit; anthers 10, with 6 shorter basifixed and 4 longer dorsifixed. *Pistil* 5–8 mm long; ovary 2.0–4.4 mm, ovary superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; with 2 ovules. *Pod* and seed not seen (Supplementary Figure B8).

Diagnostic characters. *Aspalathus villosa* is most similar to *A. bodkinii*, differing mainly in its slender, prostrate habit, narrower oblong leaflets, and small 2–4-flowered capitate inflorescences. It is further distinguished by its generally smaller floral parts. A detailed comparison is provided under *A. bodkinii* (no. 3).

Distribution and habitat. Occurs in the mountains of the Western Cape, from the Ceres region northward to Clanwilliam, including the Tulbagh and Piketberg areas (Fig. 11). Typically found in sand basins, fynbos plains, and lower mountain slopes in white sands or sandstone gravel derived from Table Mountain Sandstone. The species is associated with restionaceous fynbos vegetation, particularly Cedarberg Sandstone Fynbos (FFs 4) and Winterhoek Sandstone Fynbos (FFs 5), and occurs at elevations below 1,000 m, often in well-drained, exposed habitats within the Fynbos Biome.

Flowering time. October — December.

Etymology. The specific epithet *villosa* is derived from Latin, meaning “hairy,” and refers to the indumentum covering much of the plant. However, the pilosity of the leaves and floral parts is more accurately described as shortly sericeous, rather than truly villous.

Conservation Status. Previously assessed as Least Concern due to its

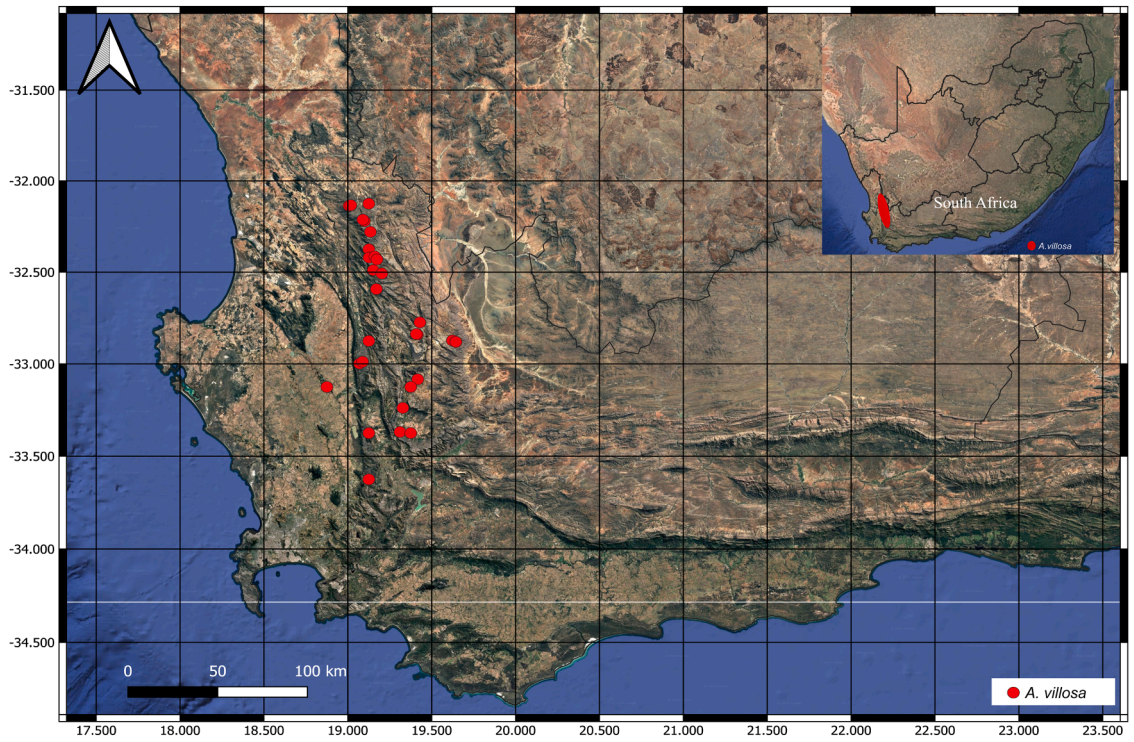

Fig. 11. Known distribution of *Aspalathus villosa*, based on verified herbarium specimen and field records.

wide distribution in montane habitats where no immediate threats were identified (Raimondo et al., 2009). However, a reassessment based on updated distribution data indicates a more restricted range: the Extent of Occurrence (EOO) is estimated at 32 km^2, qualifying it as Near Threatened (NT), while the Area of Occupancy (AOO) is estimated at 128 km^2, which would place it under Endangered (EN) according to IUCN Red List criteria.

Specimens examined.

South Africa. Western Cape. **3219 (Wuppertal):** Between Honingvalei and Kanteberg, (–AA), without date, *Drège s.n.* (S); South of Pakhuis Mountains, (–AA), 28 Oct 1956, *Dahlgren, R. & Peterson, B. 897* (LD, K); The road to Agter Witzenberg, 4.8 km from the top of Gydouw Pass, (–AA), 7 Nov 1956, *Dahlgren, R. & Peterson, B. 1112* (K, LD); Heuningvlei, (–AA), 14 Sept 1976, *Hugo, L. 529* (PRE, NBG); Heuningvlei Forest Station, on road to Groenberg, (–AA), 26 Oct 1973, *Emdon, I.M. 153* (PRE, NBG); flats 2 km south of Heuningvlei, (–AA), 13 Oct 2007, *Helme, N.A. 5024* (NBG); Between Heuningvlei and Boontjieskloof flats at the end of Koupoort jeep track, (–AA), 28 Dec 1983, *Taylor, H.C. 10869* (PRE, NBG); Top of Middelberg Pass, (–AA), 19 Oct 1958, *Acocks, J.P.H. 19839* (K); Along jeep track to Bloukop on Luiperdskloof (–BD), 13 Sept 2002, *Koekemoer, M. 2421* (PRE); Knolfontein, Swartruggens 60 km NE of Ceres, (–DC), 15 Oct 2011, *Jardine, I. 1690* (NBG). **3319 (Worcester):** Kliphuis plains, (–AB), 13 Oct 1987, *Taylor, H.C. 11816* (PRE, NBG); Gydo pass, 2.5 km from the turn-off of Gydo pass towards Witzenberg, on top of the ridge, (–AB), 20 Nov 1984, *Grobbelaar, N. 2873* (PRE); Between Groot River, Elands Kloof, (–AC), 01 Oct 1939, *Leipoldt, C.L. 3116* (K); Welbedacht flats, (–AC), 22 Oct 1989, *Le Maitre 593* (NBG); Skurweberg, (–AD), 08 Nov 2014, *Helme, N.A. 8169* (NBG); Schurfteberg 1.6 km SW of the top of Gydo Pass along the road to Agter Witzenberg, (–AD), 14 Nov 1965, *Dahlgren, R. & Strid, A. 4136* (LD); Breede river valley, 0.8 km NE of the Breede river bridge along National road Pearl-Worcester, (–DC), 10 Aug 1965, *Dahlgren, R. & Strid, A. 2194* (LD); Cold Bokkeveld, (–BB), 04 Oct 1997, *Hanekom, W. J. 2903* (K, PRE).

Exact Locality unknown. South Africa. Western Cape. Cape of Good Hope area, (–AD), without date, *Thunberg, C.P. s.n.* (LD).

6. ***Aspalathus jardinii*** Du Preez & C.H.Stirt., in *S. Afr. J. Botany* 166: 173 (2024). Type: South Africa, Western Cape, Wuppertal (3219): dunes in Riet River, at the base of Katbakkies Pass, Swartruggens Mountains, (-DC), 27 Oct 2019, *Du Preez, B. 780* (BOL! holo.).

Erect to decumbent, resprouting shrublet, up to 0.1 m tall. *Branches* woody, long and trailing, spreading below ground, rooting at intervals, with seasonal shoots emerging perpendicularly above the surface; bark tawny-brown to beige, longitudinally cracked and flaky, glabrescent; young branches grey-green, pubescent. *Leaves* trifoliolate, fascicled, occasionally solitary on young seasonal shoots; borne on woody, persistent tubercles. *Leaflets* flat, narrowly oblong-oblanceolate to ovate, 1.0–4.0 × 0.5–1.0 mm, weak, apex acuminate, surfaces silky-sericeous. *Inflorescences* compact, capitate, borne terminally on seasonal shoots, comprising clusters of 3–4 flowers. *Flowers* bright yellow, vertically oriented, subsessile. *Bracts* oblong-obovate, 3.5–4.0 mm long, sessile, sericeous; bracteoles lanceolate, 3.5–4.0 mm long, sericeous. *Calyx* campanulate and rounded, 3.5–4.0 mm long, pale to olive green; externally silky-sericeous; teeth lanceolate-triangular, 1.0–1.5 mm long, acute, with broader ventral lobes. *Standard petals* ovate, 8.0–8.5 × 4.5–6.0 mm, rounded to emarginate at apex, entirely sericeous on the abaxial surface; claw 2.5–2.8 mm long, narrowly oblong, hairy only along basal margin. *Wing petals* elliptic-lanceolate, 4.2–5.2 × 1.8–2.0 mm, hairy only on lower half, tips slightly recurved; petal sculpturing lamellate with dense folds occupying the upper half; claws 2.8–3.3 mm long. *Keel petals* lunate, 3.5–4.0 × 2.0–2.2 mm, rounded at apex, fused along margins, densely sericeous except on dorsal edges; basal portion pocketed; claw 3.0 mm long. *Androecium* 7.0 mm long, stamens united into a dorsally slit staminal tube, erect with apically free filaments; anthers 10, dimorphic: 6 short and basifixed, 4 long and dorsifixed, versatile. *Pistil* 7.0–8.0 mm long, subsessile; ovary 4.0 mm long, 0.7–0.8 mm wide, lanceolate, sparsely silver pubescent, especially along dorsal suture; style 3.0–4.0 mm long, straight to rostrate-recurved, glabrous; stigma capitate; ovules 2. *Pod* and seed not seen (Supplementary Figure B9).

Diagnostic characters. *Aspalathus jardinii* is morphologically closest to *A. quinquefolia* subsp. *quinquefolia*, with which it shares a prostrate,

resprouting habit, but differs in its compact, terminal inflorescences bearing 3–4 flowers vs. the more numerous (5–13), subglobose to spicate inflorescences of *A. quinquefolia* subsp. *quinquefolia*; smaller leaflets (1.0–4.0 × 0.5–1.0 mm), narrowly oblanceolate to ovate, persistently silky-sericeous vs. larger leaflets that become glabrescent with age; shorter calyx teeth (1.0–1.5 mm) vs. longer (5.5–8 mm); and slightly smaller wing petals (4.2–5.2 × 1.8–2.0 mm) vs. larger (5.0–5.8 × 1.5–2.5 mm). Although it shares a low-growing, resprouting habit with *A. quinquefolia* subsp. *compacta, A. jardinii* differs in having consistently soft-textured, flat leaves with a dense, silky-sericeous indumentum vs. thicker, green, mostly glabrescent foliage of *A. quinquefolia* subsp. *compacta*.

Distribution and habitat. *Aspalathus jardinii* is a narrow-range endemic restricted to the Riet River valley in the Swartruggens Mountains, below Katbakkies Pass in the Western Cape (Fig. 12A). It is confined to wind-swept, inland sand dunes along a short stretch of the valley. The species occurs on deep, loose, fine-grained sands within a localised edaphic zone. Although situated within the mapped boundary of Swartruggens Quartzite Fynbos (FFq2), the habitat diverges markedly from the rocky, quartzitic slopes typically associated with this vegetation type, suggesting a microhabitat-specialist ecology.

Flowering. October–November.

Etymology. The epithet *jardinii* honours Mr Ivor Jardin, a Cape Town-based amateur botanist whose exploratory work in the Swartruggens Mountains has led to the discovery of several new species, including this one (Du Preez and Stirton, 2024).

Conservation status. *Aspalathus jardinii* is a highly localised habitat specialist, confined to a small area within the Riet River valley in the Swartruggens Mountains. Its known extent of occurrence (EOO) is less than 1 km^2, with an area of occupancy (AOO) of only 4 km^2. Although the species currently occurs in relatively undisturbed dune habitat near a river and is not immediately threatened, there are proposed agricultural developments—particularly fruit orchard expansion—that could pose a future risk. Given its extremely limited range and the potential for habitat loss, a Red List status of Vulnerable (VU D2) is warranted under the IUCN criteria (IUCN, 2024), reflecting its susceptibility to plausible future threats (Stirton et al. 2024).

Specimen examined.

South Africa. Western Cape. **3219 (Wupperthal):** Rietvalley 135, west of base of Katbakkies Pass, just north and east of bridge over Riet River, (–DC), 15 Jun 2019, *Helme, N.A. 9871* (NBG).

7. ***Aspalathus quinquefolia*** L. *Amoen. Acad.* 6: 92 (1760); *Sp. Pl.* ed 2: 1002 (1763); Houttuyn., in *T. Amst.* 2 (5): 479 (1775); Lam., *in Encycl.* 1: 290 (1783); Thunb., in *Prodr.* 2: 126 (1800); *Diss. Bot. Aspalathus* 1: 10 (1802); Willd., *Sp. Pl.* 3: 963 (1802); Thunb., in *FL. Cap.* ed 2: 575 (1823); DC., *Prodr.* 2: 142 (1825); Eckl. & Zeyh., *Enum.* 2: 202 (1836); Walp. in *Linnaea* 13: 503 (1839); R. Dahlgren, in *Op. Bot. Soc. Bot. Lund* 4: 235 (I960); *ibid.* 9 (1): 143 (1963); *Fl. S. Afr.* 3,6:31 (1988). Type: *South Africa*, without locality or date, *Aspalathus quinquefolia* L., Herb. Burman (G, lecto. —image! designated by Schrire in Turland & Jarvis 1997).

Aspalathus jacobaea E.Mey., *Comm.* 1: 41 (1836); Walp., *Linnaea* 13: 481 (1839); Benth. in Hook., *Lond. J. Bot.* 7: 603 (1848); Harv., *Fl. Cap.* 2: 107 (1862). ≡ *Paraspalathus jacobaea* (E.Mey.) Presl, *Bot. Bemerk.* 129 (1845). ≡ *Achyronia jacobaea* (E.Mey.) Kuntze, *Rev. Gen.*1: 157 (1891). Type: South Africa, Western Cape, Cape Town (3318): Paarlberg, (–DB),

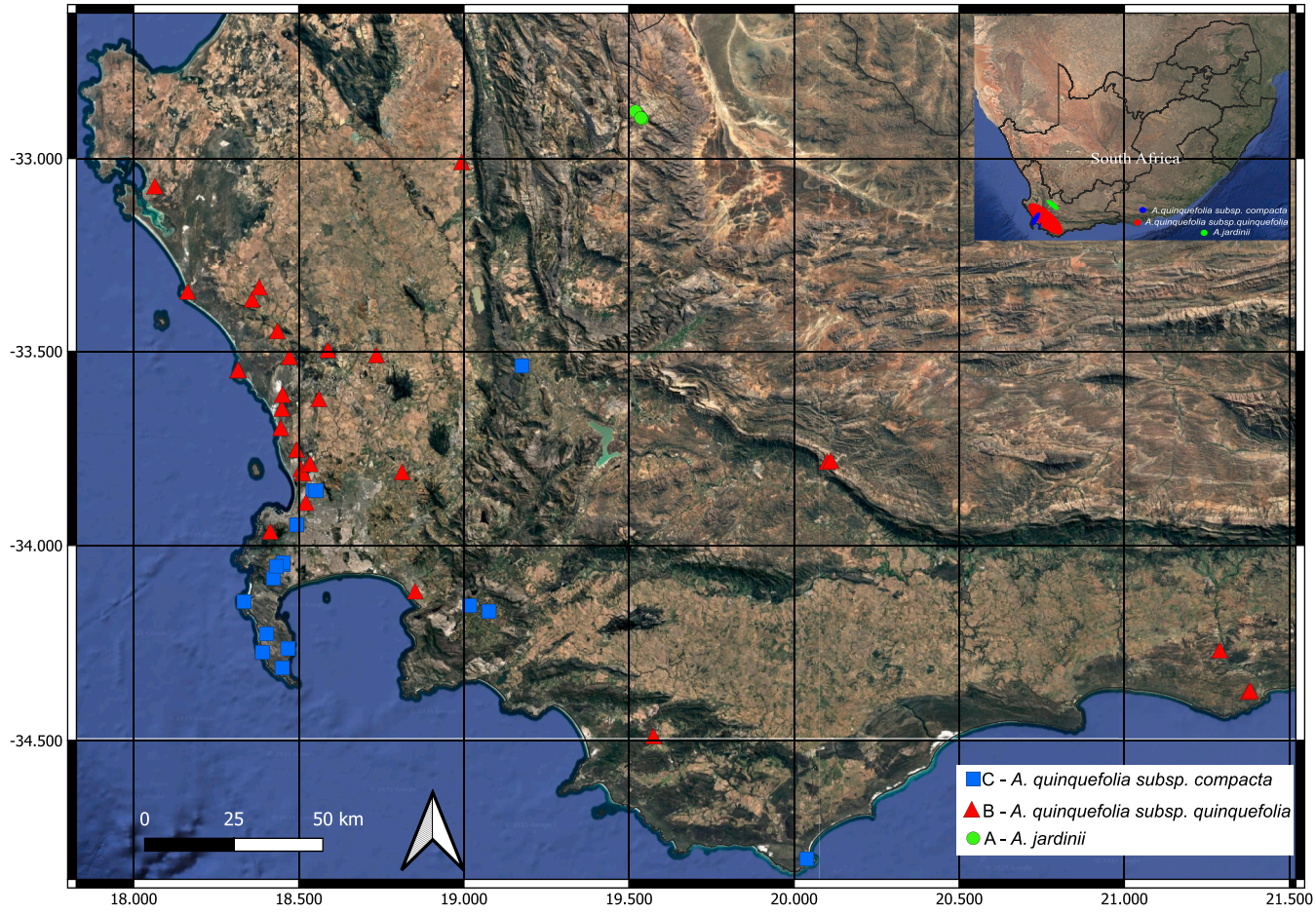

Fig. 12. Known distribution of *Aspalathus jardinii* (A), *A. quinquefolia* subsp. *quinquefolia* (B), & A. quinquefolia subsp. compacta (C), based on verified herbarium specimens and field records. Each point represent a confirmed locality.

August–September [no year], *Drège s.n.* (S-G, lecto. —image! designated by Dahlgren (1960)).

Aspalathus ascendens E.Mey., *Comm.* 1: 41 (1836). ≡ *Paraspalathus ascendens* (E.Mey.) Presl, *Bot. Bemerk.* 129 (1845). Type: South Africa. Western Cape, Cape Town (3318): near Paarl, (–DB), without date, *Drège s.n.* (S-G, lecto. —image!, designated by Dahlgren (1960); K—image!, R—image! isolecto.).

Aspalathus meyeri Harv., *Fl. Cap.* 2: 106 (1862). ≡ *Achyronia meyeri* (Harv.) Kuntze, *Rev. Gen.* 1: 157 (1891). Type: South Africa, Western Cape, Wuppertal (3219), Ezelsbank, Cedarberg Mountains, (–AC), without year, *Drège s.n.* (S, lecto. —image! designated by Dahlgren (1960); G—images!, K—images!, K—images!, isolecto.).

Aspalathus scholliana Presl, *Bot. Bemerk.* 135 (1845). ≡ *Paraspalathus scholliana* (Presl) Presl, *Bot. Bemerk.* 129 (1845). Type: Not seen. Possibly synonymous with *A. quinquefolia* or *A. lotoides* Thunb.

Aspalathus stricta Steud., *Flora* 13: 543 (1830). Type: Not seen.

Note: Although Dahlgren (1988) referred to the specimen *Herb. Linn. No. 295.19* housed at the Swedish Museum of Natural History (S) as the lectotype for *Aspalathus quinquefolia*, this specimen is not regarded as original material, as it bears no annotations by Linnaeus himself. A formal second-step lectotypification was subsequently made by B. Schrire, who designated the specimen labelled *Aspalathus 5-folia* in Herbarium Burman (G00806153) as the lectotype (Turland & Jarvis, 1997).

Decumbent, resprouting shrublets, 0.1–0.25 m tall. *Branches* woody to semi-woody or herbaceous, slender, sparsely to copiously branched; soft and pliant to slightly rigid; young branchlets glabrescent, short-sericeous, or tomentose. *Leaves* trifoliolate, borne on minute, inconspicuous to weakly developed, often pubescent leaf cushions with spine-like tubercles <1 mm long. *Leaflets* always flat, oblong to narrowly lanceolate or elliptic; central leaflet 2.8–6.0 × 0.8–2.0 mm, obtuse to subacute, variably textured, ranging from weak and grey- or silvery-sericeous to moderately thick and glabrescent or puberulous; lateral leaflets smaller, 1.5–4.0 × 0.4–1.5 mm. *Inflorescences* a terminal, capitate spike, subglobose to ovate, comprising 5–20 flowers. *Flowers* pale to bright yellow. *Pedicels* <1.5 mm long. *Bracts* ovate to narrowly ovate or lanceolate, 2.0–5.5 × 1.5–3.0 mm, acute, sericeous; bracteoles oblanceolate to linear, 2.0–5.5 × 0.6–3.1 mm, sericeous or glabrescent. *Calyx* campanulate to tubular, 4.5–8.0 mm long, sericeous; lobes triangular to narrowly triangular, 2.0–3.5 × 0.8–2.0 mm, subacute to obtuse, weakly differentiated, sericeous throughout. *Standard petals* ovate to broadly ovate, 5.0–7.0 × 5.0–7.3 mm, obtuse to retuse; abaxially sericeous at least basally; claw 2.0–4.5 mm long. *Wing petals* narrowly ovate, 5–7 × 1–3 mm, sericeous at lower basal region; petal sculpturing weakly lamellate, characterised by faint, parallel, longitudinal ridges confined to the basal and mid-dorsal surfaces, with adaxial surfaces exhibiting subtle rugulose texture. *Keel petals* narrowly lunate, blades 3.3–4.5 × 1.5–2.5 mm; upper margin slightly S-curved; claw 2–3.5 mm long. *Androecium* 5.5–8.0 mm long; filaments united into a slender staminal tube forming a complete sheath around the gynoecium; anthers dimorphic—6 basifixed, short, inserted basally with divergent pollen sacs; 4 dorsifixed, long, inserted apically or subapically with parallel pollen sacs; staminal tube pale green, delicate, slightly exserted beyond the corolla. *Pistil* 3.5–6.5 mm long; ovary superior, narrowly oblong, uniformly sericeous; style slender, upcurved, pubescent in the basal third, glabrous above; stigma capitate, slightly expanded, receptive surface apical; ovules 2. *Pods* and seeds not seen.

Key to the subspecies of *Aspalathus quinquefolia*

1a. Habit decumbent; leaves not arising from a prominent tuberculate base; inflorescence a short, subglobose spike, with 5–13 flowers	**7a. *A. quinquefolia*** subsp. ***quinquefolia***
1b. Habit ascending; leaves prominent, arising from a prominent tuberculate base; inflorescence an ovate spike, usually with 10–20 flowers	**7b. *A. quinquefolia*** subsp. ***compacta***

7a. *Aspalathus quinquefolia* subsp. ***quinquefolia***

Decumbent, resprouting shrublet up to 0.2 m tall. *Branches* woody, slender. *Leaves* trifoliolate, variable between upper and lower branches. *Leaflets* on upper branches 3.5–4.5 × 0.8–2.0 mm, weak in texture, glabrescent; those on lower branches smaller, 1.5–3.0 × 0.4–1.3 mm, pubescent on both surfaces. *Inflorescences* subglobose, short, terminal on seasonal shoots, comprising 5–13 flowers. *Flowers* yellow. *Pedicels* short, up to 1 mm long. *Bracts* ovate, 2.0–4.5 × 1.5–3.0 mm, pubescent; bracteoles lanceolate, 3.0–5.5 × 0.6–1.5 mm, sericeous. *Calyx* 5.8–8.0 mm long, tubular, densely covered with long, sericeous hairs; lobes 2.0–3.5 × 0.8–2.0 mm, narrowly triangular. *Standard petals* ovate, 5.5–6.5 × 5.5–7.0 mm, obtuse; abaxially sericeous, claw 2.0–4.5 mm long. *Wing petals* 5.0–5.8 × 1.5–2.5 mm, claw 2.5–3.5 mm long; petal sculpturing lamellate, consisting of 8–12 parallel, longitudinal ridges extending from the basal claw region along the basal to mid-dorsal surface of the wing petal, ridges are closely spaced and aligned with the petal's main axis, lacking transverse or pocketed folds. *Keel petals* 3.3–4.0 × 1.5–2.3 mm, lunate, claw 2.0–3.5 mm. *Androecium* 5.5–7.0 mm long. *Pistil* 3.5–4.5 mm long, ovary sericeous; ovules 2. *Pods* and seeds not seen. Refer to Dahlgren (1988) Fig. 2.

Diagnostic characters. *Aspalathus quinquefolia* subsp. *quinquefolia* is morphologically similar to *A. virgata*, with which it was initially included as a subspecies. The two differ in overall habit, inflorescence form, and floral dimensions. *Aspalathus quinquefolia* subsp. *quinquefolia* is low growing, reaching a height of up to 0.2 m vs. the erect, much taller *A. virgata*, which attains heights of up to 1.5 m. The inflorescences are subglobose, comprising 5–13 flowers vs. ovate to elongate inflorescences with 8–35 flowers in *A. virgata*. The calyx teeth are short and broader (2.0–3.5 × 0.8–2.0 mm) vs. slightly longer and narrower (1.0–4.0 × 0.8–1.5 mm) in *A. virgata*. Flowers are slightly larger in subsp. *quinquefolia*, reaching up to 7.0 mm in length vs. shorter flowers up to 6.0 mm long in *A. virgata*.

Aspalathus quinquefolia subsp. *quinquefolia* further differs from *A. quinquefolia* subsp. *compacta* by having fewer flowers per inflorescence (5–13 vs. 10–20 in *A. quinquefolia* subsp. *compacta*), and by its more sprawling habit vs. the compact, ascending form of *A. quinquefolia* subsp. *compacta*.

Distribution and habitat. *Aspalathus quinquefolia* subsp. *quinquefolia* is primarily confined to the Cape Peninsula, ranging from Muizenberg southwards to Cape Point, and occurs within several vegetation types of the Fynbos Biome, including Peninsula Sandstone Fynbos, Atlantis Sand Fynbos [FFd 4], and Cape Flats Sand Fynbos [FFd 5] (Fig. 12B). It typically grows on deep, acidic sandy soils derived from Table Mountain Sandstone, occupying gently sloping plains, rocky ridges, and coastal foothills at elevations below 500 m. Outlier populations are recorded along the Palmiet River in the Caledon Division and near Elim in the Bredasdorp Division, where it is associated with Agulhas Sand Fynbos [FFd 7] and Kogelberg Sandstone Fynbos [FFs 11], respectively. These disjunct occurrences suggest some ecological flexibility, though the taxon remains narrowly endemic to coastal and low montane fynbos habitats.

Flowering. August–November.

Etymology. The name *quinquefolia* means "five-leaved," an allusion to the erroneous early belief that the leaves were typically composed of five leaflets, when in fact they are trifoliolate throughout (Dahlgren, 1960).

Conservation status. Previously assessed as Least Concern (LC) by Raimondo et al. (2009), *A. quinquefolia* subsp. *quinquefolia* now shows evidence of increased conservation concern. It has an Extent of Occurrence (EOO) of 9,834.693 km^2 falling within the Vulnerable (VU) threshold, and an Area of Occupancy (AOO) of 56.000 km^2, which qualifies as Endangered (EN) under IUCN Red List criteria. Although the taxon remains locally common and persists in several protected areas, these spatial metrics indicate potential threats and the need for continued population monitoring.

Specimens examined.

South Africa. Western Cape. **3219 (Wuppertal):** top of Pakhuis pass, (–AA), 30 Dec 1981, *Stirton, C.H. 10182* (K). **3318 (Cape Town):** Near Yzerfontein, (–AC), without date, *Esterhuysen, E.E. 3857* (BOL); 4.83 km N of Darling, (–AD), 05 Sept 1928, *Hutchinson, J. 223* (BOL); Between Mamre and Yzerfontein, (–AD), without date, *Bolus, H. 21300* (BOL); Malmesbury, between Mamre and Darling, (–AD), 05 Aug 1940, *Bolus, H. 26155* (BOL, K); About 4.83 km south of Malmesbury, (–AD), 10 Sept 1933, *Pillans, N.S. 6938* (BOL); Piketberg Div., Porterville, (–BB), without date, *Loubser, J.W. 770* (BOL); 16.09 km S of Mamre, (–CB), 20 Aug 1949, *Wilman, A.M. 658* (BOL); Between Melkbosch and Mamre, (–CB), 08 Sept 1932, *Salter, T.M. 2690* (BOL, K); *ibid.,* 29 July 1931, *Salter, T.M. 1237* (K); Mamre near Groen Kloof, (–CB), without date, *Bolus, H. 4266* (BOL,); Flats between Koeberg Road and Melkbosch Strand, *Pillans, N.S. 6807* (BOL); Table Mountain, northern side, (–CD), without date, *Ecklon, C.F. 1382* (BOL); Riverlands, (–DA), 23 Oct 1980, *Esterhuysen, E.E. 35535* (BOL); Along the N9, approximately 3 miles from the Brooklyn Bridge roundabout and before the Malmesbury turn-off, (–DC), 28 Sept 1966, *Esterhuysen, E.E. 31590a* (BOL); Belville Div., near Kraaifontein, (–DC), 28 Nov 1934, *Salter, T.M. 4996* (K); Near Joostenberg, between Durbanville and Paarl, (–DD), 11 Oct 1949, *Esterhuysen, E.E. 16010* (BOL); Between Mulders Vlei and Klapmuts, 30 Aug 1933, *Salter, T.M. 3579* (K); Devil's Tooth Kloof, Groot Drakensteinberg, east of Pniel, (–DD), 09 Dec 1980, *Hugo, L. 2466* (K). **3319 (Worcester):** Bains Kloof, (–CA), without date, *Rogers, F.A. 29209* (BOL). **3418 (Simonstown):** Stellenbosch Div., Strand to Gordon's Bay, (–BB), 31 Aug 1946, *Parker, R.N. 4106* (BOL, K); *ibid.,* 27 Sept 1951, *Parker, R.N. 4612* (BOL, K); *ibid.*, 03 Sept 1944, *Parker, R.N. 3904* (BOL, K).

7b. *Aspalathus quinquefolia* subsp. ***compacta*** R.Dahlgren, *Op. Bot. Soc. Lund* 4: 247 (1960); *ibid.* 9 (1): 143 (1963); *Fl. S. Afr.* 3,6: 31 (1988). Type: South Africa, Western Cape, Simonstown (3418): west of Smith's Farm, southern part of the Cape Peninsula, (–AD), 08 Dec 1931, *Salter, T. M. 1874* (BOL, holo.! K!, SAM—image!, iso.).

Decumbent, resprouting shrublet 0.25 m tall. *Branches* herbaceous, green, occasionally tinged reddish, glabrescent or sparsely pubescent. *Leaves* trifoliolate, spine-like leaf tubercles <1 mm long. *Leaflets* oblong-lanceolate, 2.8–3.0 × 0.8–1.5 mm, relatively thick, green, sparsely hairy to glabrescent. *Inflorescences* ovate, terminal spike bearing 10–20 flowers. *Flowers* yellow. *Pedicels* short, <1 mm long. *Bracts* narrowly ovate, 4.0–5.0 × 1.5–2.5 mm, sericeous; bracteoles oblanceolate, 2.2–4.8 × 1.0–3.1 mm, sericeous. *Calyx* campanulate, 5.0–7.2 mm long, sparsely sericeous; teeth 2.0–2.5 × 1.0–1.5 mm, narrowly triangular, obtuse to subacute. *Standard petals* broadly ovate, 5.0–7.0 × 5.0–7.3 mm, glabrous on the lower abaxial half; claw 2.8–4.5 mm long. *Wing petals* 5.0–7.0 × 2.0–3.0 mm, with claw 3.0–4.0 mm long; petal sculpturing lamellate, consisting of 12–16 parallel, longitudinal ridges extending from the basal region to the mid-dorsal surface of the wing petal, well-developed lamellae, closely spaced, and aligned with the main axis of the petal, forming a pronounced dorsal texture. *Keel petals* 3.0–4.5 × 1.7–2.5 mm, claw 1.5–3.0 mm. *Androecium* 6.0–8.0 mm long. *Pistil* 4.0–5.0 mm long, ovary sericeous; ovules 2. Pods and seeds not seen. Refer to Dahlgren (1988) Fig. 2.

Diagnostic characters. *Aspalathus quinquefolia* subsp. *compacta* is readily distinguished from *A. quinquefolia* subsp. *quinquefolia* by its compact, erect to ascending habit vs. the sprawling, decumbent form of *A. quinquefolia* subsp. *quinquefolia*; the presence of prominent, blunt, spine-like leaf tubercles (<1 mm) on the upper branches vs. the absence of such tubercles in *A. quinquefolia* subsp. *quinquefolia*; and its densely clustered, green leaflets that are sparsely adpressed-hairy vs. the softer-textured, silvery or glabrescent foliage of *A. quinquefolia* subsp. *quinquefolia*. Inflorescences are short, densely flowered, and ovate, comprising 10–20 flowers vs. the more loosely arranged, subglobose inflorescences bearing 5–13 flowers in *A. quinquefolia* subsp. *quinquefolia*.

Distribution and habitat. *Aspalathus quinquefolia* subsp. *compacta* is narrowly endemic to the southern part of the Cape Peninsula (Western Cape, South Africa), where it is primarily confined to deep, acidic, sandy soils derived from Table Mountain Sandstone (Fig. 12C). It typically inhabits gently sloping coastal plains and low hills, within Peninsula Sandstone Fynbos [FFs 9] vegetation and Hawequas Sandstone Fynbos [FFs 10], below 500 m elevation. While the core distribution is on the Cape Peninsula, a few disjunct populations have been recorded further east along the Palmiet River in the Caledon Division and near Elim in the Bredasdorp Division, suggesting a degree of ecological flexibility within similar lowland fynbos habitats.

Flowering. November–December.

Etymology. The subspecific epithet *compacta* is derived from the Latin *compactus*, meaning "dense," "compressed," or "pressed together." It refers to the characteristic morphology of the inflorescences, which are typically short, dense, and spike-like, forming compact floral clusters (Dahlgren, 1960).

Conservation status. *Aspalathus quinquefolia* subsp. *compacta* is currently assessed as Least Concern (LC) (Raimondo et al., 2009), reflecting its persistence within the Cape Peninsula and a few known outlier populations. However, updated spatial metrics suggest the need for a more precautionary view. The Extent of Occurrence (EOO) is estimated at 9,834 km^2, which qualifies within the Vulnerable (VU) threshold under IUCN Criterion B1, while the Area of Occupancy (AOO) is calculated at 56 km^2, falling within the Endangered (EN) threshold under Criterion B2. Although the subspecies currently shows no evidence of significant population decline or severe habitat fragmentation, its limited and fragmented distribution underscores the importance of ongoing field monitoring and habitat conservation efforts.

Specimens examined.

South Africa. Western Cape. **3318 (Cape Town):** Cape Flats near Raapenberg, (–AA), without date, *Guthrie, F. 201* (BOL); Rapenburg near Cape Town, (–AA), without date, *Guthrie, F. Sub-BH7062* (BOL). **3418 (Simonstown):** Bergvliet, (–AB), 13 Dec 1937, *Salter, T.M. 7133* (BOL); Bergvliet near Diep River, (–AB), without date, *Purcell, W.F. Sub-BH16368* (BOL); In summit monte Steenberg, (–AB), Dec 1903, *Bolus, H. 9342* (K); Teeberg, (–AB), 02 Dec 1932, *Salter, T.M. 2890* (BOL); above Kommetjie, (–AB), 10 Dec 1967, *Esterhuysen, E.E. 31831* (BOL); South of Smits Winkel Bay, (–AD), 10 Dec 1934, *Levyns, M. s.n.* (BOL); Cape Peninsula, W of Smith's Farm, (–AD), 06 Dec 1933, *Galpin, E.E. 12270* (K). **3419 (Caledon):** On the road between Houwhoek and Palmiet River, (–AA), without date, *Bolus, H. 5019* (BOL); Steenberg Mountain, (–AB), without date, *Bolus, H. 9342* (BOL); Grabouw near Palmiet River, (–AB), without date, *Bolus, H. 4126* (BOL). **3420 (Bredasdorp):** hills 10 miles W of Elim, (–AB), 30 Nov 1933, *Salter, T.M. 4018* (K); Swellendam, Bontebok Park, (–AB), 07 Nov 1962, *Acocks, J. 22903* (K); Swellendam, National Bontebok Park, (–AB), Dec 1962, *Liebenberg, L. 6704* (K).

8. ***Aspalathus radiata*** Garab. ex R.Dahlgren, in *Op. Bot. Soc. Bot.* Lund 4: 194 (1960); *ibid.* 9 (1): 142 (1963); *Fl. S. Afr.* 3(6): 49 (1988). Type: South Africa. Western Cape, Paarl Div., Mountains near French Hoek, Oct 1887, *Bolus, H. 2958* (BOL, holo.! GH—image!, K—image!, P—image!, SAM—image!, iso.).

Erect to decumbent, mostly resprouting shrublet, up to 0.5 m tall. *Branches* herbaceous, soft-textured, reddish-brown; young stems covered with white pubescence. *Leaves* trifoliolate. *Leaflets* flat, linear, lanceolate or oblanceolate, 5.6–12 × 0.9–2.5 mm, acute to subobtuse, green, flexible, sparsely clothed in straight, half-spreading hairs; leaflets on short-shoots smaller (1.5–4 × 0.5–1 mm), green, glabrous or subglabrous. *Inflorescences* a terminal, pyramidal to ovate or subglobose spike, 160–300 mm long, typically bearing 15–30 flowers. *Flowers* yellow, aging to orange. *Pedicels* 0.3–0.5 mm long. *Bracts* lanceolate, flat, 7–12 × 0.5–3 mm (widest in lower flowers), acute, weak in texture, with half-spreading hairs; bracteoles linear, 7.5–9.5 × 0.5–1.8 mm, sericeous. *Calyx* campanulate, 8.3–9.5 mm long, long-sericeous to lanate; teeth linear, 3.0–5.5 × 0.8–2.5 mm, tapering, flexible, sericeous. *Standard petal* elliptic, 4.8–6.0 × 3.8–5.5 mm, apically rounded to obtuse, densely sericeous to tomentose abaxially; standard with a pair of separate large scalloped depressions at the base; claw 2–4.5 mm long. *Wing petals*

oblong to narrowly ovate, 4.6–6.0 × 1.6–2.3 mm, sericeous or tomentose on lower and apical parts; petal sculpturing transcostal lamellate, with distinct basal rows of minute folds; claw 2–3 mm long. *Keel petals* lunate, 3.6–4.5 × 2.0–2.8 mm, with nearly straight upper margin, sericeous to tomentose on lower two-thirds; claw 2–3 mm long. *Androecium* 6–7 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 5–6 mm long, ovary superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 4. *Pod* lanceolate, 10–12 × 3.0–3.5 mm, densely hairy. *Seeds* not seen.

Key to the subspecies of *Aspalathus radiata*

1a. Growth habit decumbent; inflorescence subglobose, compact; flowers smaller (standard petal < 6 mm); calyx lobes 3–4 mm long; wings and keel sericeous....	**8a *A. radiata*** subsp. ***radiata***
1b. Growth habit erect; inflorescence elongated, pyramidal spike; flowers larger (standard petal > 5.4 mm); calyx lobes 5–5.5 mm long; wings and keel tomentose	**8b. *A. radiata*** subsp. ***pseudosericea***

8a. *A. radiata* subsp. ***radiata***

Decumbent, resprouting shrublet. *Branches* herbaceous, sparse. *Leaves* trifoliolate; no tubercles. *Leaflets* lanceolate, soft textured, 7.5–11 × 1.4–2.2 mm, apex acute to subobtuse, margins entire; tomentose. *Inflorescences* a subglobose spike, comprising 10–20 flowers. *Flowers* lemon yellow, aging to orange brownish, relatively small. *Pedicels* subsessile. *Calyx* campanulate 6.8–9.5 mm long; teeth lanceolate, 3.0–4.0 × 1.0–2.5 mm, sericeous. *Standard petal* 4.8–5.8 × 3.8–4.5 mm, elliptic to subcircular; claw 3.0–4.5 mm long. *Wing petals* 4.6–5.3 × 1.5–2.3 mm, oblong; petal sculpture lamellate, with 10–14 parallel lamellae from claw to mid-blade, aligned with midrib; transcostal folds absent; claw 2.5–3.7 mm long. *Keel petals* lunate, 3.6–4.0 × 2.0–2.5 mm, sericeous on lower two-thirds; claw 3.0–4.0 mm long. *Androecium* 7.0–8.0 mm long. *Pistil* 1.0–3.0 mm long, sericeous on ovary and lower style. Refer to Dahlgren (1988) Fig. 7.

Diagnostic characters. *Aspalathus radiata* subsp. *radiata* is morphologically similar to *A. radiata* subsp. *pseudosericea*, sharing lemon-yellow flowers ageing to orange-brownish, but differs in its decumbent, resprouting habit and shorter stature vs. the erect, reseeding form of *A. radiata* subsp. *pseudosericea*; shorter, broader leaflets (7.5–11 × 1.4–2.2 mm), soft-textured and densely tomentose vs. longer, narrower leaflets (8.5–12 × 1.2–1.5 mm) with a more ascending posture; subglobose spikes of 10–20 relatively small flowers vs. elongated, pyramidal spikes of 15–30 larger, more robust flowers; shorter calyx lobes (3.0–4.0 mm) vs. longer, narrowly lanceolate lobes (5.0–5.5 mm); and shorter androecium (7.0–8.0 mm) and pistil (1.0–3.0 mm) vs. 8.0–9.3 mm and 2.5–3.5 mm, respectively, in *A. radiata* subsp. *pseudosericea*.

Distribution and Habitat. *Aspalathus radiata* subsp. *radiata* is a narrow endemic of the Western Cape, South Africa, where it is confined to several mountain systems within the Cape Fold Belt (Fig. 13A). Its distribution spans from the Constantiaberg on the Cape Peninsula eastwards through the Worcester, Hex River, Wemmershoek, Slanghoek, and Hottentots Holland Mountains, extending to the Swartberg near Caledon. The subspecies inhabits fynbos on sandstone-derived soils, including South Hex Sandstone Fynbos [FFs 8], Hawequas Sandstone Fynbos [FFs 10], and Kogelberg Sandstone Fynbos [FFs 11], typically occupying steep, rocky slopes and upper catchments at montane to subalpine elevations. It is frequently associated with well-drained, fire-prone habitats and appears to favour sites with seasonal moisture, often within protected or remote upland terrain.

Flowering. October–December.

Etymology. The specific epithet *radiata* is derived from the Latin *radiatus*, meaning "arranged like rays" or "spreading from a central point." It refers to the characteristic architecture of the plant, wherein branches arise in a radiating fashion from a short, central stem. The name was assigned in reference to this distinctive growth habit (Dahlgren, 1960).

Conservation status. *Aspalathus radiata* subsp. *radiata* is currently assessed as Vulnerable based on its Extent of Occurrence (EOO) of 12,904 km^2, which falls within the Vulnerable threshold under IUCN Criterion B1. Its Area of Occupancy (AOO), however, is estimated at only 76 km^2, meeting the threshold for Endangered under Criterion B2.

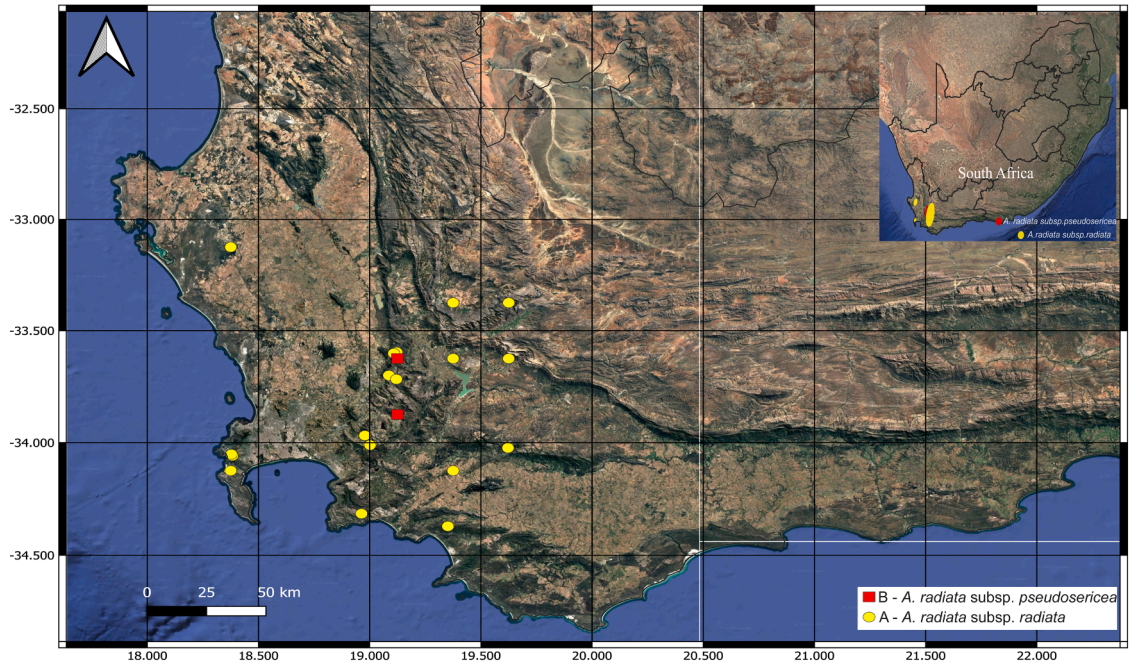

Fig. 13. Known distribution of *Aspalathus radiata* subsp. *radiata* (A), & *A. radiata* subsp. *pseudosericea* (B) based on verified herbarium specimens and field records. Each point represents a confirmed locality.

Despite being relatively widespread in montane fynbos, the species is vulnerable to habitat degradation due to alien plant invasion and changing fire regimes.

Specimens examined.

South Africa. Western Cape. **3318 (Cape Town)**: Constantiaberg, overlooking the Prinskasteel River Valley source, (–DC), 07 Nov 1971, *Esterhuysen, E.E. 32728* (BOL, PRE, NBG); Constantiaberg, (–DC), 20 Nov 1960, *Esterhuysen, E.E. 28652a* (BOL), 16 Jan 1972, *Esterhuysen, E.E. 32794* (NBG). **3319 (Worcester)**: Worcester Div., Milner Peak, (–AD), 18 Dec 1948, *Esterhuysen, E.E. 14898* (BOL); Hex River Mountains, Milner Peak, (–AD), 11 Nov 1960, *Esterhuysen, E.E. 28586* (BOL, PRE); Matroosberg, (–BC), 13 Nov 1960, *Esterhuysen, E.E. 28646* (BOL, PRE); Witteberg, Slanghoek Mountains, (–CA), 13 Nov 1949, *Esterhuysen, E.E. 16801* (BOL); Du Toits Kloof, (–CA), 14 Nov 1954, *Esterhuysen, E.E. 23926* (PRE); Bain's Kloof, Happy Valley, (–CA), 28 Sept 1956, *Dahlgren, R. & Peterson, B. 473* (LD); Brandvlei Dam, South Brickfield, (–CB), 23 Oct 1982, *Bayer, M.B. 3256* (NBG); Wemmershoek Mountains, (–CC), 04 Nov 1951, *Esterhuysen, E.E. 19220* (BOL, PRE); French Hoek Pass, (–CC), 02 Nov 1947, *Leighton, F.M. 2916* (BOL), 02 Nov 1947, *Compton, R.H. 20218* (NBG); Paarl, (–CC), Oct 1887, *Bolus, H. 2958* (BOL); Wilde Paardeberg, (–DC), Oct 1930, *Stokoe, T.P. 2492* (BOL). **3418 (Simonstown)**: Swartberg Mountain near Caledon, (–AB), Nov 1893, *Bolus, H. 9175* (BOL); Swartberg, (–AB), Nov 1893, *Bolus, H. 9175* (NBG); Hottentots Holland north of Somerset Sneeukop, (–BB), 03 Jan 1944, *Esterhuysen, E.E. 9710* (BOL). **3419 (Caledon**): Nature Reserve, E-facing slope below Swartberg, (–AB), 15 Nov 2002, *Cupido, C.N. 276* (NBG).

South Africa. Unknown locality. *Stokoe, T.P. 6116* (BOL).

8b. *Aspalathus radiata* subsp. ***pseudosericea*** R.Dahlgren*, in Op. Bot. Soc. Lund* 4: 198 (1960); *ibid.* 9 (1): 142 (1963); *Fl. S. Afr.* 3(6): 49 (1988). Type: South Africa. Western Cape, Paarl-Caledon Div., French Hoek Pass, Oct 1936, *Thorne, C.H. s.n.* (SAM, holo.!).

Erect, reseeding shrublet, 0.15–0.5 m tall. *Branches* herbaceous, lateral branches few, basal, ascending to decumbent. *Leaves* trifoliolate. *Leaflets* lanceolate, 8.5–12 × 1.2–1.5 mm. *Inflorescences* a pyramidal, elongated spike, comprising 15–30 flowers. *Flowers* relatively large, sericeous. *Pedicel* subsessile. *Calyx* campanulate, 8.0–9.8 mm long; teeth 5.0–5.5 × 0.8–2.0 mm, narrowly lanceolate, sericeous. *Standard petals* 5.4–6.0 × 4.8–5.5 mm, elliptic; claw 2.0–3.5 mm long. *Wing petals* ovate-oblong, 5.0–6.0 × 2.0–3.0 mm, sericeous; petal sculpture lamellate, with 10–14 parallel lamellae from claw to mid-blade, aligned with midrib; transcostal folds absent; claw 2.5–3.0 mm long. *Keel petals* lunate, 4.0–5.0 × 2.5–2.8 mm, sericeous; claw 3.0–4.5 mm long. *Androecium* 8.0–9.3 mm long. *Pistil* 2.5–3.5 mm long, sericeous on ovary. Pods and seeds not seen. Refer to Dahlgren (1988) Fig. 7.

Diagnostic characters. *Aspalathus radiata* subsp. *pseudosericea* is an erect, reseeding shrublet distinguishable within the complex by its taller, ascending habit (up to 0.5 m), elongated pyramidal inflorescences, and relatively large, sericeous floral parts. A detailed comparison is provided under the diagnostic characters of *A. radiata* subsp. *radiata*.

Distribution and Habitat. *Aspalathus radiata* subsp. *pseudosericea* is a narrow-range endemic restricted to the mountainous terrain surrounding the Franschhoek Valley in the Western Cape Province of South Africa (Fig. 13B). Its distribution is centered in the Paarl Division, with additional, scattered records from adjacent parts of the Stellenbosch and Worcester Divisions. Confirmed localities include the Franschhoek Pass, Wemmershoek Mountains (including Tierkloof), Bainskloof Pass, and outlying sites such as Haalsneeukop and Du Toit's Kloof. The subspecies typically occupies rocky slopes within montane fynbos vegetation on sandstone-derived soils, particularly Hawequas Sandstone Fynbos [FFs 10], occurring at mid-elevations between approximately 250 and 600 m.

Flowering. October–November.

Etymology. The subspecific epithet *pseudosericea* (from Latin *pseudo-* meaning "false" and *sericea* referring to silkiness) highlights the taxon's superficial resemblance to *Aspalathus sericea*, particularly in overall floral architecture and indumentum. Despite these similarities, it is morphologically and genetically distinct.

Conservation status. Previously listed as Least Concern (LC), *Aspalathus radiata* subsp. *pseudosericea* now qualifies for a higher threat category based on updated spatial metrics. The subspecies has an estimated Extent of Occurrence (EOO) of 289 km^2 and an Area of Occupancy (AOO) of 12 km^2, both of which fall within the thresholds for Endangered (EN) under IUCN criteria B1 and B2. Although it occurs in montane habitats that are largely intact and not currently under severe pressure, the very limited range and restricted number of locations make it inherently vulnerable to stochastic events and habitat changes. Furthermore, a notable decline in recent collection records suggests potential undersampling or a genuine reduction in population extent. As such, the subspecies is here assessed as Endangered [EN B1ab(iii)+2ab(iii)], warranting urgent monitoring and potential conservation measures.

Specimens examined.

South Africa. Western Cape. **3319 (Worcester):** Head of Du Toit's Kloof, (–CA), without date, *Pillans, N.S. 8443* (BOL); Bainskloof Pass, midway along Bainskloof Pass, (–CA), 22 Oct 1986, *Stirton, C.H. 11224* (BR, NBG, PRE); Wemmershoek, Tierkloof, (–CC), 05 Nov 1950, *Gray, s. n.* (BOL), 20 Oct 1943, *Esterhuysen, E.E. 9113* (BOL), 31 Dec 1944, *Esterhuysen, E.E. 11274* (PRE); Fransch Hoek Pass, (–CC), 15 Nov 1934, *Salter, T.M. 4973* (BOL); East side of Fransch Hoek Pass, (–CC), 19 Nov 1896, *Schlechter, F. 9265* (BOL).

9. ***Aspalathus lotoides*** Thunb., *Prodr. Pl. Cap.* 2: 126 (1800); *Diss. Bot. Aspalathus* 1: 9 (1802); Willd., *Sp. Pl.* 3: 694 (1803); Thunb., *Fl. Cap.* ed. 2: 575 (1823); DC., *Prodr.* 2: 142 (1825); Harv., *Fl. Cap.* 2: 107 (1862); Adamson & Salter, *Fl. Cape Penins.* 476 (1950); R. Dahlgren, *Fl. S. Afr.* 3,6: 26 (1988). ≡ *Paraspalathus lotoides* (Thunb.) C. Presl, *Bot. Bemerk.* 130 (1845). ≡ *Achyronia lotoides* (Thunb.) Kuntze, *Rev. Gen.* Pl. 1: 157 (1891). ≡ *Aspalathus heterophylla* L.f. subsp. *lotoides* (Thunb.) R. Dahlgren, *Op. Bot. Soc. Lund* 4: 266 (1960); *ibid.* 9(1): 145 (1963). ≡ *Aspalathus lotoides* subsp. *lotoides* (Thunb.) R.Dahlgren, *Fl. S. Afr.* 3,6: 26 (1988). Type: South Africa, Western Cape, without precise locality or date, *Thunberg s.n.* (B-W, lecto. —image! here designated).

Aspalathus procumbens E.Mey., *Linnaea* 7: 162 (1832); Eckl. & Zeyh., *Enum. Pl. Afr. Austral.* 2: 202 (1836); Benth. in *Hook., Lond.* J. Bot. 7: 604 (1848). ≡ *Paraspalathus procumbens* (E.Mey.) C. Presl, *Abh. Königl. Böhm. Ges. Wiss.* 3(5): 559 (1845). Type: South Africa, Western Cape, Cape Town (3318): Cape Flats at Tigerberg, (–DC), Dec. 1825, *Ecklon s.n.* (S-G-9314, lecto. —image! designated by Dahlgren (1988)).

Aspalathus anthylloides P.J. Bergius, *Descr. Pl. Cap.* 211 (1767), *nom. illeg.*

Paraspalathus humifusa C. Presl, *Bot. Bemerk.* 129, 133 (1845). Type: South Africa, Western Cape, Cape Town (3318): Devil's Peak ("Duyvelsberg"), (–CD), without date, *Ecklon & Zeyher 1384* (S, lecto. —image!, designated by Dahlgren (1988); US—image!, isolecto.).

Note: *Aspalathus lotoides* was originally described by Thunberg (1800) without an assigned holotype, making all original material syntypes. The specimen B-W 13226 (image!) bears diagnostic characters matching the protologue and is here designated as the lectotype to stabilize the application of the name. Although Dahlgren (1988) cited a specimen in the Thunberg Herbarium (UPS) under the name *A. lotoides*, subsequent study confirms that this UPS specimen corresponds to *Ononis lagopus* Thunb., the basionym of *Aspalathus lagopus*. Thus, the correct lectotype for *A. lotoides* resides at B-W (B-W 13226), not UPS.

Prostrate to weakly ascending, reseeding shrublet, 0.15–0.3 m tall. *Branches* woody, slender, and sprawling; young branches bearing fine, white, half-spreading pubescence. *Leaves* trifoliolate, with noticeable dimorphism between mature and short-shoot leaves. *Leaflets* on mature shoots oblanceolate, 5.5–9.5 × 1.2–2.4 mm, pale green, arising from an inconspicuous base, surfaces densely to sparsely sericeous; leaflets on short-shoots smaller, 3.0–5.5 × 0.8–1.8 mm, sparsely sericeous. *Inflorescences* a terminal ovate spike, comprising 3–25 flowers, loosely arranged along the axis. *Flowers* yellow, often with faint central dark streaks on standard petal. *Pedicels* very short, <1 mm. *Bracts* narrowly

ovate to lanceolate, 3–8 × 0.8–2.5 mm, acute to acuminate, weak in texture, sericeous; bracteoles lanceolate, 3.5–5 × 0.5–1.8 mm, sericeous. *Calyx* urceolate to campanulate, 4.0–7.0 mm long, externally long-sericeous; teeth linear-triangular, 1.5–4.5 × 0.5–1.0 mm, tapering, weak, slightly to not recurved, sericeous. *Standard petal* elliptic, 6.0–8.0 × 4.0–5.3 mm, apex obtuse to acute, abaxially sericeous,; claw 1.7–3.0 mm long. *Wing petals* narrowly oblique-ovate or oblong, 4.5–5.0 × 1.8–2.5 mm, sericeous on the lower two-thirds; petal sculpturing with pronounced transcostal folds extending from base to subapical region, and fine intercostal folds at the base; claw 2.8–3.5 mm long. *Keel petals* lunate, 3.5–4.3 × 2.0–2.5 mm, upper margin slightly S-curved, densely sericeous except along the upper edge; claw 2.5–3.3 mm long. *Androecium* 5.3–7.3 mm long, filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 3.0–4.5 mm long, ovary 1.5–3 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 6. *Pods* and seeds not seen (Supplementary Figure B10).

Diagnostic characters. *Aspalathus lotoides* is readily distinguished by its prostrate to weakly ascending, reseeding habit vs. the resprouting growth form of *A. heterophylla* and *A. lagopus*; compact, ovate inflorescences bearing 3–25 flowers vs. the longer, less dense inflorescences bearing 6–8 flowers in *A. heterophylla* and *A. lagopus*; consistently sericeous, oblanceolate leaflets with marked dimorphism between short- and long-shoot leaves vs. the linear, often subglabrous leaves of *A. heterophylla*; and shorter calyx teeth (4.0–7.0 mm) vs. longer calyx teeth (7.0–9.0 mm) in *A. heterophylla* and *A. lagopus*. Compared with *A. lagopus, A. lotoides* also has smaller floral parts, including a shorter standard petal (6–8 mm vs. 7.5–10 mm), fewer ovules (6 vs. 9), and a less woolly calyx. Ecologically, *A. lotoides* is confined to coastal marine sands vs. granite- and sandstone-derived substrates further inland in *A. lagopus* and *A. heterophylla*.

Distribution and habitat. *Aspalathus lotoides* is endemic to the Western Cape Province of South Africa, with a discontinuous yet well-documented distribution across the coastal lowlands from the Cape Peninsula northwards to the Hopefield Division and extending inland to the Villiersdorp area and the Potberg region in the south (Fig. 14A). The species is most frequently encountered on marine sand deposits along the western coastline but also occurs on sandy hills and low rocky slopes derived from weathered Table Mountain Sandstone or granite substrates, particularly within the Cape Peninsula. Populations are typically associated with lowland Fynbos Biome vegetation, including Atlantis Sand Fynbos [FFd 4] and Saldanha Granite Strandveld [FS 2]. The species occupies flat to gently undulating plateaus and coastal plains at low elevations (c. 18 m a.s.l.), on well-drained loamy, sandy, or shallow rocky soils. Plants are often found around the bases and peripheries of granite outcrops, exposed to full sunlight. Despite the fragmented distribution, populations show no evidence of recent biotic disturbance, and individuals commonly occur in small, localized clusters, suggesting long-term persistence in stable microhabitats.

Flowering. October–December.

Etymology. The specific epithet *lotoides* refers to the plant's superficial resemblance to species in the genus *Lotus*, mostly notably *L. corniculatus* L. The synonym *procumbens* derives from Latin, meaning "lying flat on the ground," while *humifusa* means "spread out on the surface of the soil", both describing the plant's decumbent or sprawling growth form (Dahlgren, 1960).

Conservation status. *Aspalathus lotoides* was historically widespread across the Cape Peninsula and southwestern coastal lowlands, with numerous herbarium records from the early 20th century. However, field data from the past 15 years indicate a significant decline in

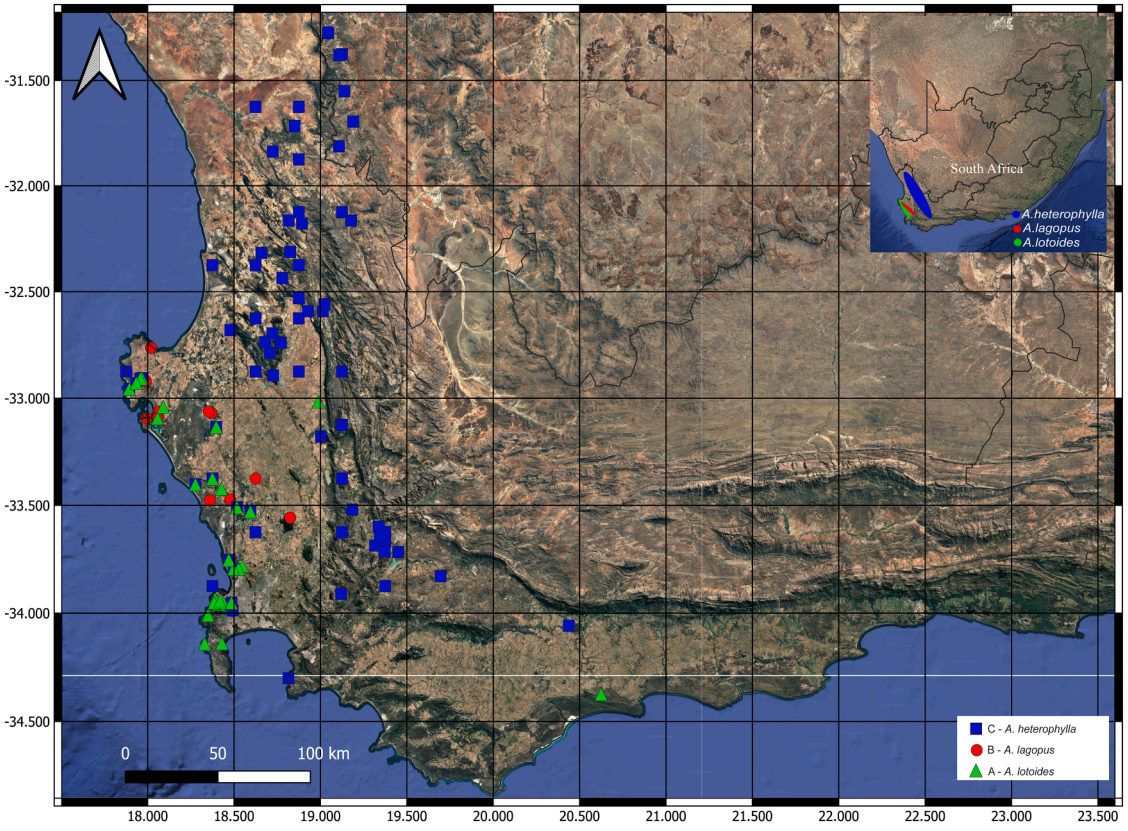

Fig. 14. Known distribution of *Aspalathus lotoides* (A), *A. lagopus* (B), & *A. heterophylla* (C) based on verified herbarium specimens and field records. Each point represents a confirmed locality.

confirmed occurrences, with only four localities recently recorded, despite extensive surveys by the Custodians of Rare and Endangered Wildflowers (CREW). The species was previously assessed as Vulnerable [VU B1ab (i, ii, iii, iv, v) +2ab (i, ii, iii, iv, v)] by Raimondo et al. (2009), primarily due to habitat loss from coastal development and the spread of invasive alien species. Current spatial metrics show an Extent of Occurrence (EOO) of 20,991 km^2 (Near Threatened) and an Area of Occupancy (AOO) of 108 km^2 (Endangered), suggesting that the species remains at risk. While some habitat persists, the overall population trend is inferred to be declining, and ongoing monitoring is recommended to reassess its threat level.

Specimen examined.

South Africa. WESTERN CAPE. **3217 (Vredenburg):** 1 km N of Jacobsbaai, 1.2 km east Hospitaalpunt, (–DD), 07 Nov 2005, *Helme, N.A. 3639* (NBG). **3218 (Clanwilliam):** Langebaan Town, (–CC), 17 Oct 1975, *Boucher, C. 2912* (NBG); ibid., 01 Nov 1948, *Acocks, J.P.H. 15223* (PRE). **3318 (Cape Town):** 6.4 km south of Darling, (–AD), 21 Nov 1956, *Dahlgren. R. Peterson, B. 768* (BOL, PRE); Near Darling, (–AD), Sept 1905, *Bolus, H. 12656* (BOL, NBG); Between Mamre and Ysterfontein, (–AD), Aug 1931, *Bolus, H. 21301* (BOL); Lion's Head (a.s.l.), (–CD), without date, *Guthrie, L. 16872* (BOL), 31 Oct 1897, *Froembling, G.H.W. 71* (NBG); behind Camp's Bay Hotel, (–CD), 17 Oct 1897, *Wolley-Dod, A.H. 3329* (BOL); Camps Bay, (–CD), 15 Oct 1933, *Levyn, M.R. s.n.* (BOL); Table Mountain near Cape Town, (–CD), Oct 1873, *Bolus, H. 2766* (BOL); Cape Peninsula, Table Mountain, between Camps Bay and the Pipe Track, (–CD), 11 Jan 1945, *Esterhuysen, E.E. 12283* (BOL); Rondebosch Common, (–CD), 08 Nov 1956, *Esterhuysen, E.E. 26480* (BOL, PRE); ibid., Nov 1936, *Bolus, H. 26151* (BOL); Mowbray, Raapenberg, (–CD), 1898, *Guthrie, F. A. 203* (BOL); Near Visser Hok, (–DC), 04 Nov 1944, *Compton, R.H. 16372* (BOL, NBG), 04 Nov 1944, *Leighton, F.M. 699* (BOL). **3418 (Simonstown):** Llandudno, (–AB), 17 Oct 1938, *Levyns, M.R.B. 7151* (BOL), 17 Oct 1938, *Salter, T.M. 7757* (BOL); ibid., 19 Dec 1927, *Young, R.G.N. 242* (PRE); Bakoven, (–AB), 11 Nov 1934, *Adolf, H. s.n* (S). **3419 (Caledon):** Viljoen's pass, on the Villiersdorp side, (–AA), 17 Nov 1932, *Bolus, H. 20731* (BOL). **3420 (Bredasdorp):** Potberg, 2.3 km of Elandspad Farm along the road, (–BC), 26 Nov 1978, *Burgers, C.J. 1520* (PRE).

10. ***Aspalathus lagopus*** (Thunb.) Madika **comb. nov.** ≡ *Ononis lagopus* Thunb., *Prodr. Pl. Cap*. 2: 130 (1800). ≡ *Aspalathus heterophylla* L.f. subsp. *lagopus* (Thunb.) R.Dahlgren, *Op. Bot. Soc. Lund* 4: 264 (1960); *ibid.* 9(1): 145 (1963). ≡ *Aspalathus lotoides* subsp. *lagopus* (Thunb.) R. Dahlgren, *Fl. S. Afr.* 3,6: 27 (1988). Type: South Africa, Western Cape, (3318) Cape Peninsula, (–BC), *Thunberg s.n.* (V, lecto.—image!, designated here; UPS-THUNB—image!, isolecto.).

Decumbent, resprouting shrublet, 0.3–0.5 m tall, with stems curving upwards below the inflorescences. *Branches* slender, densely white-tomentose towards the apices. *Leaves* trifoliolate, with noticeable dimorphism between mature and short-shoot leaves. *Leaflets* flat, lanceolate to oblanceolate; mature leaflets longer, 8.5–9.5 × 1.5–2.0 mm, surfaces covered in fine white pilosity; lower leaves and those on short shoots smaller, 3.5–6.5 × 0.9–1.5 mm, similar in shape and indumentum. *Inflorescence* an ovate to elongate terminal spike, 15–30 mm long. *Flowers* bright yellow flowers, often marked with reddish-black nectar guides on the standard petals. *Pedicels* short, less than 1 mm long. *Bracts* lanceolate, 5.0–8.0 × 1.5–4.0 mm, flexible, loosely tomentose; bracteoles 6.0–7.0 × 1.5–3.0 mm, resembling upper leaves in shape and texture. *Calyx* campanulate, 7.5–8.5 mm long, woolly-sericeous; teeth linear, 2.5–4.5 × 1.5–2.0 mm, tapering, sericeous. *Standard petal* broadly ovate, 7.5–10.0 × 5.0–7.0 mm, apex rounded, densely hairy on abaxial surface; claw 3.0–4.0 mm long. *Wing petals* oblong, 6.3–7.0 × 2.8–3.0 mm, densely sericeous on lower and anterior surfaces; petal sculpturing lamellate with minute intercostal folds concentrated near the base; claw 3.5–4.0 mm long. *Keel petals* lunate, 5.5–6.0 × 2.5–3.0 mm, densely sericeous except along margins; claws 3.7–4.5 mm long. *Androecium* 9.0–9.3 mm long, filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 5.0–6.0 mm long, ovary 2–3 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 8–9. *Pods* and seeds not seen (SupplementaryFigure B11).

Diagnostic characters. *Aspalathus lagopus* is morphologically and ecologically distinct from *A. lotoides*, from which it was previously treated as an infraspecific taxon. Multivariate ordination (PCoA based on Gower distance (Gower, 1971; Fig. 2) confirms its status as a morphometrically cohesive and non-overlapping entity, showing clear separation from *A. lotoides* along the primary axis of variation. *Aspalathus lagopus* is readily distinguished by its decumbent, resprouting habit vs. the prostrate to weakly ascending, reseeding habit of *A. lotoides*; densely white-tomentose indumentum on young branches vs. the silky-sericeous indumentum in *A. lotoides*; and generally larger floral structures, including the standard petals (7.5–10.0 mm vs. 6.0–8.0 mm), keel (5.5–6.0 mm vs. 3.5–4.3 mm), androecium (9.0–9.3 mm vs. 5.3–7.0 mm), and pistil (5.0–6.0 mm vs. 3.0–4.5 mm). The ovule number is also greater (8–9 vs. 6). Ecologically, *A. lagopus* is confined to the marine sands of the Hopefield–Saldanha Bay region and exhibits a resprouting response to fire vs. *A. lotoides*, which occupies a broader geographic range and regenerates exclusively by reseeding.

Distribution and habitat. *Aspalathus lagopus* is a lowland endemic restricted to the south-western coastal interior of the Western Cape, South Africa (Fig. 14B). Its distribution spans granite- and shale-derived plains and low hills, stretching from Vredenburg and Jacobsbaai in the north, through Hopefield, Langebaan, and Steenberg's Cove, extending southwards to the Malmesbury region and Paardeberg. The species occurs predominantly within Hopefield Sand Fynbos [FFd 3] and Lambert's Bay Strandveld [FS 1], occupying renosterveld–strandveld ecotones and granite fynbos on low, rolling hills. This range lies mostly inland of the true coastal fringe, with populations occurring in semi-arid, seasonally dry habitats where vegetation is typically fire-modified but not strongly fire-dependent. *Aspalathus lagopus* inhabits more stable, less frequently burned environments, such as granite outcrops, loamy flats, and disturbed road verges, sometimes within grazed or altered veld. Observations of persistent individuals and the absence of mass resprouting or recruitment post-fire suggest a strategy of fire tolerance rather than fire dependence.

Flowering. September–November.

Etymology. The specific epithet *lagopus* is derived from the Greek *lagos* (λαγώς), meaning "hare," and *pous* (πούς), meaning "foot." The name refers to the hairy, compact floral spikes of the species, which bear a resemblance to the soft, tufted appearance of a hare's foot (Dahlgren, 1960).

Conservation status. *Aspalathus lagopus* is currently assessed as Endangered (EN) under IUCN Red List Criteria B1 and B2, based on spatial metrics indicating an Extent of Occurrence (EOO) of 2,608 km^2 and an Area of Occupancy (AOO) of 64 km^2, both within the thresholds for Endangered status. This represents a status change from the previous listing as Vulnerable [VU B1ab (ii, iii)] (Raimondo et al., 2009), which was based on an estimated EOO of 1,638 km^2, and observed ongoing habitat degradation at five to ten remaining locations. The revised assessment reflects updated and more comprehensive spatial data but also confirms that habitat quality and availability continue to decline.

Specimen examined.

South Africa. WESTERN CAPE. **3217 (Vredenburg):** Road heading from Vredenburg to Paternoster, Waterklip Farm, (–DD), 16 Sept 2006, *Von Witt, C. 2320* (NBG); ibid., 05 Oct 2006, *Helme, N.A. 4182* (NBG); Saldanha, Jacobsbaai, (–DD), 02 Oct 1999, *Boucher, C. 6464* (NBG). **3318 (Cape Town):** South of Langebaan, (–AA), Oct 1932, *Pillans, N.S. 6701* (BOL); Malmesbury Dist., 8 km E of Langebaan, (–AA), 10 Oct 1933, *Salter, T.M. 3909* (BOL); Langebaan Country Estate, Plot 14 N

section, (–AA), 12 Oct 2012, *Boucher, C. 7879* (NBG); Low hill just E of Town, (–AA), 17 Oct 1975, *Boucher, C. 2912* (PRE); Southern shore of Riet Bay, (–AA), 30 Sept 1987, *O'Callaghan 1682* (NBG); Steenberg's Cove, (–AA), *Barker, W.F. 8073* (NBG); Hopefield Div., on the Malmesbury road 1.6 km E of Hopefield, (–AB), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 786* (BOL, NBG, PRE); Commonage SE of Town, (–AB), 11 Sept 2001, *Cupido, C.N. 158* (NBG); Dassenberg, NW foothills, (–AB), 20 Sept 1993, *Strid, P.A.K. 38048* (PRE); Bokbaai, (–CB), 22 Nov 1970, *Acocks, J.P.H. 24491* (PRE); Paardeberg between Wellington and Malmesbury, (–DB), 12 Sept 2011, *Nicolson, G. 442* (NBG).

11. ***Aspalathus heterophylla*** L.f., *Suppl.* 321 (1781); Thunb., *Prodr.* 2: 126 (1800); Diss. Bot. *Aspalathus* 1: 10 (1802); Willd., *Sp. Pl.* 3: 963 (1803); Thunb., *Fl. Cap.* ed 2: 575 (1823); DC., *Prodr.* 2: 142 (1825); R. Dahlgren in *Fl. S. Afr.* 3,6: 27 (1988). ≡ *Paraspalathus heterophylla* (L.f.) Presl, *Bot. Bemerk.* 129 (1845). ≡ *Achyronia heterophylla* (L.f.) Kuntze, *Rev. Gen.* 1: 156(1891). ≡ *Aspalathus heterophylla* L.f. subsp. *heterophylla* R.Dahlgren, *Op. Bot. Soc. Lund* 4: 258 (1960); *ibid.* 9(1): 145 (1963). Type: South Africa, Western Cape, without locality, Unknown s.n. (LINN-HL, lecto—image! designated by Dahlgren (1988)).

Aspalathus stachyera Eckl. & Zeyh., *Enum. Pl. Afr. Austral.* 2: 202 (1836); Walp., *Linnaea* 13: 481 (1839); Benth. in Hook., *Lond. J. Bot.* 7: 605 (1848). ≡ *Aspalathus lotoides* var. *stachyera* (Eckl. & Zeyh.) Harv., *Fl. Cap.* 2: 108 (1862). Type: South Africa, Western Cape, Clanwilliam (3218): sand near Piketberg, (–DD), without date, *Ecklon & Zeyher 1386* (S-G, lecto. —image! designated by Dahlgren (1988); S—image!, M—image [2 sheets]!, SAM—image!, iso.).

Aspalathus procumbens var. *squarrosa* E.Mey., *Comment.* 1: 40 (1836). Type: South Africa, Western Cape, Clanwilliam (3218): Piketberg at 'Groenvalei', (–DD), without date, *Drège s.n.* (S-G, lecto. —image! designated by Dahlgren (1988)).

≠ *Aspalathus lotoides* var. *sparsiflora* Harv., *Fl. Cap.* 2: 108 (1862), misapplied.

Note: The name *Aspalathus heterophylla* L.f. was widely misapplied during the 19th century to specimens now correctly assigned to *A. sericea* P.J.Bergius. Notably, Meyer (1832, 1836), Ecklon & Zeyher (1836), Walpers (1839), Bentham (1848), and Harvey (1862) used the name in this erroneous sense. Harvey (1862) explicitly cited "*A. heterophylla* E.Mey. non Thunb.," acknowledging the misapplication and distinguishing it from the legitimate concept of L.f. The true identity of *A. heterophylla* L.f. is confirmed by specimen no. 41 in the Linnaean Herbarium (LINN 41), which conforms to Linnaeus *filius's* original diagnosis and is here treated as the lectotype.

An additional source of nomenclatural complexity arises from Harvey's (1862) publication of *Aspalathus lotoides* var. *sparsiflora*, which he based on a specimen in the Thunberg Herbarium (UPS) labelled "*Aspalathus heterophylla*." This specimen is now recognised as the type of *Aspalathus aemula*. Although Harvey treated it as a variety of *A. procumbens*, allied to var. *squarrosa,* this application reflects a historical misidentification. Consequently, var. *sparsiflora* is best regarded as a misapplied name, not a taxonomically valid synonym of *A. procumbens*.

Procumbent to low-growing resprouting shrublet, 0.1–0.4 m tall. *Branches* woody, slender, and irregularly branched; older stems prostrate to suberect, often decumbent, with branch tips curving upward below the inflorescences; young branches tomentose to tomentose-sericeous. *Leaves* trifoliolate, not tubercle-based, subglabrous or sparsely hairy. *Leaflets* of seasonal shoots linear-oblanceolate, 7.5–11.5 × 0.9–1.7 mm, apex acute to obtuse, flexible, green, surfaces sparsely sericeous; leaflets of short-shoots smaller, 1.8–5.0 × 0.5–2.0 mm, narrowly elliptic to linear, subglabrous or sparsely hairy. *Inflorescences* a terminal capitate to elongate spike, 40–80 mm long, sparse to moderately flowered. *Flowers* uniformly lemon yellow, lacking nectar guides. *Pedicels* absent or very short (<0.5 mm). *Bracts* lanceolate, resembling upper leaves in shape, 3–10 × 0.5–3.0 mm, sparsely pubescent; bracteoles narrowly lanceolate to linear, 5.4–9.0 × 0.7–2.0 mm, inserted close below calyx, margins ciliate. *Calyx* broadly campanulate, 7.0–9.0 mm long; tube densely sericeous to woolly, white; teeth narrowly triangular to setaceous, 2.0–7.0 mm long, moderately tomentose, usually recurved. *Standard petal* broadly ovate, 6.0–8.0 × 4.4–6.5 mm, apex rounded to obtuse, abaxially tomentose; claw 1.0–3.5 mm long. *Wing petals* broadly oblong, 4.5–6.0 × 2.0–2.5 mm, densely sericeous to nearly tomentose except along the upper margin and base; sculpturing lamellate, with intercostal folds near the petal base; claws 1.8–3.5 mm long. *Keel petals* lunate, 3.8–4.8 × 2.0–2.5 mm, margins moderately pubescent to glabrous; claw 1.5–3.5 mm long. *Androecium* 6.0–7.0 mm long; staminal tube complete, filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 3.0–4.5 mm long; ovary 2–3 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 5. *Pods* and seeds not seen. Refer to Dahlgren (1988) Fig. 1.

Diagnostic characters. *Aspalathus heterophylla* is readily distinguished from *A. lotoides* by its resprouting habit vs. the reseeding habit of *A. lotoides*; longer, loosely flowered spikes (40–80 mm vs. compact 20–30 mm); and sparser indumentum on leaflets and floral parts vs. the consistently silky-sericeous indumentum of *A. lotoides*. Leaflets are linear and often subglabrous vs. the narrowly oblanceolate, persistently sericeous leaflets of *A. lotoides*. *Aspalathus heterophylla* further differs from *A. lagopus* in its narrower standard petals (6–8 mm vs. 7.5–10 mm wide), shorter floral parts overall, and fewer ovules (5 vs. 9). The calyx lobes are longer and more setaceous (up to 7 mm vs. 4–6 mm in *A. lagopus*), and the inflorescences are typically laxer and more elongated vs. the shorter, denser spikes of *A. lagopus*.

Distribution and habitat. *Aspalathus heterophylla* is distributed across the inland lowlands of the Western and Northern Cape Provinces of South Africa, from the Du Toit's Kloof area (Worcester Division) northwards through the Worcester, Tulbagh, Piketberg, Clanwilliam, Vanrhynsdorp, and Calvinia Divisions, extending as far as the Nieuwoudtville region (Fig. 14C). The species is typically absent from flats dominated by marine sands where *A. lotoides* predominates and instead occupies well-drained sandy or sandy-clay soils, often with a reddish hue, derived from Bokkeveld or Table Mountain Group sandstone. It occurs within the Fynbos Biome, primarily in Bokkeveld Sandstone Fynbos [FFs 1], Cederberg Sandstone Fynbos [FFs 4], and Breede Sand Fynbos [FFd 8], reflecting a preference for sandstone-derived substrates across the inland fynbos belt. *Aspalathus heterophylla* typically inhabits gently undulating plateaus and level terrain in full sun, often in post-fire environments, and is frequently recorded in areas that burned approximately two years prior to flowering, suggesting a fire-stimulated recruitment pattern. Habitats include deep sandy flats and, occasionally, riverbanks or stream edges where drainage remains good.

Flowering. September–November.

Etymology. The specific epithet *heterophylla* is derived from the Greek *heteros* (ἕτερος), meaning "different", and *phyllon* (φύλλον), meaning "leaf", and translates as "with leaves of differing appearance." This name refers to a subtle but consistent morphological feature observed in many members of *Aspalathus* subgen. *Sericea*, namely the marked distinction between the leaflets borne on the seasonal (long) shoots and those on the short-shoots or lower portions of the stems. Though not unique to this species, such *heterophylly* was evidently diagnostic enough to merit attention from Linnaeus filius when naming the species in 1781 (Dahlgren, 1960).

Conservation status. *Aspalathus heterophylla* was previously assessed as Least Concern (LC) by Raimondo et al. (2009), based on its widespread distribution and apparent population stability. Current spatial analysis, however, suggests that a more cautious interpretation may be warranted. The species exhibits an Extent of Occurrence (EOO) of 44,612 km^2, which approaches the threshold for Near Threatened

(NT) under IUCN Red List Criterion B1. Its Area of Occupancy (AOO) is estimated at 288 km^2, a value that technically meets the threshold for Endangered (EN) under Criterion B2. Despite these quantitative indicators, field data indicate that the species remains locally common across much of its range, particularly in sandy fynbos habitats following fire events. There is no current evidence of significant population decline or habitat fragmentation at a scale that would merit listing in a threatened category. As such, *A. heterophylla* is retained here as Least Concern (LC), but continued monitoring of land-use changes, fire regimes, and AOO trends is recommended to ensure early detection of any future threats.

Specimen examined.

South Africa. NORTHERN CAPE. **3118 (Vanrhynsdorp):** Matsikamma Mountains, (–DB), 31 Aug 1976, *Stirton, C.H. 5957* (K). **3119 (Calvinia):** Nieuwoudtville, (–AC), without date, *Leipoldt, C. Sub-BH26520* (BOL); 6.4 km W of Nieuwoudtville along the road to Vanrhynsdorp, (–AC), 22 Sept 1965, *Dahlgren, R. & Strid, A. 3291* (K). WESTERN CAPE. **3218 (Clanwilliam):** Elandsberg, (–AD), 16 Oct 1935, *Pillans, N.S. 7956* (BOL); Zeekoe Vlei, (–BA), without date, *Levyns, M. 1212* (BOL); Along the road to Citrusdal, 11.3 km S of Clanwilliam, (–BB), 13 Sept 1956, *Dahlgren, R. & Peterson, B. 341* (BOL, K); Olifants River Valley, (–BB), Oct 1919, *Leipoldt, C. 17119* (BOL); Olifants River Valley ca 12.8 km NNW of Citrusdal W of O. River, (–BB), 10 Dec 1965, *Dahlgren, R. & Strid, A. 4456* (LD); Between Grays Pass and Graafwater, (–BC), without date, *Leipoldt, C. 3170* (BOL); Sandberg 227, Donkieskraal Nature Reserve, 10 km SE of Leipoldtville, (–BC), 21 Oct 2008, *Helme, N.A. 5660* (NBG); Breede River near Darling Bridge, (–CA), without date, *Bolus, H. 2765* (BOL); Near Het Kruis, (–DA), 29 Sept 1943, *Leighton, F. 73* (BOL); 25.7 km S of Clanwilliam in Olifants River Valley W side of Oliver, 21 Sept 1965, *Dahlgren, R. & Strid, A. 3268* (K); Mouton's vlei, (–DC), 08 Nov 1934, *Pillans, N.S. 771* (BOL), 07 Nov 1934, *Pillans, N.S. 7552* (BOL); Kapteins Kloof, (–DC), 25 Sept 1941, *Stokoe, T. 8408* (BOL); Piketberg, (–AD), without date, *Guthrie, F. 2588* (BOL); Near Piketberg, (–DD), without date, *Bolus, H. 13541* (BOL). **3219 (Wuppertal):** In mountain between Cederberg and Pakhuis Pass, (–AA), 04 Oct 1897, *Bolus, H. 8977* (BOL); Klipbokkop, (–CB), 18 Sept 2010, *Boatwright, J.S. 444* (NBG). **3318 (Cape Town):** Near Modder rivier, (–AD), 22 Nov 1970, *Acocks, J. 24491* (K); 38.62 km SSE of Darling, (–AD), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 759* (K); Wellington, Elandsberg Privates Nature Reserve, (–DB), 26 Oct 1996, *Parker, 110* (NBG). **3319 (Worcester):** Mountain above Potterville, (–AA), without date, *Louber, J.W. 1040* (BOL); Saron, (–AA), 22 Sept 1936, *Lewis, G. Sub-BH26519* (BOL); Bokkeveld Escarpment Avontuur, (–AB), 23 Oct 2009, *Helme, N.A. 6153* (NBG); Du Toit's Kloof, foot of Molenaarberg, (–CA), 05 Oct 1947, *Esterhuysen, E.E. 14100* (BOL), 04 Oct 1948, *Esterhuysen, E.E. 14606* (BOL); Brandwacht Valley near Worcester, (–CB), 31 Oct 1953, *Esterhuysen, E.E. 22198* (BOL).

Locality unknown: South Africa. *Drege, s.n.* (BOL).

12. ***Aspalathus rotunda*** (R.Dahlgren) Madika, **stat. nov**. ≡ *Aspalathus tridentata* subsp. *rotunda* R.Dahlgren, *Op. Bot. Soc. Bot. Lund* 4: 228 (1960). Type: South Africa. Western Cape, Clanwilliam Division, Grey's Pass, Olifants River Mountains, 29 Oct 1956, *Dahlgren, R. & Peterson, B. 925* (LD, holo. —image!, BOL! LD—image! NBG! P—image! PRE—image! S—image! iso.).

Decumbent to erect, reseeding or resprouting shrublets, 0.1–1.0 m tall. *Branches* woody, green to brown, straight or weakly spreading; young branches sericeous. *Leaves* trifoliolate, sessile to subsessile, spur-like stipules occasionally present at the leaf base. *Leaflets* of upper branches linear to oblanceolate or narrowly lanceolate, 2.6–8 × 0.7–1.5 mm; lower branch leaflets smaller, 1.9–5.5 × 0.6–1.8 mm; indumentum silvery-sericeous to sparsely sericeous or glabrescent; apices acute to obtuse, often mucronate. *Inflorescences* terminal or subterminal, ranging from compact, few-flowered heads (3–7 flowers) to loosely capitate clusters with up to 25 flowers (subsp. *rotunda*). *Flowers* pale yellow to light lemon-yellow. *Pedicel* short or obsolete. *Bracts* lanceolate to narrowly ovate, 3–10 × 1–4 mm, sericeous or sparsely so; bracteoles linear to narrowly elliptic, 1–8 mm long. *Calyx* campanulate to narrowly so, pale and sericeous; teeth triangular, tapering, recurved, 3–5 mm long. *Standard petal* narrowly ovate, acute, 9–13 × 4–6 mm, sericeous on the reverse; claw 2–4 mm long. *Wing petals* 8–13 × 2.5–4 mm, sericeous; petal sculpture weakly to moderately lamellate; claw 3–5.5 mm long. *Keel petals* lunate, 6–9 × 2.5–4 mm, externally hairy; claw 2.5–5 mm long. *Androecium* 8–12 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs. *Pistil* 4–8 mm long, sericeous on ovary and basal style; ovule number variable, typically 5–6.

Key to the subspecies of *Aspalathus rotunda*.

1a. Habit erect; height 1.0 m tall; bearing 8–25 flowers; standard petal broadly ovate; lemon yellow, lacking any nectar guides	**12a. *A. rotunda*** subsp. ***rotunda***
1b. Habit decumbent; height 0.1–0.2 m tall; bearing 3–7 flowers; standard petal obovate, bright yellow, marked with longitudinal dark streaks (nectar guides)	**12b. *A. rotunda*** subsp. ***fragilis***

12a. *A. rotunda* subsp. ***rotunda***

Erect, reseeding shrublet, up to 1.0 m tall. *Branches* woody, laxly branched, subglabrous. *Leaves* trifoliolate, typically clustered on short shoots, without basal spurs. *Leaflets* of long shoots oblanceolate, 3.5–4.5 × 0.8–1.5 mm, sericeous on both surfaces; apices acute to obtuse. *Inflorescences* terminal, umbelliform, compact to loosely capitate, bearing 8–25 flowers. *Flowers* lemon yellow. *Bracts* broadly lanceolate, 10 × 1.5–4 mm, sericeous; bracteoles narrowly linear to elliptic, 7–7.5 × 0.5–1 mm. *Calyx* tube 8.5–11.8 mm long, silky-hairy; lobes triangular, 5 × 1.5–2 mm, slightly recurved. *Standard petal* broadly ovate, 8.5–12 × 6–7 mm, sericeous on the reverse; claw 2.8–6 mm long. *Wing petals* broadly obovate, 8.5–11.5 × 3.5–4.5 mm, rounded apex to slightly emarginate, sericeous; petal sculpture prominent transverse lamellate ridges and a fine intercostal papillate reticulum between 3 and 5 longitudinal veins; claw 3.5–5 mm long. *Keel petals* lunate, 7–8 × ca. 3.6 mm, externally hairy; claw 4–5 mm long. *Androecium* 10–12 mm long, filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. Pistil 7–8 mm long; ovary and style base sericeous; style curved distally; ovules 5. *Pods* and seeds not seen (Supplementary Figure B12).

Diagnostic characters. *Aspalathus rotunda* subsp. *rotunda* differs from *A. rotunda* subsp. *fragilis* by its erect to ascending habit vs. decumbent in subsp. *fragilis*; more robust, upright branches up to 0.4 m long vs. slender, weakly spreading branches 0.1–0.2 m in *A. rotunda* subsp. *fragilis*; and coarser, less densely silky-sericeous indumentum vs. the soft, greyish-green indumentum of *A. rotunda* subsp. *fragilis*. Leaflets are uniformly arranged and larger (6–10 × 1.5–3.0 mm) vs. dimorphic, with shorter clustered (3–6 × 0.5–1.8 mm) and longer not in clusters (5–8 × 1–2.5 mm) leaflets in *A. rotunda* subsp. *fragilis*. Inflorescences are larger and more floriferous, comprising more than 7 flowers vs. 3–7-flowered, smaller, umbelliform inflorescences in *A. rotunda* subsp. *fragilis*. Floral parts are proportionately larger, with the standard petal 10–12 mm vs. 8–10 mm long, and the keel 7–9 mm vs. 4.8–8 mm long.

Distribution and habitat. *Aspalathus rotunda* subsp. *rotunda* is restricted to the Olifants River and Cederberg Mountains in the Clanwilliam Division of the Western Cape, South Africa (Fig. 15A). It occurs at moderate elevations on rocky and gravelly mountain slopes, typically on Table Mountain Sandstone-derived substrates. The subspecies is associated with Olifants Sandstone Fynbos [FFs 3] and Cederberg Sandstone Fynbos [FFs 4], within the Fynbos Biome, occupying well-drained, nutrient-poor soils characteristic of quartzitic sandstone fynbos. Its range is narrow and montane, and populations are adapted to

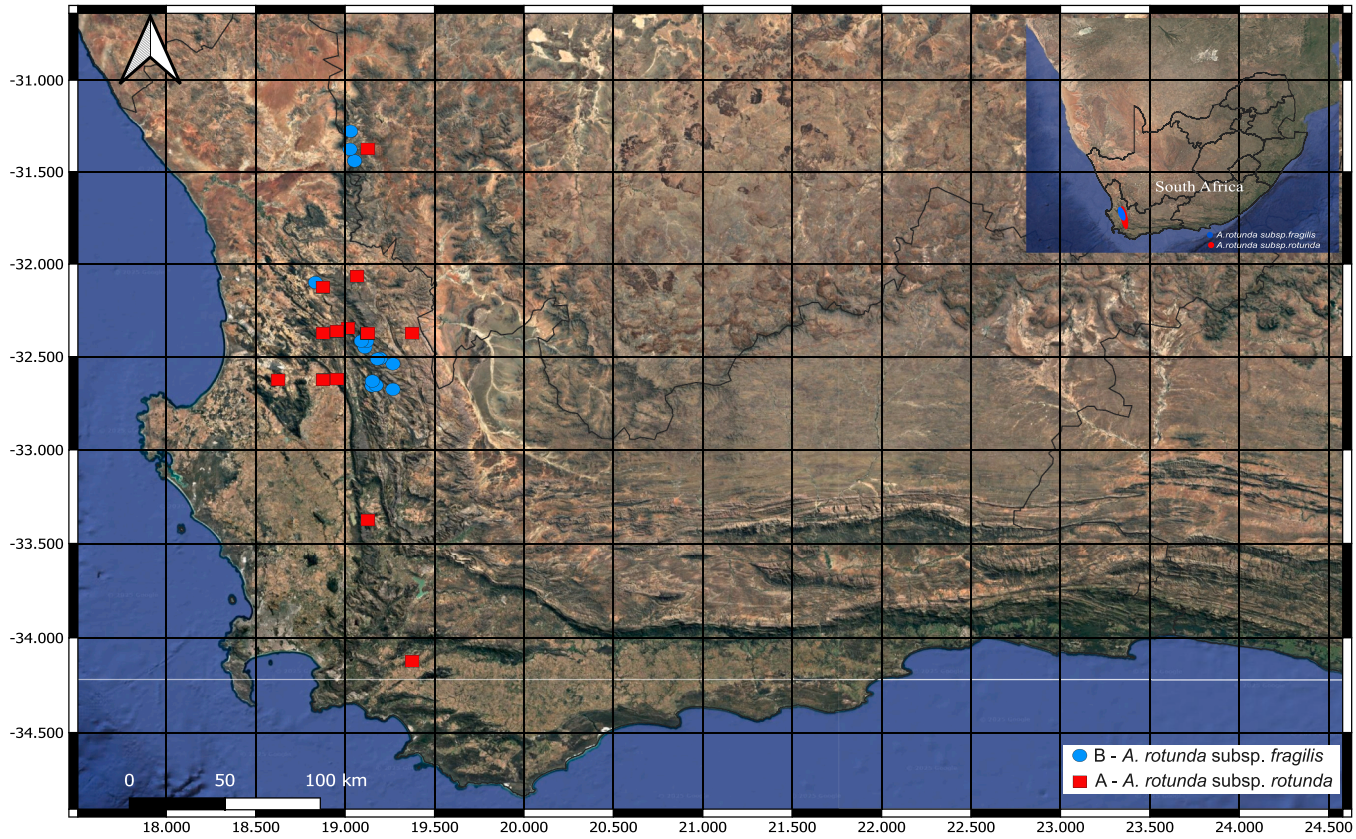

Fig. 15. Known distribution of *Aspalathus rotunda* subsp. *rotunda* (A), & *A. rotunda* subsp. *fragilis* (B) based on verified herbarium specimens and field records. Each point represents a confirmed locality.

exposed, fire-prone slopes where regeneration likely follows post-fire recruitment from seed.

Flowering. October–December.

Etymology. The epithet *rotunda* is derived from Latin *rotundus*, meaning "rounded" or "circular." The name likely refers to the rounded shape of the inflorescence, which is often compact and globose, bearing numerous flowers arranged in a nearly spherical head. This is a distinctive feature when compared to the more loosely arranged or few-flowered inflorescences of the other subspecies.

Conservation status. *Aspalathus rotunda* subsp. *rotunda* has an estimated Extent of Occurrence (EOO) of 11,096 km^2 (within the Vulnerable [VU] threshold) and an Area of Occupancy (AOO) of 52 km^2, which qualifies it for Endangered (EN) under IUCN Criterion B2. Despite these restricted metrics, the subspecies occurs in remote montane habitats on Table Mountain Sandstone slopes in the Cederberg and Olifants River Mountains, where its habitat is largely intact and not currently under threat. The most recent national Red List assessment by Raimondo et al. (2009) listed the subspecies as Least Concern, based on its occurrence in well-protected montane environments and the absence of known threats or decline. However, the updated spatial analysis suggests that a reassessment may be warranted, and continued monitoring is recommended, especially in light of its narrow distribution and limited number of known populations.

Specimen examined.

South Africa. Western Cape. **3218 (Clanwilliam):** Grootkliphuis, 12.8 km North of Clanwilliam, (–BB), without date, *Leipoldt, C.F.L 3393* (BOL); 33 km from Citrusdal to Clanwilliam, (–BB), 10 Oct 1983, *Grobbelaar, N. 2805* (PRE); Klein Kliphuis, (–BB), 16 Dec 1987, *Taylor, H.C. 11935* (NBG); Between Witte Els Kloof and Lambert's Hoek Mountain, (–BD), 11 Oct 1939, *Pillans, N.S. 9053* (BOL); Jantjiesfontein, (–CD), 24 Nov 1995, *Hanekom, W.J. 2858* (K, NBG); Kapteinskloof Pass, (–DA), 03 Nov 1986, *Stirton, C.H. 11403* (NBG, PRE); Keerom, above Olifants River Mountain, (–DB), 04 Dec 1950, *Esterhuysen, E.E. 17925* (BOL); Olifants River Valley 24 km N of Citrusdal, (–DB), 10 Dec 1965, *Dahlgren, R. & Strid, P. 4459* (LD); Greys Pass, (–DB), 22 Nov 1965, *Dahlgren, R. & Strid, P. 4293* (LD, K, NBG, PRE). **3219 (Wuppertal):** Just W of Brandewynsrivier on road to Pakhuis Pass, (–AB), 14 Sept 1993, *Strid, P.A.K. 37919* (NBG); Cederberg, (–AC), 30 Oct 1956, *Dahlgren, R. & Peterson, B. 937* (BOL, LD, K), 08 Aug 1985, *Le Maitre, D.C. 398* (NBG, PRE); Matjiesrivier Nature Reserve, (–AC), 06 Oct 1997, *Lechmere-Oertel, R. 850* (NBG); Nek at W end of Algeria Valley, ca 11.2 km from Kriedouwkrans, at top of Nieuwoudt Pass, (–AC), 21 Sept 1965, *Dahlgren, R. & Strid, P. 3252* (LD, K, NBG); 8 km E of Kriedouwkrans towards Algeria, (–AC), 30 Oct 1956, *Dahlgren, R. & Peterson, B. 932* (LD); near the foot of Uitkyk, (–AC), 20 Nov 1965, *Dahlgren, R. & Strid, P. 4261* (LD, K, NBG); Between Groot Rivier and Eland's Kloof, (–AC), 01 Oct 1939, *Leipoldt, C. L. 3212* (K); Dasklip Pass, Beaverlac Nature Reserve, (–CC), 05 Oct 2008, *Muasya, A.M. & Stirton, C.H. 4060* (BOL).

12b. *Aspalathus rotunda* subsp**. *fragilis*** (R.Dahlgren) Madika **comb. nov.** ≡ *Aspalathus tridentata* subsp. *fragilis* R.Dahlgren, *Op. Bot. Soc. Bot. Lund* 4: 232 (1960). Type: South Africa, Western Cape, Wuppertal (3219): Cederberg Mountains east of Citrusdal, mountain pass, (–AC), 02 Nov 1956, *Dahlgren, R. & Peterson, B. 1008* (LD, holo. —image! BOL! K! S-G—image! iso.).

Decumbent, reseeding shrublet, 0.1–0.2 m tall. *Branches* slender, dark brown, lacking tubercle-based nodes, with white pilosity. *Leaves* trifoliolate, densely silky-sericeous. *Leaflets* dimorphic on older branches, arranged in clusters, 3–6 × 0.5–1.8 mm; on young branches not in clusters, 5–8 × 1–2.5 mm, greyish green. *Inflorescences* terminal, umbelliform, bearing 3–7 flowers. *Flowers* lemon yellow, with distinct dark purple to brownish linear nectar guides or streaks radiating upward from the base toward the mid-point of the standard petal. *Pedicels* short or obsolete. *Bracts* small, 5–8 × 1–2 mm, lanceolate to ovate; bracteoles smaller, filiform to narrowly linear, 4.5–6.5 × 0.2–2 mm. *Calyx*

campanulate, 7.4–9.5 mm long, silky-hairy; teeth narrowly triangular, 3–4 × 0.8–2 mm. *Standard petal* broadly lanceolate with a narrowly triangular apex, 8–10 × 5.7–6.5 mm, hairy on the reverse and along inner margins; claw 2–4.2 mm long; distinct dark purple to brownish linear nectar guides or streaks radiating upward from the base toward the mid-petal. *Wing petals* oblong, 8–9.5 × 2.5–4 mm, mostly sericeous; petal sculpturing lamellate with four rows of short transcostal folds and basal intercostal ridges; claw 3–4 mm long. *Keel petals* broadly lunate, 4.8–8 × 2.8–4.3 mm, densely sericeous externally; claw 3–4 mm long. *Androecium* 9.0–12.5 mm long. *Pistil* 4.0–9.5 mm long; ovary and base of style densely sericeous; style curved apically; ovules 5. *Pods* and seeds not seen (Supplementary Figure B12).

Diagnostic characters. *Aspalathus rotunda* subsp. *fragilis* is morphologically similar to *A. rotunda* subsp. *rotunda*, but differs in its smaller stature, softer indumentum, reduced flower number per inflorescence, and smaller floral dimensions. Detailed comparison under *A. rotunda* subsp. *rotunda*.

Distribution and habitat. *Aspalathus rotunda* subsp. *fragilis* has a wider distribution than previously recognised. In addition to its core range on the lowlands and lower mountain slopes of the south-western Cape (Somerset West to Tulbagh; Fig. 15B), it also occurs further north in the Northern Cape (Nieuwoudtville, Calvinia District) and across the Cederberg region of the Western Cape (Clanwilliam, Wuppertal, Algeria Valley, Driehoek, Elands Kloof, Groot Rivier), with additional collections from the Koue Bokkeveld (Ceres District). The subspecies occupies a mosaic of habitats, ranging from shale-derived lowlands to sandstone montane slopes, and is typically associated with clayey soils derived from Malmesbury Shale or Bokkeveld Series rocks. Northern and montane populations, particularly those in the Cederberg, occur within Cederberg Sandstone Fynbos [FFs 4] of the Fynbos Biome. Plants grow in mixed renosterbos–fynbos scrub or montane fynbos, often in disturbed or fire-prone environments. Its decumbent growth form and reseeding life history suggest adaptation to recurrent disturbance and fire regimes across both lowland and montane landscapes.

Flowering. October–December.

Etymology. The epithet *fragilis* is Latin for "delicate," "weak," or "brittle," and was chosen by Dahlgren in reference to the slender, fragile branches of this subspecies, which are notably weaker and more decumbent than those of the other subspecies in the complex.

Conservation status. *Aspalathus rotunda* subsp. *fragilis* has an estimated extent of occurrence (EOO) of 2,933 km^2 and an area of occupancy (AOO) of 60 km^2. Both metrics fall within the thresholds for listing as Endangered under IUCN Red List Criterion B, which applies to species with an EOO below 5,000 km^2 and/or an AOO below 500 km^2 when additional conditions are met. Although the subspecies occurs within relatively intact montane habitats in the southern Cederberg and northern Koue Bokkeveld Mountains of the Western Cape, South Africa, its restricted range, low number of known localities, and limited occupancy support its recognition as a threatened taxon. The current distribution suggests that the subspecies is vulnerable to localised environmental changes, which include altered fire regimes, climate variability, or potential anthropogenic impacts, even though no immediate threats have been documented. The most recent national Red List assessment, conducted by Raimondo et al. (2009), classified this taxon as Rare. This categorisation was based primarily on its narrow geographic distribution, and the absence of apparent population decline or major habitat loss at the time. However, when reassessed under updated IUCN metrics and applying more recent interpretations of sub-criteria related to fragmentation, occupancy, and number of locations, the available data indicate that *A. rotunda* subsp. *fragilis* would currently qualify for listing as Endangered. In particular, the subspecies is known from fewer than ten locations, and its AOO remains well below the 500 km^2 threshold. Although there is no clear evidence of an ongoing decline in population size or habitat quality, the species' narrow ecological niche and range-limited distribution underscore the need for continued monitoring.

Specimen examined.

South Africa. NORTHERN CAPE: **3119 (Calvinia):** Nieuwoudtville, Avontuur 641, west of Grasberg River, (–AC), 15 Jan 2008, *Helme, N.A. 5852* (NBG); ibid., 02 Oct 2000, *Pretorius, W.A.J. 550* (PRE); Top of Vanrhyns Pass, (–AC), 06 Nov 1962, *Barker, W. 9794* (NBG). WESTERN CAPE. **3218 (Clanwilliam):** North of Clanwilliam turn off, Olifants River Valley on National Road, (–DB), 20 Oct 1965, *Barker, W. 10338* (NBG). **3219 (Wuppertal):** Sneeuwberg area, (–AC), 11 Oct 1946, *Esterhuysen, E.E. 13119* (BOL); Cederberg Mountains, (–AC), 09 Dec 1965, *Esterhuysen, E.E. 31434* (BOL), *ibid.,* 29 Dec 1962, *Esterhuysen, E.E. s.n.* (BOL), *ibid.,* 09 Dec 1965, *Dahlgren, R. & Strid, A. 4437* (LD), *ibid.*, 20 Nov 1965, *Dahlgren, R. & Strid, A. 4265* (K, LD, NBG), *ibid.,* 07 Oct 2000, Pond, U. 269 (NBG), *ibid.*, 22 Nov 1996, *Van Rooyen, M.W. 297* (NBG); Nek at W, end of Algeria Valley, (–AC), 21 Sept 1965, *Dahlgren, R. & Strid, A. 3252* (LD); Driehoek Valley, (–AC), 27 Dec 1953, *Esterhuysen, E. E. 22484* (BOL); Krom River, (–CB), without date, *Shaw, J. Sub-BH5630* (BOL); Elands Kloof, (–CA), 03 Oct 1940, *Esterhuysen, E.E. 3411* (BOL); Between Groot Rivier and Elands Kloof, (–CA), 01 Oct 1939, *Leipoldt, C. 3213* (K). **3319 (Worcester):** Koue Bokkeveld, Ceres D. Farm Berg-en-dal, along S bank of Middeldeurrivier, (–AB), 15 Nov 2000, *Boucher, C. 6595* (NBG).

13. ***Aspalathus singuliflora*** R.Dahlgren, *Op. Bot. Soc. Bot. Lund* 9 (1): 290, 144 (1963); *Fl. S. Afr.* 3,6: 57 (1988). Type: South Africa. Western Cape, Worcester (3319): Smousbos, (–CC), 30 Oct 1950, *Compton, R.H. 22259* (LD, holo-image!, NBG-image [2 sheets]! iso.).

Suberect, reseeding shrublet up to 0.20 m tall. *Branches* thorn-like, straight, rigid, spreading, with long internodes (6–10 mm) below flowers; young branches finely sericeous. *Leaves* trifoliolate, without tubercle. *Leaflets* flat, obovate to oblanceolate; central leaflets 1.8 × 0.7 mm, larger than the laterals; lateral leaflets 0.8 × 1.2 mm, often reduced; obtuse, soft-textured, densely silvery-sericeous; leaf base sessile. *Inflorescences* unifloral, terminal on seasonal shoots. *Flowers* solitary, pale yellow, without nectar guides. *Pedicels* subsessile. *Bracts* lanceolate-ovate, 1.5–2.3 × 0.5–0.9 mm, silvery-sericeous; bracteoles linear-lanceolate, 2.0–2.3 × 0.5 mm, sericeous. *Standard petal* broadly ovate, 6.5 × 5.8 mm, apex acute, outer surface sericeous; claw 2 mm long, glabrous. *Wing petals* oblong, arched, 5.8 × 2.2 mm, sericeous; petal sculpturing with few rows of lamellate intercoastal folds at the base; claw ~1.5 mm long. *Keel petals* lunate, upcurved, 5.5 × 2.8 mm, outer surface sericeous; claws 1 mm long. *Androecium*5 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs. *Pistil* ~4 mm long; ovary ~2 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; with 2 ovules. *Pods* and seeds not seen. Refer to Dahlgren (1988) Fig. 10.

Diagnostic characters. *Aspalathus singuliflora* is a diminutive, suberect, reseeding shrublet readily distinguished from *A. villosa* by its solitary, terminal, sessile flowers vs. the 1–4-flowered capitate heads of *A. villosa*, and rigid, thorn-like branching vs. the decumbent, less spiny habit of *A. villosa*. The species further differs from *A. intervallaris* by its compact, suberect habit vs. the decumbent to spreading form of *A. intervallaris*; prominently displayed terminal unifloral inflorescences vs. flowers partially concealed within dense leafy tufts; and rigid, spiny branches vs. the non-spiny branches of *A. intervallaris*. Other distinguishing features include elongate internodes on young growth (6–10 mm) and a consistently solitary floral arrangement, in contrast to the multi-flowered in its close relatives.

Distribution and habitat. *Aspalathus singuliflora* is known only from the type collection, collected from the Breede River Valley of the Western Cape Province, South Africa (Fig. 16A). The species appears to be highly localised, with no other confirmed records to date. It was found on a sandy substrate, indicating a preference for well-drained, nutrient-poor soils typical of the Fynbos Biome, specifically within

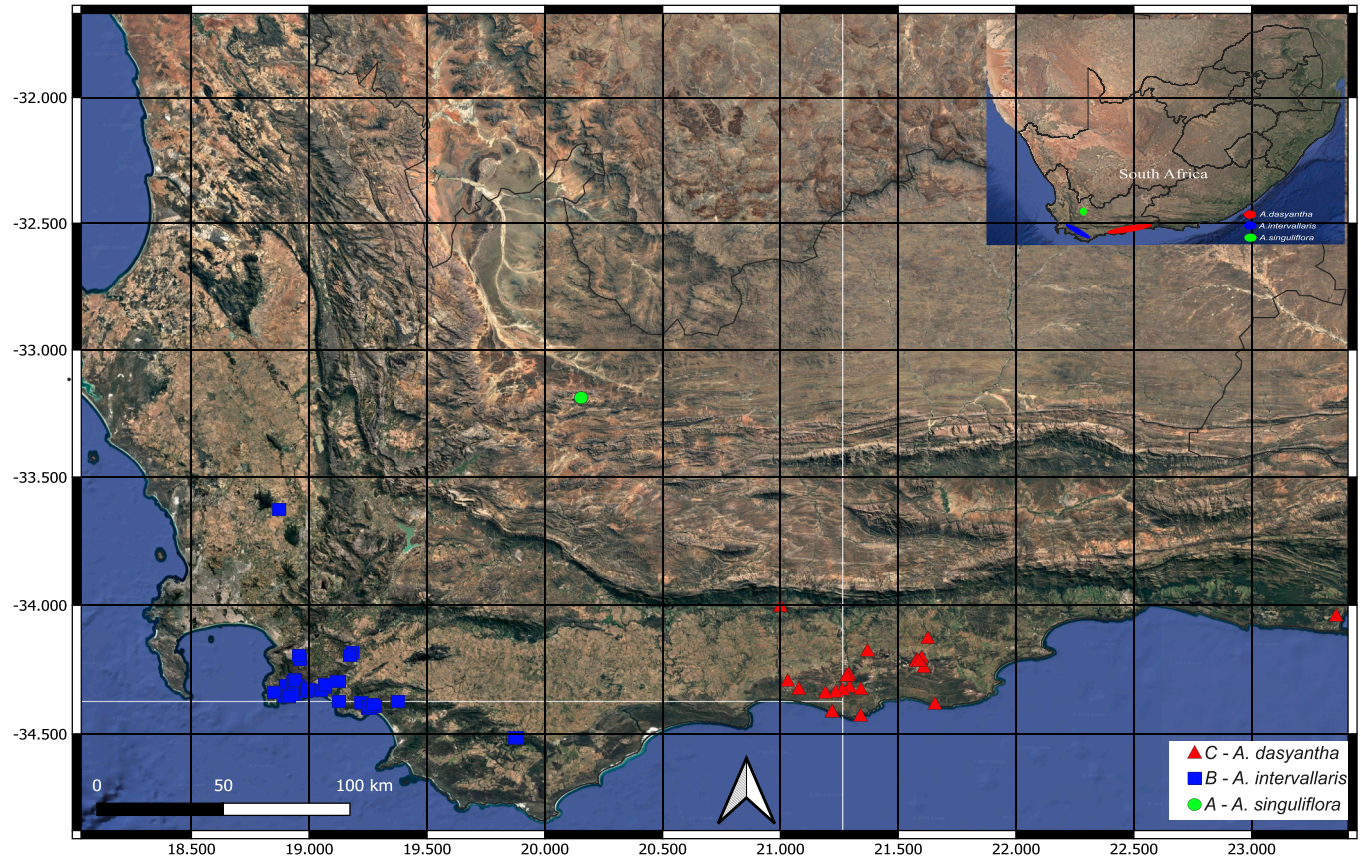

Fig. 16. Known distribution of *Aspalathus singuliflora* (A), *A. intervallaris* (B), & *A. dasyantha* (C) based on verified herbarium specimens and field records. Each point represents a confirmed locality.

Breede Alluvium Fynbos [FFa 2].

Flowering. October

Etymology. The specific epithet *singuliflora* is derived from Latin, with *singuli* meaning "single" or "solitary," and *flora* meaning "flower." This name refers to the characteristic solitary (unifloral) arrangement of flowers borne at the ends of seasonal shoots, a distinguishing feature of the species.

Conservation status. *Aspalathus singuliflora* was long believed to be extinct, as its original habitat—consisting of alluvial soils around Smousbos Hill where it was last collected in 1920—had been entirely transformed for agricultural use. However, in 2010, a small remnant population was reportedly rediscovered on a fragment of Breede Alluvial Renosterveld located on a farm in the Brandvlei area near Worcester. These 2010 observations were not vouchered, but the sighting was noted by von Staden et al. (2011) in the National Assessment: Red List of South African Plants. This habitat fragment is severely degraded, subject to infrequent and irregular fire regimes, and remains vulnerable to further loss through expansion of crop cultivation. Due to its minimal distribution, ongoing habitat degradation, and historical rarity, the species is assessed as Critically Endangered (Possibly Extinct) according to the criteria outlined by Raimondo et al. (2009). Red List category: Critically Endangered (CR). Criteria: CR B1ab(iii)+2ab(iii).

14. ***Aspalathus intervallaris*** H.Bol. in *Schltr., Bot. Jb*. 24: 456 (1897); R.Dahlgren., in *Op. Bot. Soc. Bot. Lund* 4: 292 (1960), *ibid*. 9(1): 140 (1963), *Bot. Notiser* 121: 515 (1968), *Fl. S. Afr.* 3,6: 56 (1988). Type: South Africa, Western Cape, Caledon (3419): Houw Hoek, (–AA), 04 Feb 1896, *Schlechter 7355* (BOL, holo.!; GRA—image!, HBG—image!, K—image!, MO—image!, S—image!, SAM—image!, iso.).

Decumbent, spreading, reseeding shrublet up to 0.3–1.0 m tall. Branches woody, sparse; young stems reddish to grey-green, tomentose-sericeous, with a sympodial branching pattern. *Leaves* trifoliolate, silky-sericeous; not tubercle-based. *Leaflets*, flat, ovate-lanceolate, 1.0– 3.5 × 0.5–1.5 mm, acute at apex. *Inflorescences* unifloral or bifloral, just below branch tips, nestled within dense leaf tufts. *Flowers* small, pale yellow, becoming purple with age; subsessile. *Pedicels* extremely short<0.5 mm long. *Bracts* oblanceolate, 2.0–3.0 × 2.0–3.0 mm, ovate-circular, silky-sericeous; bracteoles linear, 3.0–4.0 × 1.2–2.0 mm, ovate, acute, sericeous. *Calyx* infundibular-campanulate, 4–6.5 mm long, whitish-green, short-sericeous; teeth ovate or circular, 1.5–2.5 mm long, obtuse, silky-sericeous. *Standard petal* obovate, 6.5 × 4.3–5.0 mm, slightly reflexed at apex, rounded upper margins, abaxially sericeous; claw 2.0–3.0 mm long, glabrous. *Wing petals* oblong, 5.5–7.0 × 2.0–2.5 mm, broad apical half; petal sculpturing lunate, with a central longitudinal fold and 1-2 rows of minute, curved folds concentrated basally; claw 1.0–3.2 mm long. *Keel petals* lunate, 3.3–5.0 × 2.0–3.5 mm, fused, apex concave, enclosing the reproductive organs; sericeous; claws 1.0–3.5 mm. *Androecium* 6–7 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* ~6 mm long; ovary 2.0–3.0 mm, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; with 2 ovules. *Pod* 7.0–8.0 mm long, triangular-ovate, densely sericeous. *Seeds* not seen. Refer to Dahlgren (1988) Fig. 9.

Diagnostic characters. *Aspalathus intervallaris* is closely related to *A. oblongifolia,* but differs in its decumbent habit with long, spreading branches up to 1 m vs. the erect habit of *A. oblongifolia*, which reaches up to 1 m in height. Leaflets are shorter and obovate to broadly lanceolate (1.0–3.5 × 0.5–1.5 mm) vs. longer, oblong leaflets in *A. oblongifolia* (3.0–6.0 × 0.7–2.0 mm). *Aspalathus intervallaris* also lacks leaf tubercles

vs. their presence in *A. oblongifolia*.

Distribution and habitat. *Aspalathus intervallaris* is restricted to the western part of the Caledon Division in the Western Cape, occurring along the coastal mountain belt between Hangklip and Houwhoek, and extending eastward to the Hermanus region (Fig. 16B). The species is typically found on marine-derived white sands, stony flats, and lower mountain slopes, often near the sea. It grows in low fynbos vegetation on sandy or stony substrates from near sea level up to approximately 750 m elevation. Populations at sites such as Betty's Bay are associated with pure white sands near the coast. The species occurs within Kogelberg Sandstone Fynbos [FFs 11] and Overberg Sandstone Fynbos [FFs 12], reflecting its preference for sandstone-derived substrates in coastal and near-coastal fynbos habitats.

Flowering time. November–April.

Etymology. The specific epithet *intervallaris* is derived from the Latin *intervallum*, meaning "interval" or "space between." The name likely refers to the noticeable spacing between successive leaves or flowers, a feature that distinguishes the species from other members of the genus.

Conservation Status. *Aspalathus intervallaris* was previously assessed as Near Threatened (NT) by Raimondo et al. (2009), based on an estimated Extent of Occurrence (EOO) of 160 km^2 and an Area of Occupancy (AOO) under 160 km^2, with fewer than 15 known locations. At that time, around half of the population occurred within protected areas at elevations above 200 m, while coastal populations were noted to be in decline due to urban expansion and invasive alien plant encroachment. It was estimated that over 30 % of habitat had been lost, with 25 % of this loss occurring within the past 20 years, corresponding to two generations (assuming a generation length of 10 years). Recent reassessment based on updated distribution data indicates a current EOO of 3,818 km^2 and an AOO of 120 km^2, both of which fall within the thresholds for Endangered (EN) under IUCN criteria B1ab(ii,iii,iv,v)+ 2ab(ii,iii,iv,v). Ongoing threats, particularly along the coastal lowlands, include habitat degradation from coastal development, loss of fynbos vegetation, and invasion by alien plant species.

Specimens examined.

3318 (Cape Town): Paarl, 6.4 km WNW of Windmill, (–DB), 24 Nov 1970, *Acocks, J.P.H. 24517* (K). **3418 (Simonstown):** Betty's Bay, (–BD), 24 Nov 1965, *Dahlgren, R. & Strid, A. 4318* (K, LD); Kogelberg Forest Reserve, (–BB), 29 May 1969, *Boucher, C. 369* (K).

15. ***Aspalathus dasyantha*** Eckl. & Zeyh., *Enum.* 2: 201 (1836); Walp. in *Linnaea* 13: 503 (1839); Benth. in Hooker, *Lond. J. Bot.* 7: 608 (1848); Harv., *Fl. Cap*. 2: 110 (1862); R.Dahlgren in *Op. Bot. Soc. Bot. Lund* 4: 279 (1960); *ibid.* 9 (1): 146 (1963); *Fl. S. Afr.* 3,6: 59 (1988). *Achyronia dasyantha* (Eckl. & Zeyh.) Kuntze, Rev. Gen. Pl. 1: 157 (1891). Type: South Africa, Western Cape, Knysna (3423), near Plettenberg's Bay, (–AB), Oct, *Ecklon, C.F. & Zeyher, C.L.P. 1377* (S-G, lecto—image! designated by Dahlgren (1960); S—image!, SAM—image!, US—image!, isolecto.)

Erect, reseeding shrub up to 1.5 m tall. *Branches* stiff, often knotty and sometimes nearly thorn-like; young branch tips tomentose, becoming glabrescent and yellowish with age. *Leaves* trifoliolate, leaf base on long-shoots spur- or spine-like, 1–3 mm long, yellowish and glabrous, short-shoots typically developing in axils of these leaves. *Leaflets* oblanceolate, oblong, or obovate; central leaflet 5 × 1.5–2.0 mm, larger than the laterals; lateral leaflets 3.0–4.0 × 1.0–1.3 mm, often reduced; obtuse to sometimes acute, green, weak in texture, sparsely hairy or glabrous. *Flowers* solitary or paired flowers arising from the centre of leaf clusters, terminal on branches; light yellow, often turning purplish at senescence; relatively large. *Pedicels* <0.5 mm long. *Bracts* narrowly elliptic to oblanceolate, 2–4 × 0.5–1 mm, tomentose; bracteoles linear to oblanceolate, 2.5–4.8 × 1.5–2 mm, tomentose. *Calyx* urceolate, 8–8.5 mm long, pale yellowish, villous-tomentose; teeth deltoid to narrowly triangular, 1.5–3.5 mm long, acute, slightly green or tinged with reddish brown pigment. *Standard petal* circular, 6.5–9 × 8.5–9 mm, with cordate base; abaxially densely white-woolly; claw 5 mm long. *Wing petals* obliquely ovate, 7.5–8.5 × 4–4.5 mm; densely white-tomentose except for glabrous upper margin and base; petal sculpturing lunate and intercostal, matching keel petal pockets; claws 4.6–5 mm long. *Keel petals* lunate, 5.5–6.5 × 4–4.5 mm, densely tomentose except along margins; pocketed, claws 5–6 mm long, adnate to staminal tube at base. *Androecium* 9–9.5 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* ~4 mm long, ovary 2–4.5 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 4 or 5. *Pods* and seed not seen. Refer to Dahlgren (1988) Fig. 10.

Diagnostic characters: *Aspalathus dasyantha* is closely allied to *A. ternata*, with which it shares a similar floral arrangement. The key distinguishing features lie in its tomentose young leaves, woollier calyx, and rigid, knotty branching structure, contrasting with the uniformly silvery-sericeous foliage and more slender architecture of *A. ternata*. A detailed comparison is provided under the diagnostic characters of *A. ternata*.

Distribution and habitat. *Aspalathus dasyantha* is endemic to the southern coastal lowlands of the Western Cape, South Africa, primarily recorded from the Riversdale Division, with collections extending eastward to Albertinia and Stilbaai and westward to the vicinity of Somerset West (Vergelegen) (Fig. 16C). Outlying records suggest a broader historical distribution encompassing the coastal flats of the Swellendam and Knysna divisions, including Plettenberg Bay. The species is typically associated with coastal fynbos on marine sand flats, favouring low-nutrient, well-drained sandy soils. It occurs in open, low shrubland and sandy coastal flats, sometimes on low koppies or gentle rises near the shoreline, reflecting a preference for seasonally dry, sandy substrates within the southern Cape coastal plain. Populations occur within Albertinia Sand Fynbos [FFd 9] of the Fynbos Biome.

Flowering. October–December.

Etymology. The specific epithet *dasyantha* is derived from the Greek words *dasys*, meaning "hairy" or "woolly," and *anthos*, meaning "flower." It refers to the characteristically robust, densely tomentose floral parts of the species, particularly the standard, wing, and keel petals, which are conspicuously covered in white-woolly or tomentose indumentum.

Conservation Status. *Aspalathus dasyantha* is currently assessed as Endangered (EN) under criterion B1ab (ii, iii, iv, v), following the assessment by Schutte-Vlok et al. (2016). The species has an extent of occurrence (EOO) previously calculated at 451 km^2, with only five known locations, all experiencing ongoing decline due to multiple threats. These include invasion by alien Acacia species, habitat degradation from thatch harvesting, and altered fire regimes, particularly frequent fire, which disrupts regeneration cycles. A more recent analysis estimates the EOO at 9,856 km^2 (suggesting Vulnerable [VU] under B1), and the area of occupancy (AOO) at 88 km^2, which supports an Endangered (EN) status under criterion B2.

Specimen examined.

South Africa. Western Cape. **3421 (Riversdale):** Reisiesbaan siding, main road at the siding, (–AB), 31 Oct 1979, *Bohnen, P. 7011* (NBG); 18 miles W of Still Bay, N of Jongensfontein, (–AC), 28 Nov 1956, *Dahlgren, R. & Peterson, B. 1329* (BOL, LD); Still Bay, Windberg, (–AC), 18 Oct 1983, *Bohnen, P. 8395* (NBG); Still Bay Road, (–AD), 05 Nov 1949, *Levyns, M. 9515* (BOL); 16 km NW of Stilbaai, Klipfontein 414, Hannes Zaaiman Private Nature Reserve, 1.5 km west of house, (–AD), 25 June 2016, *Helme, N.A. 8814* (NBG); Klipfontein Farm- Hannes Zaaiman's Farm, Koppie above the cottage, (–AD), without date, *Ebrahim, I. CR2801* (NBG); Klipfontein Private Nature Reserve, (–AD), 09 Nov 2008, *Naude, J. SB659* (NBG); Dr Fanie Fourie Farm, between Klipfontein and Koringplaas, (–AD), 06 Nov 2003, *De Villiers, U. s.n.* (NBG); 4

miles N of Blombos along Riversdale Road, (–AD), 12 Aug 1965, *Dahlgren, R. & Strid, A. 2352* (LD); 3 miles NW of Blombos W of Still Bay, (–AD), 19 Oct 1956, *Dahlgren, R. & Peterson, B. 728* (K, LD, NBG); 17 miles S of Riversdale, (–AD), 05 Oct 1968, *Acocks, J. 24115* (K, NBG, PRE); 14 miles ESE of Riversdale along the road to Albertinia, (–BA), 24 Aug 1965, *Dahlgren, R. & Strid, A. 2622* (LD); Low kopje about 1 mile NE of Albertinia, (–BA), 03 Dec 1956, *Dahlgren, R. & Peterson, B. 1432* (LD); Albertinia, (–BA), 21 Oct 1953, *Barker, W. 8221* (NBG); Albertinia, (–BA), 08 Nov 1972, *Bayliss, R. 5239* (BR, K, Z); Albertinia, Boplaas, (–AB), Nov 1913, *Muir, J. 1258* (K, PRE); 8 km along Hectors Kraal Road to Still Bay, (–BA), 07 Dec 1986, *Vlok, J. 1742* (PRE); Albertinia, Ystervarkfontein, (–BA), 09 Oct 1972, *Bayliss, R. 5239* (NBG). **3423 (Knysna):** Plettenberg Bay, (–AB), without date, *Ecklon, C. 1377* (SAM).

16. ***Aspalathus oblongifolia*** R.Dahlgren, in *Op. bot. Soc. bot. Lund* 4: 289 (1960); *ibid.* 9 (1): 140 (1963); *Bot. Notiser* 121: 517 (1968); *Fl. S. Afr.* 3,6: 53 (1988). Type: South Africa. Western Cape, Simonstown (3418): Kogelberg, c. 400 m, (–BB), 01 March 1947, *Compton, R.J. 19394* (NBG, holo.!).

Erect reseeding shrub, 0.7–1.0 m tall. *Branches* woody, rod-like; with seasonal short-shoots; young branches minutely puberulous, becoming glabrescent with age. *Leaves* trifoliolate; arising from a small tubercle-based base, tubercle 1–1.5 mm long, often appearing spur-like due to close fasciculation. *Leaflets* flat, oblong, 3.0–6.0 × 0.7–2.0 mm, apex acute, margins entire, pale green, tomentose. *Inflorescences* unifloral, occasionally bifloral, borne on lateral short-shoots scattered along the upper stems. *Flowers* dark yellow, subtended by small greenish bracts, may appear in loose sequence along branchlets, not aggregated into a distinct head or spike. *Pedicels* very short or obscured (<0.5 mm). *Bracts* broadly oblanceolate, 2.0–3.0 × 0.5–1.0 mm, convex, obtuse, puberulous; bracteoles similar in shape, ~3.5 × 1.0 mm, flat, puberulous. *Calyx* campanulate, 6.0–7.3 mm long, silky puberulous to sericeous, greenish with a pale margin; teeth ovate-triangular, 2.5–3.0 mm long, puberulous to subglabrous, often slightly spreading. *Standard petal* ovate, 7.0–10.0 × 7.0–8.5 mm, abaxially glabrous to lightly sericeous; claw 1.0–1.5 mm long, turns orange with age. *Wing petals* oblong-elliptic, 8.5–9.5 × 3.5–5.0 mm, sericeous; petal sculpturing lunate, with a prominent main longitudinal fold and 1–2 minor crescent-shaped folds on the basal half of the blade; claw 2.5–3.0 mm long. *Keel petals* triangular-lunate, 7.5–8.2 × 4.0–4.6 mm, lacking prominent basal puckering, sericeous; claw 2.5–5.2 mm. *Androecium* 9.8–11.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 6.0–8.0 mm long; ovary and basal style sericeous; ovules 2. *Pod* broadly lanceolate, ~10 mm long, silky sericeous, slightly inflated, not seen dehiscing in fruiting specimens. *Seeds* not seen (Supplementary Figure B13).

Diagnostic characters. *Aspalathus oblongifolia* closely resembles *A. caledonensis* in its erect, rod-like growth form and general stature but differs in several consistent features. The indumentum is short-puberulous to glabrescent vs. densely silvery-sericeous in *A. caledonensis*. Leaflets are symmetrical, narrowly oblong (3.0–6.0 × 0.7–2.0 mm) vs. asymmetrical trifoliolate leaves in *A. caledonensis*, with a distinctly elongated central leaflet (4.0–7.0 mm) and smaller lateral leaflets (3.0–5.0 mm). Floral morphology further distinguishes the species: calyx teeth are ovate-triangular and 2.5–3.0 mm long vs. larger, narrowly lanceolate to subfiliform calyx teeth in *A. caledonensis*; bracts and bracteoles are smaller, 2.0–3.5 mm and puberulous vs. larger, up to 6.0 mm, and densely sericeous in *A. caledonensis*; and flowers are more loosely arranged along the upper stems vs. spike-like, densely packed inflorescences in *A. caledonensis*. Standard petals are 7.0–10.0 mm long and mostly glabrous abaxially vs. slightly larger (8.0–11.0 mm) and abaxially sericeous in *A. caledonensis*.

Distribution and habitat. *Aspalathus oblongifolia* is endemic to the southern Western Cape of South Africa, restricted to the lower mountain slopes and coastal hills of the Caledon Division and the Elim region of the Bredasdorp Division (Fig. 17A). Its distribution extends along the Kogelberg and Hangklip area, including Rooiels, Palmiet River, Betty's Bay, and Vogelgat, eastwards to Hermanus and Houw Hoek, with isolated records southward to Potberg in the Bredasdorp Division. The species occurs at low elevations on sandy or gravelly soils derived from Table Mountain Sandstone, typically in open, wind-exposed habitats within lowland fynbos vegetation. It shows a preference for well-drained substrates along foothill slopes and coastal margins, where it experiences seasonal variation in moisture availability. Populations are associated with Kogelberg Sandstone Fynbos [FFs 11] and Overberg Sandstone Fynbos [FFs 12] within the Fynbos Biome.

Flowering. January–April.

Etymology. The specific epithet *oblongifolia* is derived from Latin, meaning "with oblong leaves," and refers to the species' distinctively elongated leaflets, a key identifying feature. This interpretation was first clarified by Dahlgren (1960) in his revision of the genus.

Conservation status. *Aspalathus oblongifolia* faces increasing threats across its restricted range, particularly from coastal development near Pringle Bay and Kleinmond, where an estimated 20% of its historical habitat has been lost, much of this within the last two decades. Additional pressures include the spread of invasive alien plant species, which are especially problematic in unprotected subpopulations, such as those on the east of Kleinmond and on the Potberg. The Houwhoek subpopulation is also under threat from pine plantation encroachment and agricultural expansion (Raimondo & Schutte-Vlok, 2006). Previously assessed as Vulnerable [VU B1ab(ii, iii, iv, v)] (Goldblatt & Manning, 2000; Raimondo et al., 2009), the species is now considered Endangered, with a calculated Extent of Occurrence (EOO) of 2,011 km^2 and an Area of Occupancy (AOO) of 72 km^2, meeting the thresholds for EN B1ab(ii, iii, iv, v) + 2ab(ii, iii, iv, v) under the IUCN Red List criteria.

Specimen examined.

South Africa. WESTERN CAPE: **3418 (Simonstown):** W base of Hangklip, 26 Jan 1936, *Pillans, N.S. 8197* (BOL); Palmiet River mouth, (–BD), without date, *Levyns, M. 8943* (BOL); Mountain near Betty's Bay, (–BD), 28 Jan 1947, *Esterhuysen, E.E. 13689* (BOL); Rooiels, (–BD), 12 Oct 1947, *Esterhuysen, E.E. 14107* (BOL, NBG); Kogelberg State Forest, ± 2 km from Oudebos, right of road at 1st waterfall, (–BD), 04 May 1992, *Kruger, I. 531* (PRE, NBG); Kogelberg, (–BD), 01 Mar 1947, *Compton, R. H. 19394* (NBG). **3419 (Caledon):** Elephant Rock Mountain, Palmiet Rivier Mouth, (–AA), 28 Feb 1974, *Boucher, C. 2464* (PRE); Near Palmiet River Mouth, (–AA), 25 Jan 1946, *Esterhuysen, E.E. 12614* (K); Houw Hoek, (–AA), 08 Feb 1896, *Schlechter, F. 9719* (NBG); Hermanus, (–AC), without date, *Gillet, M.C. 578* (BOL); Hermanus, (–AD), 11 Feb 1950, *Martin, B. 296* (NBG); S lower slopes of S mountain of Two Sisters, N of Hangklip Mt., (–AD), 31 Oct 1965, *Dahlgren, R. and Strid, A. 3939* (K, LD, NBG, PRE); 2 miles E of Groot Hangklip Mountains, ca 1 miles of seacoast, (–AD), 31 Oct 1965, *Dahlgren, R. and Strid, A. 3936* (K, LD, NBG, PRE); Vogelgat, east of base camp, (–AD), 15 Jan 1979, *William, I. 2708* (PRE, NBG); East side of Vogelgat River, (–AD), 15 Feb 1984, *Williams, S. 1025* (K); Near Koude Rivier, (–DA), 25 Oct 1956, *Dahlgren, R. & Peterson, B. 866A* (LD); David's kraal, (–BD), 28 Jan 1926, *Compton, R.H. 6094* (NBG). **3420 (Bredasdorp):** Potberg, Neck between Elandspad & Koenskraal, (–CA), 16 Mar 1977, *Thompson, M.F. 3451* (K, PRE).

17. ***Aspalathus ramulosa*** E.Mey., *Linnaea* 7: 163 (1832); Eckl. & Zeyh., *Enum.* 2: 202 (1836); Walp., *Linnaea* 13: 503 (1839); R.Dahlgren, *Op. Bot. Soc. Bot. Lund* 4: 190 (1960); 9(1): 142 (1963); *Bot. Notiser* 121: 517 (1968); *Fl. S. Afr.* 3(6): 53 (1988). ≡ *A. aemula* E.Mey. var. *ramulosa* (E.Mey.) Harv., *Fl. Cap.* 2: 110 (1862). Type: South Africa, Western Cape, Clanwilliam (3218): Swartberg, (–BD), Nov 1828, *Ecklon, C.F. & Zeyher, C.L. 1380* (SAM, lecto. —image!, designated here; GRA—image!, isolecto.)

Note. *Aspalathus ramulosa* was described by E. Meyer based on material collected by Ecklon from "Zwarteberg, Caledon Division." No holotype was designated in the protologue (*Linnaea* 7: 163, 1832), and the original material presumed to have been housed in Meyer's

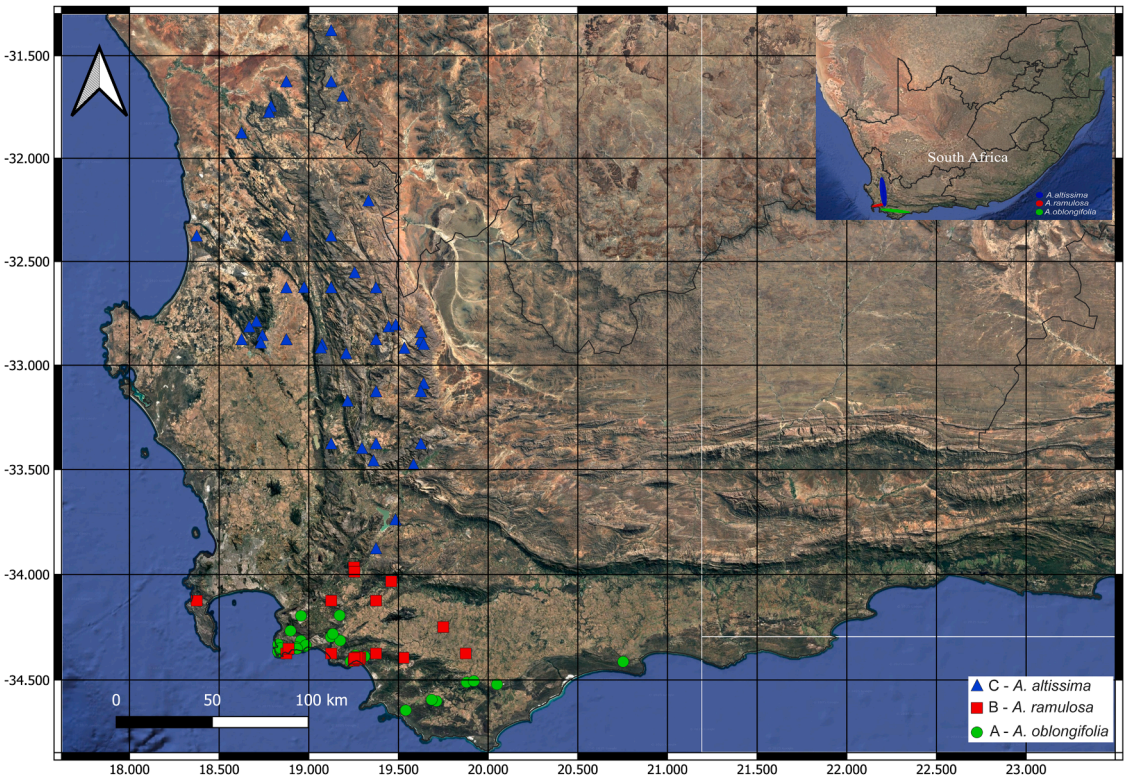

Fig. 17. Known distribution of *Aspalathus oblongifolia* (A), *A. ramulosa* (B), & *A. altissima* (C) based on verified herbarium specimens and field records. Each points represents a confirmed locality.

herbarium at Lübeck is no longer extant. Dahlgren (1960) cited specimens from S and SAM as likely original material but did not formally typify the name. The S specimen is currently untraceable, but the SAM specimen (SAM0031531-0) is extant, well-preserved, and matches the protologue locality and collector name, and voucher number. It is therefore designated here as the lectotype.

Erect, reseeding shrub, up to 0.7 m tall. *Branches* woody, stout, knotty stems derived from old short-shoots; young branches densely puberulous to velutinous. *Leaves* trifoliolate, tubercle-based, with leaflets densely and tightly clustered on short-shoots. *Leaflets* flat, ovate to oblanceolate, small, 2–3 × 1.3–1.5 mm, weak in texture, apex acute, densely silvery-sericeous on both surfaces. *Inflorescences* capitate, comprising 2–8 flowers, terminal on seasonal shoots. *Flowers* lemon-yellow, aging to orange brownish. *Pedicels* subsessile. *Bracts* oblanceolate to obovate, 2–4 × 1–1.5 mm, sericeous; pedicel ca. 0.5 mm long, sericeous; bracteoles oblanceolate, 3.5–5 × 0.5–1.8 mm, sericeous. *Calyx* campanulate, 6.5–8.3 mm long, densely silky-sericeous; teeth triangular, 2.0–3.0 × 2.3–3.0 mm, acute, often darkly pigmented, sericeous. *Standard petal* circular to broadly ovate, 6.8–9.5 × 8.0–11.0 mm, densely sericeous abaxially with recurved lateral margins; claw 3.5–5.0 mm long. *Wing petals* obliquely ovate to lunate, 7.0–9.0 × 3.8–5.3 mm, sericeous to tomentose; petal sculpturing lamellate with a prominent intercostal longitudinal fold and several basal rows of minute folds; claws 3.5–4.8 mm long. *Keel petals* lunate, 6.0–7.2 × 3.8–4.2 mm, sericeous to tomentose; claws 3.5–4.3 mm long. *Androecium* 9.5–12 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 7–8 mm long; ovary 3–6 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 4 –5. *Pod* triangular-lanceolate, 4.0–4.5 × ca. 2.5 mm, silky-pubescent. *Seeds* not seen. Refer to Dahlgren (1988) Fig. 8.

Diagnostic characters. *Aspalathus ramulosa* is morphologically similar to *A. aemula*, with both species sharing an erect, reseeding habit, trifoliolate leaves arising from tuberculate leaf bases, and densely pubescent floral parts. It is readily distinguished from *A. aemula* by its shorter stature, up to 0.7 m vs. 1.0–2.5 m in *A. aemula*; more compact, capitate inflorescences comprising 2–8 flowers vs. elongated racemes with 20–40 flowers; and smaller, ovate to oblanceolate leaflets (2–3 × 1.3–1.5 mm) tightly clustered on short, knotty shoots vs. larger, lanceolate leaflets (central leaflet 5.0–8.8 × 1.2–2.5 mm) that are variably developed in *A. aemula*. Floral morphology also differs: standard petals are broadly ovate to circular, 6.8–9.5 × 8.0–11.0 mm with recurved lateral margins vs. narrowly ovate, 7.0–8.0 × 5.6–7.4 mm with a cordate base in *A. aemula*; keel petals are 6.0–7.2 mm long and tomentose across the blade vs. glabrous at the margins; and ovules number 4–5 vs. 3 in *A. aemula*.

Distribution and habitat. *Aspalathus ramulosa* is endemic to the southern Western Cape of South Africa, with a primary distribution in the Caledon Division and outlying occurrences extending west to the Kogelberg–Hangklip area, east to Riviersonderend, and north to the Donkerhoek Mountains above Boskloof Farm (Fig. 17B). Historical and recent collections indicate that the species ranges from Houwhoek and Bot River in the west, across the Klein River and Fernkloof ranges near Hermanus, to Riviersonderend in the east, with isolated records from Blokkop south of Witklipkloof (Worcester District) and Baden near Montagu (Montagu District) suggesting a wider but fragmented distribution along the Cape Fold Belt foothills. The species typically occupies lower mountain slopes and foothill terrain at 200–350 m elevation, growing in open low fynbos scrub on grey to white sandy soils and sandstone gravel derived from weathered Table Mountain Sandstone, occurring within Overberg Sandstone Fynbos [FFs 12], South Sonderend Sandstone Fynbos [FFs 14], and Kogelberg Sandstone Fynbos [FFs 11]. Habitats are well-drained, often wind-exposed, and subject to seasonal moisture fluctuations, consistent with the ecology of coastal-foothill

fynbos elements.

Flowering. October–November.

Etymology. The specific epithet *ramulosa* is derived from Latin *ramulosus*, meaning "having many small branches" or "branchlet-bearing." It refers to the plant's distinctive growth habit, characterised by numerous short, rigid, twig-like branchlets arising from older wood, often giving the shrub a densely branched, knotty appearance. This feature is a prominent diagnostic trait of the species.

Conservation status. *Aspalathus ramulosa* is a widespread and locally common species confined to montane habitats in the Caledon Division of the Western Cape. It occurs primarily on lower mountain slopes in fynbos vegetation and is not currently impacted by major threats. The species occupies ecologically stable habitats and exhibits no evidence of population decline or habitat loss. The extent of occurrence (EOO) is estimated at 4,072 km^2 and the area of occupancy (AOO) at 68 km^2. Based on its broad distribution, habitat security, and abundance within its range, the species does not meet the thresholds for any threat category and is therefore assessed as Least Concern (LC) under IUCN Red List criteria.

Specimens examined.

South Africa. Western Cape**. 3218 (Clanwilliam):** Donkerhoek Mountains, above Boskloof Farm, (–BB), 30 Oct 1965, *Dahlgren, R. & Strid, A. 3924* (LD). **3319 (Worcester):** Mid east slopes of Blokkop, S of Witklipkloof, (–CA), 31 Oct 2019, *Helme, N.A. 9754* (NBG). **3320 (Montagu):** Baden near Montagu, (–CA), 27 Sept 1946, *Levyns, M. 8004* (BOL). **3418 (Simonstown):** Above the left bank of the Palmiet River, about 3 m from its mouth, (–BD), 26 Oct 1942, *Porter, H. Sub-BH26256* (BOL). **3419 (Caledon)**: Near Houw Hoek, (–AA), without date, *Bolus, H. 9877* (BOL), 31 Oct 1913*, Peter, G.A. 50383* (K); Bot River, (–AA), 18 Sept 1949, *Wilman, A.M. 789* (PRE); 8 km SW of the intersection Bot Rivier, Hermanus and Kleinmond, Palmietberge, near Hoenigklip, (–AC), 30 Sept 1956*, Dahlgren, R. & Peterson, B. 496* (BOL, LD, K); Hermanus, Vogelgat Nature Reserve, (–AD), 23 Oct 1982, *Burman, C. 1019A* (BOL); Willemshof Farm, 11.2 km NE of Hermanus, (–AD), 29 Oct 1965, *Dahlgren, R. & Strid, A. 3896* (LD, K, PRE, US, NY); Mossel Rivier, Fern Kloof Nature Reserve, (–AD), 14 Oct 1965, *Dahlgren, R. & Strid, A. 3659* (LD, K, NBG, PRE), 18 Oct 1989, Greuter, W. 21918 (PRE); S slopes of Klein River Mountains below Maanschinjnkop, (–AD), 29 Oct 1965, *Dahlgren, R. & Strid, A. 3884* (LD, NBG); Vogelgat east of base, (–AD), 26 Sept, 1982, *Williams, I. 3309* (NBG), 05 Oct 1977, *Williams, I. 2356* (NBG); Riviersonderend, (–BB), without date, *Stokoe, T.P. 7373* (BOL).

South Africa. Unknown locality. Without date, *Wänman, C.H. Sub-SBT11833* (SBT).

18. ***Aspalathus altissima*** R.Dahlgren, in *Op. Bot. Soc. Bot. Lund* 4: 209 (1960); *ibid.* 9 (1): 142 (1963); *Bot. Notiser* 121: 518 (1968); *Fl. S. Afr.* 3,6: 51 (1988). Type: South Africa, Western Cape, Clanwilliam (3218), summit of head S of Zebrakop, (–DB), 10 Nov 1934, *Pillans, N.S. 7505* (BOL, holo.!; K! iso.).

'Aspalathus sericea' auct. non-Berg, in E.Mey., *Comm*. 1: 42 (1836); Walp. in *Linnaea* 13: 485 (1839); Benth. in Hooker, *Lond. J. Bot.* 7: 601 (1848); Harv., *FI. Cap*. 2: 106 (1862); '*Paraspalathus sericea'* (*Asp. sericea* P.J.Bergius)' was used by Presl, *Bot. Bemerk*. 130 (1845) in the same sense. Type: South Africa, Western Cape, Wuppertal (3219): Ezelsbank, (–AC), Dec 1830, *Drège, J.F. s.n.* (HBG, lecto—image! here designated; PRE! S14-18500—image! iso.).

Erect, reseeding shrub, 1.0–2.0 m tall. *Branches* woody, somewhat lanky and rigid, old stems with vertically stripping bark; young branches densely short-sericeous. *Leaves* trifoliolate, arising from a knotty woody tubercle-base. *Leaflets* linear-oblong to oblanceolate, obtuse to acute, central leaflet 3.0–5.5 × 1.5–2.1 mm, larger than the laterals; lateral leaflets 1.5–3.0 × 1.0–1.3 mm, often reduced; leaflets on long shoots are soft, flexible, and densely silvery-sericeous on both surfaces. *Inflorescences* conical raceme, terminal, with 10–35 flowers, subtended by a single leaf. *Flowers* light yellow, turning dark orange-red post-anthesis. *Pedicels* ~0.5 mm long, sericeous. *Bracts* oblong to oblanceolate, 4.5–7.0 × 2.2–2.5 mm, acute, tomentose-sericeous; bracteoles similar in shape, 2.0–6.5 × 0.3–1.0 mm, sericeous. *Calyx* tubular-campanulate, 5.5–9.5 mm long, densely short-tomentose, longer ventrally, strigose externally, olive green; teeth deltoid-triangular, 1.5–2.0 mm long, acute, tomentose. *Standard petal* circular, 7.0–10.5 × 8.0–10.5 mm, rounded at apex, emarginate, folded into a reddish-brown apical tip, back shortly pubescent; claw 2.5–4.0 mm. *Wing petals* oblong, 7.0–9.5 × 3.5–4.2 mm, concave above midline, glabrous; petal sculpturing lamellate, with 4 parallel basal folds confined between costal veins and a prominent longitudinal fold extending along the midline; ridges regularly spaced, surface minutely papillate between lamellae; claw 4.0–6.0 mm. *Keel petals* lunate, 6.5–7.5 × 3.5–4.5 mm, with nearly straight upper margin, sericeous on lower surface, glabrous along the margin; claw 4.0–5.5 mm. *Androecium* 11.0–12.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 5.0–8.0 mm long; ovary superior, narrowly oblong, style slender, upcurved, pubescent on basal third, sericeous; stigma capitate, slightly broadened, receptive surface apical; ovules 4. *Pod* obliquely lanceolate, 10.0–14.0 × 3.0–3.5 mm, densely white-pubescent, dehiscent. *Seeds* not seen. Refer to Dahlgren (1988) Fig. 8.

Diagnostic characters. *Aspalathus altissima* is morphologically similar to *A. aemula* and *A. sericea*, particularly in its erect growth form, asymmetrical trifoliolate leaves with reduced lateral leaflets, and long racemose inflorescences bearing yellow flowers. It is readily distinguished from *A. aemula* by its smaller leaves, 3.0–5.5 × 1.5–2.1 mm vs. 5.0–8.8 × 1.2–2.5 mm in *A. aemula*; and by its spike-like inflorescence up to c. 50 mm long with 10–35 flowers vs. pyramidal to ovate inflorescences with 20–40 flowers in *A. aemula*. Compared to *A. sericea, A. altissima* has shorter leaves, 3.0–5.5 × 1.5–2.1 mm vs. 6.0–10.5 × 2.5–3.2 mm, and a shorter, spike-like inflorescence with 10–35 flowers vs. pyramidal to elongate spikes bearing 20–35 flowers in *A. sericea*.

Distribution and habitat. *Aspalathus altissima* is distributed across mountainous regions of the Piketberg, Ceres, Clanwilliam, Calvinia, and Vanrhynsdorp Divisions, ranging from the Ceres Mountains in the south to Nieuwoudtville in the north, and extending eastward from Piketberg Mountain to the Swartruggens (Fig. 17C). The species occurs primarily on rocky slopes and outcrops within mountain fynbos vegetation, rooted in sandy soils derived from Table Mountain Sandstone, and is found within Swartruggens Quartzite Fynbos [FFq 2], Cederberg Sandstone Fynbos [FFs 4], and Piketberg Sandstone Fynbos [FFs 6]. Plants often exhibit lax, elongated stems that sprawl or recline over surrounding boulders, particularly in open, well-drained habitats.

Flowering. October–November.

Etymology. The specific epithet *altissima* is derived from Latin, meaning "very tall" or "highest," and refers to the characteristically elongated, rod-like stems of the species. While *A. altissima* possesses notably tall floral shoots, it is not necessarily the tallest species in the subgenus overall.

Conservation status. *Aspalathus altissima* was previously assessed as Least Concern by Raimondo et al. (2009). However, updated spatial metrics suggest an elevated conservation concern. The species now has an Extent of Occurrence (EOO) of 17,887.423 km^2, placing it within the Vulnerable (VU) threshold under criterion B1, and an Area of Occupancy (AOO) of 172.000 km^2, which qualifies it as Endangered (EN) under criterion B2. Although it remains relatively widespread, these figures indicate a contraction in range and potential pressures on its habitat.

Specimens examined.

South Africa. NORTHERN CAPE. **3118 (Vanrhynsdorp):** Giftberg Pass, near top, (–BC),(–BC), 21 Sept 1948, *Acocks, J. 14884* (K); 31 Aug 1976, *Stirton, C.H. 5963* (K); Giftberg, (–BC), 2 September 1948, *Compton, R.H. 20804* (NBG); Unionskraal, Matsikamma Mountain, NE plateau, (–DB), 01 Sept 1997, *Helme, N.A. 1375* (NBG). **3119 (Calvinia):** Oorlogskloof, 9 miles SE of Nieuwoudtville, (–AC), without date*, Lavis, M. Sub-BH19660* (BOL); Niewoudtville, Glenridge Farm, (–AC), 13 Sept

1976, *Hugo, I. 517* (K, NBG); Glenridge, Nieuwondtville (–AC), 20 Aug 1960, *Middlemost, A. 2091* (NBG); 12 km NW of Nieuwoudville, Avontuur 641, 0.2 km east of Grasberg River, (–AC), 15 Nov 2008, *Helme, N.A 5853* (NBG); Lokenburg, (–CA), 24 Sept 1955, *Acocks, J. 18537* (K); Kobe Mountains, (–CC), 13 Oct 1973, *Bayliss, R. 6170* (K, NBG); Lokenburg, (–CA), 24 Sept 1955, *Leistner, O. 425* (NBG). WESTERN CAPE. **3218 (Clanwilliam):** Piquetberg Div., 3.22 km SE of Stawelklip, on the Piquetberg Mountain plateau, (–BC), 01 Nov 1965, *Dahlgren, R. & Peterson, B. 978* (K, NBG); Top of Piketberg Mountain, (–BC),12 September 1951, *Martin, B. 865* (NBG); Piketberg Mountain 2500', 3 Nov 1951, *Barker, W. 7565* (NBG); Piketberg Div., rocky hills ca 1.61 km W of the top of Versfeld pass, (–BC), 27 Oct 1965, *Dahlgren, R., & Strid, A. 3866* (K, NBG); Schimmelberg, (–BD), 12 Oct 1939, *Pillans, N.S. 9132* (BOL); Piketberg Div. Summit of head S of Zebra Kop, (–DB), 10 Nov 1934, *Pillans, N.S. 7505* (BOL); Summit of Piketberg Mountain, (–DC), 02 Oct 1895, *Bolus, H. 8433* (BOL). **3219 (Wuppertal):** Elandskloof, (–CA), 03 Oct 1940, *Esterhuysen, E.E. 3410* (BOL); Elandskloof, (–CA), without date, *Levyns, M. 9341* (BOL); Elands kloof-cliffs, (–CA), 3 October 1940, *Compton, R.H. 10013* (NBG), Kromrivier, S Cederberg, (–CA), 10 Nov 1984, *Taylor, H. 11149* (NBG); Clanwilliam Div., steep mountain pass above Elandskloof valley in the mountains E of Citrusdal, (–CA), 19 Aug 1965, *Dahlgren, R. & Strid, A. 2547* (NBG); Clanwilliam Div., south slopes of Elandskloof, (–CA), 03 Oct 1940, *Esterhuysen, E.E. 3410* (K); Blinkberg, NE Cold Bokkeveld near Grootrivier, (–CB), 01 Nov 1983, *Boucher, C. 5075* (NBG); Koude Bokkeveld, (–CC), 07 Sept 1896, *Schlechter, F. 8887* (BOL, K); Swartruggens, 8.69 km along the farm road going N from summit of Katbakkies, (–DC), 19 Sept 1964, *Taylor, H. 5881* (NBG); Knolfontein, Swartruggen 60 km NE of Ceres, (–DC), 01 Nov 2007, *Jardine, I. & Jardine, C. 770* (NBG); Ceres, Zwartruggens, Groenfontein near Stompiesfontein, (–DC), 02 Oct 1991, *Bean, P.A. 2691* (BOL); Knolfontein, Swartruggens 60 km NE of Ceres, (–DC), 14 Sept 2005, *Jardine, I. & Jardine, C. 123* (NBG); Ceres, Zwartruggens, Katbakkies, (–DC), 02 Oct 1991, *Bean, P. 2695* (BOL); Groenfontein, Zeekoegat 137, west of Riet Rivier, (–DC), 06 Oct 2000, *Stobie, M. 7* (NBG); Zwartruggens, Stompiesfontein, (–DC), 26 Sept 1926, *Levyn, M. 1870* (BOL); Piekenierskloof, near top of pass on west side, (–DD), 25 Sept 1982, *Taylor, H. 10455* (K). **3319 (Worcester):** Gydoberg, (–AB), 10 Nov 1946, *Leighton, F. 2232* (BOL); Ceres Div., Gydouw, (–AB), Oct 1939, *Leipoldt, G. 3117* (BOL, K); Gydo, 10 Nov 1946, *Compton, R.H. 18762* (NBG); South of Cold Bokkeveld Mountains, near Zandberg, (–AB), 04 Oct 1940, *Esterhuysen, E.E. 3467* (BOL); South Cold Bokkeveld, 4 October 1940, *Bond, P. 656* (NBG); 9 miles east of the intersection Ceres, Citrusdal and Elandsfontein between Hottentotskloof and Elandsfontein, (–AB), 07 Nov 1956, *Dahlgren, R. & Peterson, B. 1105* (BOL, K); Ceres Wild Flower show, (–AD), without date, *Compton, R. 4408* (BOL); Ceres Wild Flower show, (–AD), 01 Oct 1934, *Leighton, F. Sub-BH26157* (BOL). **3320 (Montagu):** Ceres Dist., Watervalsberg, Kareevlakte, (–DB), 16 Sept 1965, *Grobler, P. 529* (NBG).

19. ***Aspalathus aemula*** E.Mey., in Comm. 1: 42 (1836). ≡*Paraspalathus aemula* (E.Mey.) C. Presl, in *Bot. Bemerk.* 130 (1845). ≡*Achyronia aemula* (E.Mey.) Kuntze, in *Rev. Gen.* 1: 157 (1891). ≡ *Aspalathus sericea* Berg, subsp. *aemula* (E.Mey.) R.Dahlgren, in *Op. bot. Soc. bot. Lund* 4: 206 (1960); *ibid.* 9 (1): 142 (1963); *Bot. Notiser* 121: 518 (1968) in *Fl. S. Afr.* 3,6: 31 (1988). Type: South Africa, Western Cape, Worcester (3319): Jacobs River, (–CB), 14 Sept 1826, *Drège* s.n. (P, lecto—image!; designated by Dahlgren (1988); P—image!, isolecto.).

Ononis spicata Thunb., in *Prodr.* 2. 129 (1800); *Sp. Pl. Edn* 3, 3: 995 (1800); *Fl. Cap.* edn 2: 584 (1823). ≡*Achyronia spicata* (Thunb.) Kuntze, *Rev. Gen.* 1: 157 (1891). Type: in herbarium Thunberg s.n., e Cap. Bon Spei (UPS-THUNB, lecto—image! designated by Dahlgren (1988)).

Notes: The name *Aspalathus argentea* was misapplied by Ecklon & Zeyher to specimens such as No. 1390, which correspond to *A. aemula* E. Mey. rather than to *A. argentea* Thunb. or Linnaeus. This misapplication was subsequently perpetuated by later authors, including Walpers (1839), Bentham (1848), and Harvey (1862), who employed the name in reference to plants now recognised as *A. caledonensis* R.Dahlgren. These historical misapplications are now excluded from the circumscription of *A. argentea* and are formally referable to *A. caledonensis*.

Erect, reseeding shrub, 1.0–2.5 m tall. *Branches* woody, rigid, rod-like; young branches white-tomentose, becoming glabrescent with age. *Leaves* trifoliolate, arising from a knotty, tomentose, and tuberculate leaf base. *Leaflets* lanceolate, the central leaflet 5.0–8.8 × 1.2–2.5 mm, larger than the laterals; lateral leaflets 2.5–4.0 × 0.7–1.5 mm, often reduced or occasionally absent; acute, weakly textured, with a distinct midvein; surfaces densely covered in silvery-sericeous indumentum, frequently rudimentary. *Inflorescences* a conical raceme, terminal on the main stem, forming a pyramidal-ovate structure with 20–40 flowers per inflorescence. *Flowers* light yellow, turning brown with age; petals covered with lanate or villous pubescence. *Pedicels* ~0.5 mm long. *Bracts* linear-lanceolate, 4.5–9.0 × 0.3–1.0 mm, sericeous; bracteoles 2.5–6.0 × 0.8–1.5 mm, filiform, sericeous. *Calyx* lanate, 7.4–11.0 mm long, green to brownish, densely villous; teeth linear-lanceolate, 3.5–6.5 mm long, long-pointed, slightly curved, sericeous. *Standard petal* ovate, 7.0–8.0 × 5.6–7.4 mm, rounded at apex, base cordate, silky-sericeous abaxially; claw 2.5–4.2 mm long. *Wing petals* oblong, 6.0–7.0 × 3.2–4.0 mm, villous; petal sculpturing lamellate, with thin parallel intercostal folds; claw 3.5–3.8 mm long. *Keel petals* 5.5–6.0 × 1.7–3.8 mm, lunate, densely tomentose except along margins; claw 3.0–4.0 mm long, adnate to staminal tube at base. *Androecium* 9.0–10.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 2.5–3.3 mm long; ovary superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; 3 ovules arranged longitudinally. *Pods* and seeds not seen (Supplementary Figure B14).

Diagnostic characters. *Aspalathus aemula* is morphologically similar to *A. sericea*, with both species sharing a similar erect growth form, floral structure, and sericeous indumentum. It differs from *A. sericea* by its taller stature, reaching up to 2.5 m vs. 1.0 m in *A. sericea*; inflorescences bearing up to 40 flowers vs. rarely 30–35 flowers; calyx teeth linear-lanceolate vs. narrowly triangular; shorter flowers, up to 8.0 mm long vs. up to 10.5 mm in *A. sericea*; and fewer ovules, 3 vs. 6 in *A. sericea*.

Distribution and habitat. *Aspalathus aemula* is endemic to the mountainous regions of the Western Cape, South Africa, occurring from the Cederberg Mountains near Clanwilliam and Pakhuis Pass in the north, southward along the Hex River Valley and the Olifants River and Koue Bokkeveld Mountains, and eastward to the Witteberg ranges and the mountains near Montagu (Fig. 18A). Its distribution spans the Clanwilliam, Ceres, Piketberg (Twenty-four Rivers Mountains), Worcester, Montagu, and Laingsburg Divisions, with scattered records from Porterville, Matroosberg, and the Baden–Fisantekraal hills near Montagu. The species occupies rocky and stony slopes on Table Mountain Sandstone-derived substrates within mountain fynbos vegetation, particularly in Olifants Sandstone Fynbos [FFs 3] and Winterhoek Sandstone Fynbos [FFs 5]. It occurs at mid- to high elevations (400–1,250 m), often on well-drained sandstone ridges, slopes, and rocky foothills exposed to seasonal climatic extremes.

Flowering. September–November, occasionally April.

Etymology. The specific epithet *aemula* is derived from Latin, meaning "to emulate" or "to rival," and refers to the species' morphological resemblance to related taxa, particularly *Aspalathus sericea* (Dahlgren, 1960).

Conservation status. This species is widely distributed and remains stable, with no significant decline observed. It was previously classified as Least Concern (Foden and Potter, 2009). The latest assessment reports an Extent of Occurrence of 33,471 km^2 and an Area of Occupancy of 212 km^2, confirming its status as Not Threatened.

Specimen examined.

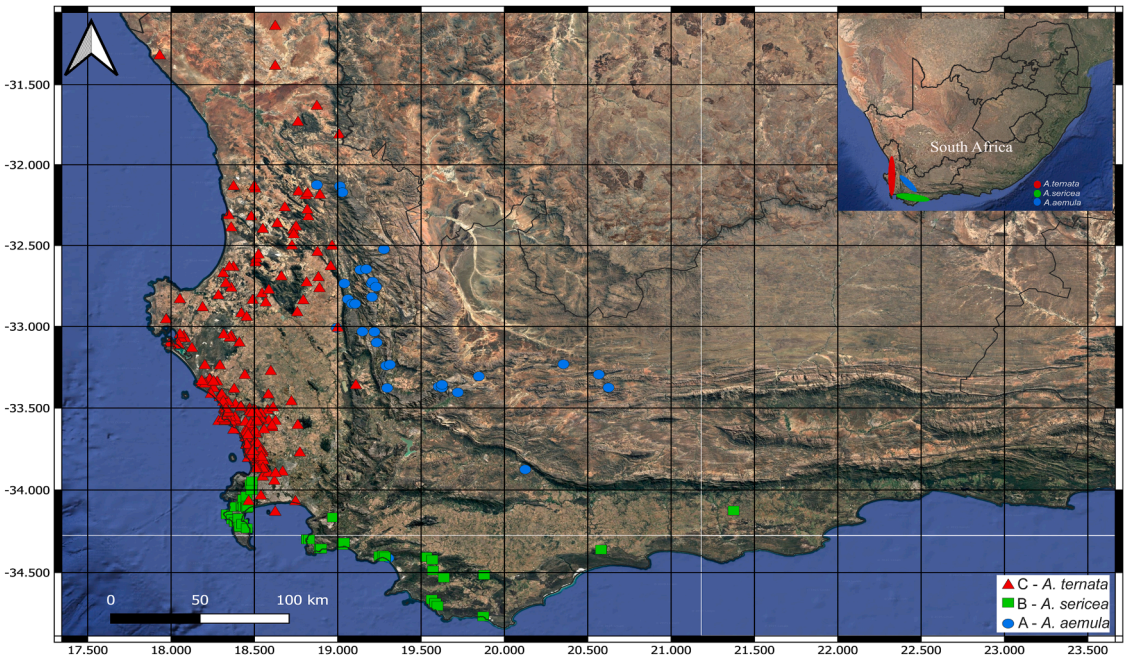

Fig. 18. Known distribution of *Aspalathus aemula* (A), *A. sericea* (B), & *A. ternata* (C) based on verified herbarium specimens and field records. Each point represents a confirmed locality.

South Africa. Western Cape: **3218 (Clanwilliam):** Clanwilliam, (–BB), Nov 1929, *Thode, J. A2108* PRE). **3219 (Wuppertal):** Pakhuis Mountains, (–AA), without date, *Leipoldt, C. 3392* (BOL); Mountain N of Pakhuis Pass, (–AA), 04 Dec 1983, *Taylor, H.C. 10806* (NBG); Heuningvlei, (–AA), 25 Oct 1923, *Pocock, M. 644* (NBG); Hex rivier, (–AC), Sept 1907, *Bolus, H. Sub-TRV11833* (PRE), Oct 1881, *Tyson, W. 739* (PRE); Warmbaths, Olifants River Mountains, (–CA), 21 Sept 1913, *Stephens, E. 7037* (BOL); 23 Sept 1911, *Stephens, E. 7017* (BOL); Just south of Mr Norman's Farm, near Warmwaterkloof, 25.7 km south of Citrusdal, Olifants River Mountain, (–CC), 03 Nov 1956, *Dahlgren, R. & Peterson, B. 1021* (BOL); Koude Bokkeveld behind Schoongesicht, (–CC), 28 Jan 1897, *Schlechter, F. 10192* (BOL, PRE); Between Schurfteberg and Great Winterhoek Mountains, (–CD), Oct 1953, *Stokoe, T.P. Sub-SAM53131* (PRE). **3318 (Cape Town):** Near Porterville, (–BB), without date, *Edwards, G. 266* (BOL); Porterville Mountain, Berghof, (–BB), 28 Sept 1972, *Oliver, E. 3958* (NBG, PRE). **3319 (Worcester):** Near road between Rosendalfontein and Visgat, (–AA), 25 Nov 1941, *Pillans, N.S. 9667* (BOL); Olifants River Mountains, just S of Groen, (–AA), 27 Dec 1946, *Esterhuysen, E.E. 13377* (BOL); West of Gydouw Pass, (–AB), 27 Oct 1928, *Hutchinson, J. 1017* (BOL); Near the road between Agter Witzenberg and the top of Gydou Pass, 6.4 km from its intersection with road Ceres-Citrusdal, (–AB), 09 Nov 1956, *Dahlgren, R. & Peterson, B. 1139* (BOL, PRE); Koue Bokkeveld, (–AB), 03 Sept 1965, *Hanekom, W. 495* (PRE); Near Ceres, (–AD), without date, *Bolus, H. 8362* (BOL); Roodeberg, (–BC), without date, *Esterhuysen, E.E. 1508* (BOL), *ibid.,* 19 Jan 1940, *Compton, R.H. 8450* (NBG); Matroosberg Nature Reserve, (–BC), 26 Nov 2017, *Du Preez, B. 470* (BOL); Bonteberg, Eikenbosch Hoek, (–BD), *Esterhuysen, E.E. 3690* (BOL); Elands Kloof, (–CA), 03 Oct 1940, *Esterhuysen, E.E. 3398* (BOL); Witteberg, S. slopes and top, above Elandsfontein, (–CA), 04 Nov 1963, *Bertil, N. 3264* (S); Keerom, above Olifants River, (–CC), 04 Dec 1950, *Esterhuysen, E.E. 17916* (BOL); 1.6 km SE of Keerom, (–CC), 25 Nov 1938, *Pillans, N.S. 8684* (BOL); 25.7 km S of Groot River near the road between Kriedouwkrans and Ceres, (–DD), 04 Nov 1956, *Dahlgren, R. & Peterson, B. 1051* (NBG, PRE). **3320 (Montagu):** Tweeside, (–AB), 24 Sept 1932, *Barker, W. 20606* (BOL); Baden hills, (–BC), 24 Sept 1946, *Compton, R.H. 18419* (NBG); Fisantekraal, (–BC), 07 Nov 1948, *Compton, R.H. 21091* (BOL, NBG); Montagu Baths, (–CA), 08 Jul 1935, *Compton, R.H. 5368* (NBG); Oct 1921, *Page, M. 107* (PRE).

20. ***Aspalathus sericea*** P.J.Bergius, Descr. Pl. Cap. 212 (1767); L.f., Suppl. 321 (1781); Lam., Encyl. 1: 288 (1783); Thunb., Prodr. 2: 125 (1800); Diss. Bot. *Aspalathus* 1: 9 (1802); Willd., Sp. Pl. 3: 965 (1803); Thunb., Fl. Cap. edn 2: 574 (1823); DC., Prodr. 2: 142 (1825); Benth. in Hooker, Lond. J. Bot. 7: 601; Harv., Fl. Cap. 2: 106 (1862); Eckl. & Zeyh., Enum. 2: 202 (1836); E.Mey., Comm. 1: 42 (1836); R.Dahlgren, Fl. S. Afr. 3,6:50 (1988). ≡*Achyronia sericea* (P.J.Bergius) Kuntze, Rev. Gen. 1: 157 (1891). Type: South Africa. Precise locality unknown, *Grubb,* s.n. (SBT, holo. —image!).

Aspalathus argentea J.F.Gmel. Syst. Nat., ed 13 [bis]. 2(2):1093 (1792), *nom. illeg.*

Aspalathus linifolia Steud., Flora 13 (2): 543 (1830). Type unknown.

Notes: The species *Aspalathus linifolia* has not been proven a synonym of *A. sericea* as the type has not been seen. Steudel's stated "this is a yet undescribed species under the subgenus: Intermes with the following diagnosis: *Aspalathus linifolius,* with linear-lanceolate leaves silky on both sides, flowers in racemes with very short peduncles, peduncles filiform, calyces bracteate and hairy, corollas silky. Fl. Debri is on the Cape Flats near Tokay. This species is only found in complete herbaria of 1000-800 species." This species cannot be regarded as an *Aspalathus sericea* synonym as the description 'peduncles filiform' does not fit with the description of *Aspalathus* species, which are characterised by their lack of peduncles.

Erect, reseeding shrublet, 0.8–1.0 m tall. *Branches* slender, flexuous, subwoody, densely covered in long, appressed sericeous hairs; young branches pale green, turning faintly reddish with age, internodes shorter (5–8 mm). *Leaves* trifoliolate, with long-shoot leaves typically bearing a single prominent central leaflet and rudimentary or absent lateral leaflets. *Leaflets* ovate to elliptic-oblong; central leaflet 6.0–10.5 × 2.5–3.2 mm, acute to acuminate, silvery-sericeous on both surfaces; lateral leaflets (when present) 3.5–4.5 × 1.3–1.5 mm. *Inflorescences* conical raceme, forming a pyramidal to elongate spike, terminal, with 20–35 flowers. *Flowers* light yellow, sericeous. *Pedicels* 0.7–1.0 mm long. *Bracts* lanceolate, 6.0–11.0 × 0.7–3.0 mm, sericeous; bracteoles sub-filiform, 7.5–9.0 mm long, sericeous. *Calyx* tubular, 8.3–10.5 mm long, densely sericeous; teeth narrowly triangular, 4.5 × 1.5–2.5 mm, pointed. *Standard petal* ovate, 9.0–10.5 × 6.0–7.8 mm, obtuse to acute, sericeous

abaxially; claw 3.0–4.3 mm long. *Wing petals* narrowly obovate-oblong, 9.0–9.5 × 3.7–4.5 mm, sericeous except on the upper basal portion; petal sculpturing lamellate with several transverse rows of minute folds; claw 4–5 mm long. *Keel petals* lunate, 6.5–7.0 × 3.5–4.0 mm, with nearly straight upper margin, sericeous on lower two-thirds, shorter than the wing petals. *Androecium* 9.0–12.0 mm long; filaments forming a staminal tube; anthers dimorphic, with 6 short basifixed and 4 long dorsifixed. *Pistils* 6.5–8 mm long; ovary 1.5–5 mm, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, ovules 4. *Pods* dehiscent, lanceolate, 6.0–8.0 × 2.0–2.5 mm, smooth, sericeous. *Seeds* not seen (Supplementary Figure B15).

Diagnostic characters. *Aspalathus sericea* is morphologically similar to *A. aemula*, sharing a sericeous indumentum and erect growth form. It differs from *A. aemula* in its shorter stature, rarely exceeding 1.0 m vs. up to 2.5 m in *A. aemula*, and in its inflorescences, which are typically pyramidal to elongate spikes bearing 20–30(–35) flowers, compared to the 20–40-flowered racemes of *A. aemula*. Other comparative details, including calyx and petal morphology, leaf dimensions, and ovule number, are provided under *A. aemula* (No. 19).

Distribution and habitat. *Aspalathus sericea* occurs in sandy lowland areas extending from near Cape Agulhas in the Bredasdorp Division, along the coastal regions of the Caledon and Somerset West Divisions, as well as the Peninsula and Cape Flats in the Cape Town and Bellville Divisions, reaching the central part of the Malmesbury Division in the northwest (Fig. 18B). Its preferred habitat consists of flat marine sands or sandy plains at the base of mountains, although it is occasionally found on sandstone hills, such as the summit of Muizenberg Mountain, and it occurs primarily within Cape Flats Sand Fynbos [FFd 5]. The species is a prominent and visually striking component of fynbos ecosystems.

Flowering. October–December.

Etymology. The specific epithet *sericea* is derived from Latin, meaning "silky," and refers to the plant's distinctive, closely appressed, soft, and straight hairs, particularly evident on the leaves and young branches (Dahlgren, 1960).

Conservation status. This species is widely distributed and common, yet it faces potential decline in certain low-lying regions, particularly the Cape Flats and the West Coast, due to urban development and agricultural activities. Fortunately, many subpopulations thrive in protected areas and on lower mountain slopes, where they are stable. It has recorded 201 observations on iNaturalist (www.inaturalist.org) from various localities. Previous assessment, it is classified as Least Concern (Plummer, 2021). Current assessment, Extent of Occurrence (EOO) = 20,507 km^2 (NT), Area of Occupancy (AOO) = 192 km^2(EN). AOO based on IUCN default cell width (2 km).

Specimen examined.

South Africa. WESTERN CAPE: **3318 (Cape Town):** Ysterfontein, (–BA), 29 Nov 1966, *Bayliss, R. 3776* (A); Cape Peninsula, Kenilworth Racecourse (–CD), 14 Nov 1956, *Dahlgren, R. and Peterson, B. 1196* (BOL, K), 18 Nov 1970, *Esterhuysen 32537* (BOL); Cape Flats near Rondebosch, (–CD), Nov 1877, *Bolus, H. 3839* (BOL); Near Raapenberg, (–CD), Nov 1889, Unknown *Sub-Guthrie198* (BOL); Tokay Flats, (–CD), 12 Nov 1935, *Levyns, M. 5271* (BOL); Kenilworth Racecourse, Sept 1913, *Kensit s.n.* (BOL); *ibid.,* 29 Nov 1950, *Gray s.n.* (BOL); Cape Flats, Doornhoodge, (–DC), without a date, *Ecklon, C. & Zeyher, C. s.n.* (GH); Langverwacht above Kuilsrivier, main kloof (–DC), 21 Aug 1973, *Oliver, E. 4353* (NBG). **3319 (Worcester):** Hartebeestkloof, S of slopes of Vaalboskloofber (–AB), 03 Nov 1974, *Oliver, E. 5152* (NBG); La Motte Forest Station, Zachariashoek, Kasteel-kloof (–CC), 21 Oct 1982, *Viviers, M. 731* (NBG). **3320 (Montagu):** N base of Langeberg Mountain 8.0-9.7 km ESE of Montagu, (–CD), - 11 Aug 1965, *Dahlgren, R. and Strid, A. 2256* (NBG). **3418 (Simonstown):** Cape Peninsula, Muizenberg Mountain, (–AB), Nov 1880, *Bolus, H. 4658* (BOL); 08 Jan 1881, *Wolley-Dod, A.H. 2319* (BOL); Cape of Good Hope, Simon's Bay, (–AB), without date, *Wright, C. s.n.* (GH); Klaverberg, 18 Nov 1896, *Wolley-Dod, A.H. 1997* (BOL); Upper end of Silver Mine Valley, 20 Oct 1915, *Pillans, N.S 3053* (BOL); 27 Dec 1942, *Bond, P. 1555* (NBG); 16 Oct 1946, *Baker, W.F. 4221* (NGB); Near Modderdam, 14 Nov 1945, *Leighton, F.M. 1472* (BOL); Hills above Simons Bay, without date Nov 1946, *Alexander, R.C. s.n.* (NBG); Theefontein, 18 Nov 1950, *Compton, R. 22284* (NBG); Red Hill, 22 Oct 1962, Adamson, *H.C. 8618* (NBG), Cape of Good Hope Nature Reserve, NW of Modderdam (towards Silo School), 10 Oct 1973, *Taylor, H.C.5565* (NBG); Near Sir Lowry's Pass (–BB), Oct 1900, *Bolus, H. 26150* (BOL); Hottentots Holland Mountains ca 0.80 km N of the top of Sir Lowry's pass, 11 Oct 1965, *Dahlgren, R. and Strid, A. 3607* (NBG); Scree slope on western side of Groot Hangklip (–BC), 22 Oct 1969, *Boucher, C. 751* (NBG). Near the sea at Rooi Els (–BD), 04 Nov 1949, *Parker, R.N. 4457* (BOL); Road to Pringle Bay Reservoir (–BD), 27 Nov 1955, *Levyns M. 10390* (BOL); Along the range between Smitswinkle and Swartkops Peak, 05 Nov 1986, *Esterhuysen E.E. 36397* (BOL). Nuweberg S.F. Kogelberg, slopes of Dwarsrivier Mountains, above jeep track from highlands, 12 Oct 1989, *Le Maitre, D.C. 573* (NBG). **3419 (Caledon):** Kleinmond, N 10 m above transformer on road to Kasteelkop, (–AC), 29 Sept 1996, *Mostert, L. 219* (NBG); Hermanus, 12.87 km E of Hermanus, near the road to Standford (–AD), 24 Sept 1956, *Dahlgren R. and Peterson B. 425* (K, NBG); NW lower slopes of Klein Hangklip Mountain, 25 Sept 1965, *Dahlgren, R., and Strid, A. 3318* (NBG); ca 0.80 km E of Betty's Bay Nature Reserve, 07 Oct 1965, *Dahlgren, R., and Strid, A. 3530* (NBG), Betty's Bay, SE of Nature Reserve, 07 Oct 1965, *Dahlgren, R., and Strid, A. 3525* (NBG); 3.22 km E of Groot Hangklip Mountains, ca 1.61 km N of the seacoast, 31 Oct 1965, *Dahlgren, R., and Strid, A. 3935* (NBG); Fernkloof Nature Reserve- Hermanus, 04 Oct 1974, *Orchard, E.R. 260* (NBG), 24 Oct 1982, *Burman 1024* (BOL); "Stinkhoutbos" E facing hills leading to Stinkhoutbos, 21 Oct 1984, *Van Wyk, C.M. 2093* (NBG); 6.44 km SE of Gansbaai, near the road to Elim (–CB), 02 Oct 1956, *Dahlgren, R. & Peterson, B. 558* (BOL); Franskraal east of Gansbaai, 19 Oct 1975, *Oliver, I. s.n.* (NBG); Bredasdorp near Elim, on the mountain behind Koude Rivier (–DA), 04 Dec 1896, *Schlechter, F. 9623* (BOL); Inhoek farm, Hagelkraal, 30 Oct 1989, *Stirton, C.H. 11331* (NBG); Brandfontein (–DD), 13 Oct 1951, *Esterhuysen, E.E. 19109 (*BOL).

21. ***Aspalathus ternata*** (Thunb.) Druce, in Rep. Bot. Soc. Exch. Club Br. Isl. 4: 606 (1916 publ. 1917); Adamson & Salter, Fl. Cape Penins. 476 (1950); R.Dahlgren in Op. Bot. Soc. Bot. Lund 4: 274 (1960); ibid. 9 (1): 146 (1963); in Bot. Notiser 121: 519 (1968); Fl. S. Afr. 3,6: 59 (1988). ≡ *Galega ternata* Thunb., *Prodr.* 2: 134 (1800); *Fl. Cap.* ed. 2: 601 (1823). ≡ *Achyronia ternata* (Thunb.) Kuntze, *Rev. Gen. Pl.* 1: 157 (1891). Type: in herbarium Thunberg, without locality details (UPS, lecto. designated by Dahlgren (1988)).

Aspalathus purpurea Eckl. & Zeyh., *Enum. Pl. Afric. Austr.* 2: 201 (1836); Benth. in Hook., *Lond. J. Bot.* 7: 608 (1848); Harv., *Fl. Cap.* 2: 109 (1862). ≡*Achyronia purpurea* (Eckl. & Zeyh.) Kuntze, *Rev. Gen. Pl.* 1: 157 (1891). Type: South Africa. Western Cape, near Bergvalley, without date, *Ecklon, C.F. & Zeyher, L.P. 1379* (S-G, lecto.—image!; designated by Dahlgren (1988); S—image!, SAM—image!, isolecto.).

Aspalathus purpurascens E.Mey., *Comm. Pl. Afr. Austr.* 1: 44 (1836); Walp., *Linnaea* 13: 486 (1839); Benth. in Hook., *Lond. J. Bot.* 7: 608 (1848) (as syn. of *A. purpurea*).

Paraspalathus purpurascens (E.Mey.) Presl, *Bot. Bemerk.* 129 (1845). Type: South Africa. Western Cape, Piketberg Div., 'Zwartbartkraal' between Berg Valley and Lange Valley, Nov 1828, *Drège, s.n.* (S-G, lecto. —image! designated by Dahlgren (1988); HBG—image!, MO—image!, isolecto.).

Aspalathus ferruginea Benth. in Hook., *Lond. J. Bot.* 7: 607 (1848); Harv., *Fl. Cap.* 2: 109 (1862). Type: South Africa. Western Cape, without precise locality and date, *Desmanet, s.n.* (BM, lecto.—image! designated by Dahlgren (1988)).

Erect, reseeding shrub, 0.4–1.0 m tall. *Branches* slender, spreading; young shoots shortly puberulous. *Leaves* trifoliolate, clustered along seasonal shoots; leaf base tubercle-based, extending into a short spinelet (1–4 mm long). *Leaflets* oblanceolate to spathulate, pale green, densely covered with adpressed silvery sericeous hairs; central leaflet 5.5–18 ×

1.4–2.0 mm, slightly larger than laterals; lateral leaflets 6–15 × 1.4–2.0 mm, obtuse at apex. *Inflorescences* unifloral or bifloral, borne in the leaf axils, sparsely distributed along branches. *Flowers* pale yellow, becoming purple with age; sessile. *Bracts* linear-lanceolate, 4–8 × 0.6–1.0 mm, sericeous, bracteoles 4–12 × 0.4–0.8 mm, linear, sericeous. *Calyx* spherical to urceolate, 7.5–12.0 mm long, densely sericeous; teeth triangular to linear, 1–11 mm long, green, with woolly pilosity. *Standard petal* broadly ovate, 7.5–12.0 × 8.5–10.5 mm, abaxially densely silky-sericeous; claw 3.0–7.5 mm. *Wing petals* ovate, 7.5–9.5 × 3.5–5.8 mm, covered in woolly hairs; petal sculpturing lamellate, with thin, parallel intercostal folds; claw 2.2–6.0 mm long. *Keel petals* 5.8–7.5 × 4.0–5.5 mm, hairy on blade; claw 4.0–5.0 mm, adnate to the staminal tube. *Androecium* 8.0–12.5 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 4.0–6.0 mm long; ovary hairy; 8 ovules. *Pods* and seeds not seen (Supplementary Figure B16).

Diagnostic characters. *Aspalathus ternata* is closely similar to *A. dasyantha*, with both species sharing an erect, reseeding habit and pale-yellow flowers that turn purplish with age. However, *A. ternata* differs in having longer, slender leaflets, with the central leaflet reaching up to 18 mm in length, versus shorter and broader leaflets (≤ 5 mm long) in *A. dasyantha*. The leaf indumentum in *A. ternata* is densely adpressed and silvery-sericeous, imparting a lustrous sheen to the foliage, versus tomentose hairs concentrated at branch tips and a sparser to glabrous surface on older leaves in *A. dasyantha*, which gives a coarser and more uneven texture overall.

Distribution and habitat. *Aspalathus ternata* is endemic to the lowland coastal plain of the Western Cape, South Africa, ranging from the Cape Flats and Cape Peninsula in the south, northward through Malmesbury, Mamre, and Hopefield, to the lowlands west of Clanwilliam and the Piketberg region (Fig. 18C). Its range spans the Cape Town, Simonstown, Malmesbury, Hopefield, Piketberg, and Clanwilliam Divisions, with scattered occurrences in the Wuppertal foothills. The species is primarily associated with coastal fynbos on marine-derived sandy soils, including Leipoldtville Sand Fynbos [FFd 2], Hopefield Sand Fynbos [FFd 3], and Atlantis Sand Fynbos [FFd 4], occasionally occurring on low gravelly rises or sandy flats. It occupies open, well-drained, seasonally dry lowland habitats, often exposed to coastal winds, reflecting an affinity for nutrient-poor sandy substrates within the coastal foreland belt.

Flowering. September–December.

Etymology. The specific epithet *ternata* is derived from the Latin *ternata*, meaning "in threes," and likely refers to the trifoliolate leaf arrangement observed on the upper parts of the branches. However, this condition is typical of nearly all species in the genus *Aspalathus*, and thus the name does not reflect a uniquely diagnostic character. Its original application under the genus *Galega* explains the use of a more generalised descriptor. The synonyms *purpurea* and *purpurascens* refer to the purplish colouration of ageing flowers, which typically persists in herbarium specimens. In contrast, the light-yellow colouration seen at anthesis often fades upon drying. The name *ferruginea* (meaning "rust-coloured") likewise alludes to the reddish-brown tones that develop in older floral parts.

Conservation Status. *Aspalathus ternata* is a widespread but declining species, with an estimated Extent of Occurrence (EOO) of 27,880 km^2 and an Area of Occupancy (AOO) of 676 km^2. Despite significant habitat loss exceeding 60 %, particularly within lowland sand fynbos, the species remains locally common across its range, including in the Cape coastal lowlands and the Sandveld, where it has been observed to readily colonise fallow lands (Raimondo et al., 2009). Based on habitat loss trends, a population reduction of approximately 20 % over the past 45 years (three generations) is inferred. While previously assessed as Vulnerable [VU A2abc; B1ab (i, ii, iii, iv, v)] (Raimondo et al., 2009), current metrics suggest a Near Threatened to Vulnerable status, with ongoing threats from habitat transformation and fragmentation.

Specimen examined.

South Africa. Western Cape. **3218 (Clanwilliam):** 8 km W of Clanwilliam along the road to Van Puttens Vlei, (–AB), 02 Nov 1956, *Dahlgren, R. & Peterson, B. 998* (LD, K); 9.7 km W by North of Graafwater, (–BA), 15 Oct 1958, *Acocks, J.P.H. 19771* (BOL); North slopes of Nardouwsberg, De Hangen, (–BB), 27 Sept 1969, *Esterhuysen, E.E. 32252* (BOL); Olifants River Mountains, Annex Swartboskraal South of Bo-Swartberg, (–BC), 10 Oct 1984, *Bean, P. 1501* (BOL); 19.3 km SE of Paleisheuwel, near the road to Grey's Pass, 29 Oct 1956, *Dahlgren, R. & Peterson, B. 919* (S); Between Greys Pass and Graafwater, without date, *Leipoldt, C. 3165* (BOL, K); Between Hopefield and Langebaan, (–CC), without date, *Unknown Sub-BH20732* (BOL); West of Eendekuil and E of Zebrakop, near the road to Piketberg, Het Kruis, 29 Oct 1956, *Dahlgren, R. & Peterson, B. 903* (BOL, LD); Piketberg Div., 4.8 km SE of Eendekuil along the Piketberg-Citrusdal road, (–DB), 27 Oct 1965, *Dahlgren, R. & Strid, A. 3853* (LD). **3219 (Wuppertal):** 20.9 km from Piketberg village along the road to Citrusdal, (–CA), 27 Oct 1956, *Dahlgren, R. & Peterson, B. 880* (LD). **3318 (Cape Town):** NE of Langebaan, (–AA), 10 Oct 1933, *Pillans, N. 7002* (BOL); Langebaan Country Estate, plot 12, N section near summit, (–AA), 25 Oct 2012, *Boucher, C. 7903* (NBG); Hopefield Div., 3.2 km SE of Hopefield, (–AB), 28 Nov 1965, *Dahlgren, R. & Strid, A. 4343* (LD); Near Hopefield, (–AB), Oct 1943, *Leighton, F.M. 452* (BOL); 11.2 km N of Darling along the road to Hopefield, (-AD) 21 Oct 1956, *Dahlgren, R. & Peterson, B. 771* (BOL, LD); 6.4 km from Hopefield near the road to Malmesbury, (–AD), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 777* (LD, K); Mamre, near Groen Kloof, (–AD), without date, *Bolus, H. Sub-BH3779b* (BOL); Philadelphia, roadside – Mamre road, (–AD), 08 Oct 1945, *Wasserfall, E. 1001* (K); Cape Flats, 41.8 km S of Darling, (–BA), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 756* (BOL, LD); Rondevlei, (–BC),14 Oct 1977, *Esterhuysen, E.E. 34721* (BOL); Near Bokbaai, (–CB), 15 Sept 1940, *Esterhuysen, E.E. 3821* (BOL); Malmesbury Div., Cape Flats, 3.2 km S of Mamre, (–CB), 30 Aug 1965, *Dahlgren, R. & Strid, A. 2769* (LD); Malmesbury Flats, 16 km SSW of Malmesbury, (–CB), 13 Nov 1965, *Dahlgren, R. & Strid, A. 4101* (LD); 11.2 km N of Darling along the road to Hopefield, (–CB), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 773* (LD, K); Yserplaats, (–CD), 28 Oct 1938, *Salter, T. 7782* (BOL); Yserplaats, (–CD), 28 Oct 1938, *Salter, T. 7782* (BOL); Raapenburg, (–CD), without date, *Guthrie, F. Sub-BH7060* (BOL); Cape Town, Flats towards Maitland Bults, without date, *Guthrie, F. 258* (BOL); Mowbray, Raapenberg, (–CD), without date, *Guthrie, F. 204* (BOL); Milnerton Golf Links, (–CD), 30 Nov 1935, *Salter, T.M. 5692* (BOL); Cape flats, Riet Valley, without date, *Zeyher, C.L.P 421* (BOL); Cape flats, (–CD), without date, *Zeyher, C. s.n.* (S); On the Cape flats near Durban road, (–CD), Nov 1888, *MacOwan, P. Sub-HNAA955* (BOL); Cape Flats 41.8 km SSE of Darling, (–DA), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 757* (BOL, LD, K); Cape Flats, 4.8 km S of the crossroad Cape Town -Malmesbury and Darling, E of Blouwbergstrand, 21 Oct 1956, *Dahlgren, R. & Peterson, B. 754* (BOL, LD); Paardeberg between Wellington and Malmesbury, (–DB), 03 Oct 2011, *Nicolson, G. 558* (NBG); Bosmans Dam, Bothasig, (–DC), 27 Oct 1965, *Esterhuysen, E.E. 31320* (BOL); Vygeskraal Farm, (–DC), 03 Nov 1897, *Wolley-Dod, A. 3410* (BOL); Cape Flats, 1.6 km E of Goodwood, National Road to Paarl, (–DC), 24 Oct 1956, *Dahlgren, R. & Peterson, B. 788* (LD); 3 km N of Aurora, Grootkloof Farm, north of entrance road, (–DC), 09 Oct 2013, *Helme, N.A. 8348* (NBG); Cape flats near Durban Road Station, without date, *Bolus, H. Sub-BH3779* (BOL). **3418 (Simonstown):** South of Retreat Station, (–AB), 19 Nov 1933, *Salter, T. 4003* (BOL, K); Constantia, (–AB), without date, *Zeyher, C. 385* (S); 0.4 km SSE of Retreat Station, (–AB), 24 Oct 1920, *Pillans, N.S. 4009* (BOL); South of Retreat, (–AB), 25 Oct 1938, *Salter, T.M. 7775* (BOL); Dassenberg, (–BC), 22 Sept 1992, *Daines, A. 1807* (BOL). 3419 (Caledon): near Melkbosch, (–BD), 21 Dec 1934, *Adolf, H. s.n.* (S). **3419 (Caledon):** Ganzekraal Nature Reserve, 23 Feb 2021, *Mdayi, N. 7808* (NBG).

22. ***Aspalathus tridentata*** L., *Sp. Pl.* edn 2: 712 (1753); *Sp. Pl.* edn 2: 1002 (1763); Lam., *Encycl.* 1: 292 (1783); Thunb., *Prodr.* 2: 126 (1800); Diss. Bot. *Aspalathus* 1: 9 (1802); Willd., *Sp. Pl.* 3: 964 (1803); Thunb., *Fl. Cap.* edn 2: 575 (1823); DC., *Prodr.* 2: 142 (1825); E.Mey. *in Linnaea* 7: 162 (1832); Benth. *in Hooker, Lond. J. Bot.* 7: 606 (1848); Harv., *Fl. Cap.* 2: 108 (1862); Adamson & Salter, *Fl. Cape Penins.* 475 (1950). ≡ *Achyronia tridentata* (L.) Kuntze, *Rev. Gen. Pl.* 1: 157 (1891). ≡ *Aspalathus tridentata* subsp. *tridentata* R.Dahlgren, in *Op. Bot. Soc. Bot. Lund* 4: 213 (1960), *ibid.* 9 (1): 144 (1963); *Bot. Notiser* 121: 518 (1968); *Fl. S. Afr.* 3,6: 37 (1988). Type. South Africa, without date, '*Aspalathus tridentata*' in the herbarium Burmann, *Burmann, s.n.* (G, lecto. —image! here designated).

Aspalathus argentea L. var. *glabriuscula* E.Mey., *Commentarii* 1: 43 (1836). Type: South Africa. Western Cape, Vanrhynsdorp Div., Giftberg, *Drège s.n.* (S-G, lecto. —image!, designated by Dahlgren (1988); HAL—image!, K—image!, MO—image!, isolecto.).

Aspalathus pilosa L., *Mant.* 262 (1767). ≡ *Paraspalathus pilosa* (L.) Presl, *Bot. Bemerk.* 129 (1845). *Nomina dubia*; identity uncertain; possibly referable to *A. tridentata* (no original material located in LINN).

Note: No original material was cited explicitly by Linnaeus in the protologue, and Dahlgren (1988) designated a specimen from the Thunberg Herbarium at UPS as a neotype, noting the absence of original material. However, according to ICN Art. 9.19(b), a neotype must be superseded when original material is discovered. The specimen G00807183 in the Burmann herbarium at Geneva qualifies as original material, as it originates from a collection Linnaeus had access to and used in his classification. The specimen bears a pre-Linnaean name and is consistent with the protologue in *Species Plantarum*, both in morphology and in geographic origin (*Caput Bonae Spei*). It is here designated as the lectotype of *A. tridentata*, thereby superseding the neotype designated by Dahlgren.

Erect, reseeding shrublet, 0.9–1.5 m tall. *Branches* woody, brown, longitudinally splitting, moderately branched; young branches pale greenish-red, subglabrous. *Leaves* trifoliolate; nodes often tubercle-based, occasionally absent. *Leaflets* linear-lanceolate, 3–8 × 0.5–1.5 mm, acute, acuminate or obtuse, weak and flexible; surfaces sparsely silvery-sericeous, veins indistinct; lower branch leaflets in basal clusters, lanceolate, smaller (2–4.8 × 0.5–1 mm), sparsely sericeous. *Inflorescences* terminal, umbelliform, bearing 4–15 flowers. *Flowers* lemon yellow; sessile. *Bracts* lanceolate, ovate, or suborbicular, 7–12 × 2–6 mm; bracteoles linear, 5–10 × 0.6–4.8 mm. *Calyx* narrowly campanulate, 8.5–10.5 mm long, pale, sericeous; teeth triangular with pointed apices, 4–10 × 0.5–2.3 mm, recurved. *Standard petal* narrowly ovate, acute, 8–12 × 3–6.5 mm, sericeous on the back and margins; claw 2.5–4.5 mm long. *Wing petals* elongate, 6–12 × 1.5–3.8 mm, sericeous across most surfaces; petal sculpture lamellate, with two rows of transcostal folds extending toward the lower petal region, and minute intercostal folds near the basal upper region extending almost to the apex; claw 3.5–5.5 mm long. *Keel petals* lunate, 5–10 × 2.3–3.8 mm, hairy externally; claw 2.6–5.5 mm long. *Androecium* 9.5–14 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 5–10 mm long, ovary 3.5–4 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 6. *Pods* and seeds not seen. Refer to Dahlgren (1988) Fig. 4.

Diagnostic characters. *Aspalathus tridentata* is morphologically similar to *A. staurantha*, with which it shares an erect, reseeding habit, and terminal umbelliform inflorescences of lemon-yellow flowers. They differ, however, in that *A. tridentata* is a taller, more robust shrub (0.9–1.5 m vs. 0.4–1.0 m) with larger, flexible linear-lanceolate leaflets (3–8 × 0.5–1.5 mm vs. 2.6–7.5 × 0.7–1.5 mm, elliptic to narrowly oblanceolate), and more floriferous inflorescences (4–15 vs. 2–6 flowers) with longer bracts and wing petals (bracts 7–12 mm; wings up to 12 mm). By contrast, *A. staurantha* is a smaller, more gracile species with sparsely branched, slender stems and compact, few-flowered inflorescences.

Distribution and habitat. *Aspalathus tridentata* is widely distributed in the southwestern Cape Region of South Africa, extending from the Cape Peninsula and Cape Flats in the west, northward into the Cederberg and Pakhuis Pass, and eastward through the Caledon, Bredasdorp, Swellendam, Riversdale, and Heidelberg districts to the southern Cape interior near Mossel Bay (Fig. 19A). Outlying records also document its occurrence north of the Cape Fold Belt in the Botterkloof Pass area of the Calvinia District, indicating a disjunct northern extension into the western margin of the Succulent Karoo. The species occupies lowland to lower montane habitats, generally at mid- to low elevations, where it grows in sandy or loamy soils derived from diverse substrates, including Table Mountain Sandstone, Bokkeveld shales, and weathered Malmesbury formations. It is most frequently associated with fynbos vegetation, particularly Peninsula Sandstone Fynbos [FFs 9], Kogelberg Sandstone Fynbos [FFs 11], and Cederberg Sandstone Fynbos [FFs 4], and is also encountered within renosterbos–fynbos ecotones and drier, open shrublands on well-drained, often seasonally dry slopes and flats.

Flowering. October–December.

Etymology. The species epithet *tridentata* is derived from Latin *tri-* ("three") and *dentatus* ("toothed") and refers to the three-toothed stipules (*stipulis tridentatis*) described in the original protologue by Linnaeus (*Sp. Pl.* 1753). These stipules are typically mucronate, forming one of the diagnostic characters he used alongside the trifoliolate, lanceolate leaves and capitate flower heads.

Conservation status. *Aspalathus tridentata* is a widespread species in the southwestern Cape, with an Extent of Occurrence (EOO) of approximately 49,022 km^2, qualifying it for Least Concern (LC) under IUCN Red List Criterion B1. However, its Area of Occupancy (AOO), calculated at 440 km^2, falls within the Endangered (EN) threshold under Criterion B2. Despite the restricted AOO, the species is locally common across much of its range and shows no evidence of significant population decline, fragmentation, or continuing habitat loss. The most recent assessment supports a conservation status of Least Concern, aligning with the earlier national Red List evaluation by Raimondo et al. (2009), which described the species as "widespread, common and not declining". Given its broad ecological amplitude, frequent post-fire regeneration, and occurrence across several protected areas, no immediate conservation actions are deemed necessary. However, ongoing monitoring of lowland populations is recommended due to increasing agricultural and urban pressure in some parts of its range.

Specimen examined.

South Africa. NORTHERN CAPE. **3119 (Calvinia):** On top of Botterkloof Pass, (–CD), 31 Oct 1956, *Dahlgren, R. & Peterson, B. 960* (BOL, K, LD), 31 Oct 1956, *Dahlgren, R. & Peterson, B. 3205* (LD). WESTERN CAPE. **3218 (Clanwilliam):** 8 km W of Clanwilliam along the road to Van Putten's Vlei, (–AB), 02 Nov 1956, *Dahlgren, R. & Peterson, B. 999* (K); 11.7 km S of Redelinghuis, (–AD), 17 Nov 1970, *Acocks, J. 24438* (K); Cederberg Mountains, Bos Kloof east of Clanwilliam, (–BB), 02 Nov 1956, *Dahlgren, R. & Peterson, B. 995* (BOL, K); Top of Grey's Pass, along the road to Paleisheuwel, (–CB), 20 Sept 1965, *Dahlgren, R. & Strid, A. 3230* (K, LD); Upper part of Versfeld Pass, (–DA), 27 Oct 1965, *Dahlgren, R. & Strid, A. 3859* (LD), 01 Nov 1956, *Dahlgren, R. & Peterson, B. 989* (LD); NE of Stawelklip, (–DC), 27 Oct 1965, *Dahlgren, R. & Strid, A. 3873* (LD). **3219 (Wuppertal):** Just east of highest point Pakhuis Pass, (–AA), 21 Oct 1956, *Dahlgren, R. & Peterson, B. 956* (BOL, LD); Elandskloof, Middelberg southeast of Citrusdal, (–CA), 16 Sept 1976, *Hugo, L. 565* (K). **3318 (Cape Town):** Rondebosch, University Grounds, (–CD), 24 Nov 1932, *Levyns, M. 4170* (BOL); Cape Town, flats towards Maitlands Bults, (–CD), 29 Nov 1889, *Guthrie, F. 299* (BOL); North base of Zandberg, (–DA), 27 Oct 1938, *Pillans, N.S. 8585* (BOL). **3319 (Worcester):** Mountain above Porterville, (–AA), without date, *Loubser, J. 1039* (BOL); East of Porterville, (–AA), 05 Nov 1956, *Dahlgren, R. & Peterson,*

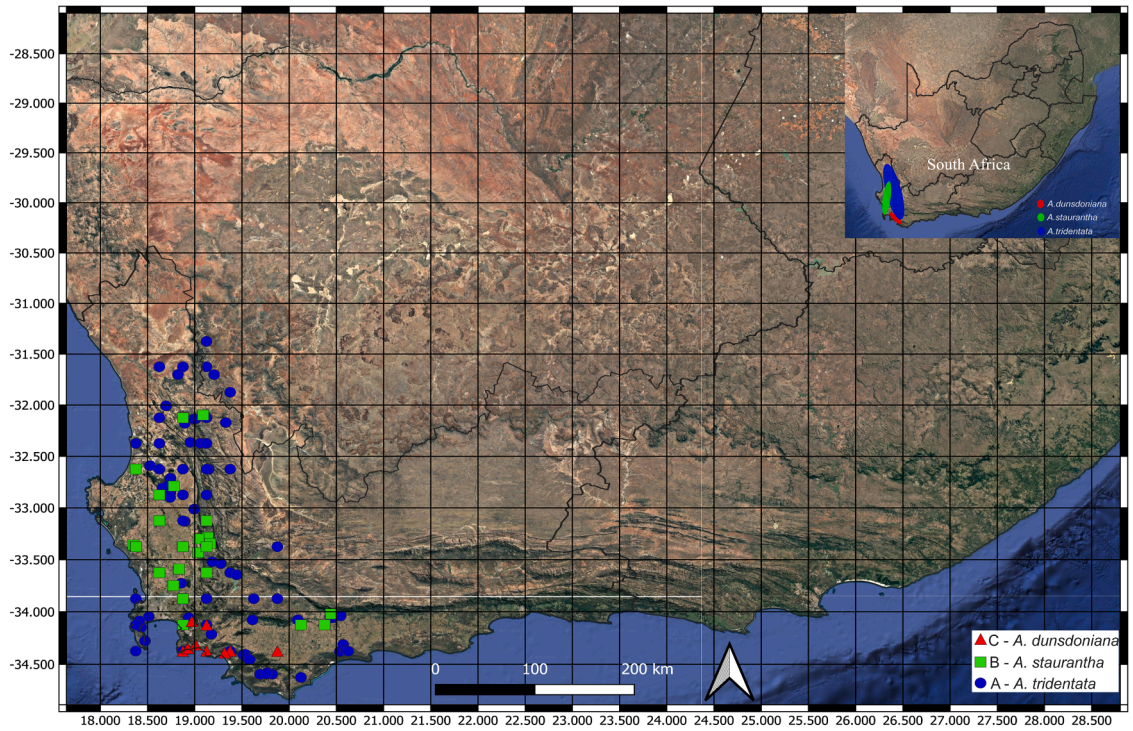

Fig. 19. Known distribution of *Aspalathus tridentata* (A), *A. staurantha* (B), & *A. dunsdoniana* (C) based on verified herbarium specimens and field records. Each point represents a confirmed locality.

B. 1062 (BOL, LD); Skurweberg near Robertson, (–DD), 04 Nov 1957, *Levyns, M. 9804* (BOL). **3418 (Simonstown):** Above West Lake Golf Club, (–AB), 24 Nov 1938, *Salter, T. 7861* (BOL); Klaver Valley, (–AB), 16 Dec 1938, *Salter, T. 7948* (BOL); Nek between Simonsberg and Swartzkop, (–AB), 16 Jan 1896, *Wolley-Dod, A. 509* (BOL); Near Simonstown Golf Club, (–AB), 08 Sept 1938, *Salter, T. 7614* (BOL); Constantia, near Tokai, (–AB), without date, *Wolley-Dod, A. 470* (BOL); By Oatlands, (–AB), 09 Sept 1891, *Wolley-Dod, A. 2904* (BOL); Teeberg, (–AB), 02 Dec 1932, *Salter, T. 2891* (BOL); Redhill, (–AB), 04 Dec 1935, *Levyns, M. 5317* (BOL); 1.6 km W of Judas Peak, S part of Peninsula, (–AD), 11 Nov 1965, *Dahlgren, R. & Strid, A. 4064* (LD). **3419 (Caledon):** On the road between Houwhoek and Palmiet River, (–AA), without date, *Bolus, H. s.n.* (BOL); Palmiet River, Elgin, (–AA), without date, *Stokoe, T.P. 8417* (BOL); Top of Shaw's Mountain Range at head of Shaw's Mountain Pass, (–AD), 29 Oct 1965, *Dahlgren, R. & Strid, A. 3898* (LD); Middle NW slopes of hill W of Elim, (–DA), 16 Nov 1965, *Dahlgren, R. & Strid, A. 4216* (LD).

23. ***Aspalathus staurantha*** Eckl. & Zeyh., *Enum. Pl. Afr. Austr.,* 2: 202 (1836); Walp. in *Linnaea* 13: 503 (1839); Benth. in *Hooker, Lond. J. Bot.* 7: 607 (1848); Harv., *Fl. Cap.* 2: 109 (1862). ≡ *Aspalathus tridentata* subsp. *staurantha* (Eckl. & Zeyh.) Dahlg., *Op. Bot. Soc. Bot. Lund* 4: 225 (1960). Type: South Africa, Western Cape, Malmesbury (3318): 'Zwartland', (–BD), *Ecklon & Zeyher 1383* (S-G, lecto—image!, designated by Dahlgren (1988); S—image!, SAM—image!, US—image!, isolecto.).

Erect, reseeding shrub, 0.4–1.0 m tall. *Branches* slender, cylindrical, subglabrous, reddish-brown towards nodes and older internodes; young branches sympodial, pubescent, light green. *Leaves* trifoliolate, basal leaf tubercles often extending into short spinelets 1.5–2.5 mm long. *Leaflets* elliptic to narrowly oblanceolate, small, 2.6–7.5 × 0.7–1.5 mm, acute, entire, sparsely hairy. *Inflorescences* terminal, umbelliform, bearing 2–6 flowers. *Flowers* lemon yellow, sessile. *Bracts* short, orbicular, ca. 5 × 1.5 mm; bracteoles narrowly oblong, 2.5–10 × 0.3–1.1 mm. *Calyx* campanulate, sericeous, 5.5–10 mm long; teeth 3–5 × 0.7–1.8 mm, triangular, recurved. *Standard petal* broadly ovate, 5.5–8.5 × 4.3–5 mm, claw 2–3.6 mm long. *Wing petals* oblong, 6.0–7.8 × 2.5–3 mm, acute, broadened and slightly clasping, sericeous; claw 2.5–3 mm long; petal sculpturing lamellate, with four rows of short transcostal folds and basal intercostal ridges. *Keel petals* lunate, 4.5–5.5 × 2.2–3.2 mm, upcurved, bluntly acute; broad, with a pronounced articulation zone; sericeous on the outer surface; claw 3–3.5 mm long, hairy on the outer surface. *Androecium* 7–9 mm long; filaments united except at the tips, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate. *Pistil* 6 mm long; ovary and basal style sericeous; style curved apically; ovules 6. *Pods* and seed not seen. Refer to Dahlgren (1988) Fig. 4.

Diagnostic characters. *Aspalathus staurantha* is readily identified by the frequent presence of small spine-like tubercles at the leaf bases. It also has an erect, much-branched habit (0.4–1.0 m tall), with rigid, woody stems. This taxon is morphologically similar to *A. tridentata*; full diagnostic details are provided under *A. tridentata* (no. 22).

Distribution and habitat. *Aspalathus staurantha* is concentrated mainly in the lowlands and lower mountain slopes of the southwestern Cape, with its range spanning from Somerset West to Tulbagh (Fig. 19B). It has been recorded from multiple administrative divisions, including Bellville, Somerset West, Stellenbosch, Caledon, Swellendam, Paarl, Worcester, Malmesbury, Piketberg, Tulbagh, and Ceres. The species typically occurs on clayey soils derived from Malmesbury Shale or weathered Bokkeveld Series rocks and is most commonly associated with Swartland Shale Renosterveld [FRs 9]. It grows in mixed renosterbos–fynbos scrub vegetation, often occupying ecotonal areas and disturbed sites within the shale-derived lowlands.

Flowering. October–December.

Etymology. The epithet *staurantha* is derived from the Greek *stauros* ("cross") and *anthos* ("flower"), meaning "cross-shaped flower." This name is well chosen, as the flowers in each small inflorescence, often numbering four, are typically arranged in a horizontally radiating pattern, giving the head a distinct, cross-like appearance when viewed from above.

Conservation status. *Aspalathus staurantha* has an estimated Extent

of Occurrence (EOO) of 26,538 km^2 and an Area of Occupancy (AOO) of 96 km^2. While the AOO meets the threshold for Endangered (EN) under IUCN Criterion B2, the broader EOO places it within the Near Threatened (NT) range. The species is locally common within its range and occurs in renosterveld–fynbos transitional vegetation on clay-rich soils of the Malmesbury and Bokkeveld Groups, often on lower mountain slopes and foothills. The most recent national Red List assessment by Raimondo et al. (2009) categorised this taxon as Least Concern, citing its relatively broad range and lack of evident population decline or habitat loss. However, updated spatial analyses suggest that a reassessment under current IUCN guidelines may be warranted, and continued monitoring is recommended.

Specimen examined.

South Africa. Western Cape. **3218 (Clanwilliam):** Piketberg Mountains, Goedverdacht, (–DC), 10 Oct 2009, *Muasya, A.M. & Stirton, C.H. 4654* (BOL), *Muasya, A.M. & Stirton, C.H. 4677* (BOL); SW of Piketberg, Wittewater 148, 1.5 km NW of Moravia church, (–DC), 18 Oct 2018, *Helme, N.A. 9376* (NBG). **3219 (Wuppertal):** Pakhuis Pass Dist., between Calvinia and Clanwilliam, (–AA), 29 Apr 2000, *Nienaber, E.P. 765* (PRE); Elandsberg Private Nature Reserve, (–BB), 20 Oct 2014, *Euston-Brown, D. 4776* (NBG), 30 Sept 1978, *Burgers, C.J. 1236* (NBG). **3318 (Cape Town):** Moorreesburg, Kleinburg, (–BA), 23 Nov 1970, *Acocks, J. 24504* (PRE); Klipfontein (–BC), without date, *Zeyher, C.L.P. 422* (BOL); Hermon, (–BD), without date, *Pillans, N.S. 7017* (BOL); Lower E part of Riebeek Pass, Riebeek Kasteel Mountain, (–BD), 20 Feb 1966, *Dahlgren, R. & Strid, A. 4969* (NBG); Klipheuwel, (–DA), without date, *Bolus, H. 16745* (BOL); Paardeberg between Wellington and Malmesbury, (–DB), 01 Nov 2011, *Nicholson, G. 717* NBG); 45 km between Cape Town and Malmesbury, (–DC), 21 Nov 1984, *Grobbelaar, N. 2891* (PRE); Paarl Div., Joostenberg Kloof, (–DD), 16 Oct 1975, *Esterhuysen, E.E., 34409* (BOL); Hercules Pillar, (–DD), 06 Oct 1947, *Barker, W. 4849* (BOL). **3319 (Worcester):** Great Winterhoek Mountains, near Saron, (–AA), without date, *Stokoe, T. 8416* (BOL);Twenty-Four River Mountains above Porterville, (–AA), 24 Oct 1949, *Esterhuysen, E.E. 16206* (BOL); Gouda, (–AC), 30 Oct 1956, *Loubser, J. 791* (BOL); Witteberg, (–AC), without date, *Zeyher, C. 34* (BOL); NW of Vöelvlei near the crossroad E of Gouda, (–AC), *Dahlgren, R. Peterson, B. 1184* (LD); Romans River, (–AC), 09 Nov 1946, *Compton, R.H. 18703* (BOL); West of Nieuwe Kloof SW of Tulbagh, (–AC), 16 Oct 1956, *Dahlgren, R. & Peterson, B. 674* (BOL, LD); Franschhoek, (–CC), 19 Nov 1896, *Schlechter, F. 9283* (BOL). **3418 (Simonstown):** Below Sir Lowry's Pass, (–BB), 31 Oct 1946, *Parker, R.N. 4142* (BOL); Foot of Sir Lowry's Pass, (–BB), 19 Nov 1944, *Leighton, F. 826* (BOL). **3420 (Bredasdorp):** Sonderend River, (–AA), 19 Oct 1894, *Schlechter, F. 5616* (BOL); Sonderend River Mountain, E end WNW of Stormsvlei above farm Hammerdale, (–AA), 27 Oct 1998, *Oliver, E. 11196* (NBG); 4.8 km E of Swellendam, (–AB), 13 Aug 1965, *Dahlgren, R. & Strid, A. 2377* (NBG), 01 Nov 1965, *Dahlgren, R. & Strid, A. 3949* (LD).

24. ***Aspalathus dunsdoniana*** Alston ex R.Dahlgren, in *Op. Bot. Soc. Bot. Lund* 4: 184 (1960); *ibid.* 9 (1): 142 (1963); *Fl. S. Afr.* 3,6: 34 (1988). Type: South Africa, Western Cape. *Sine loco* (from the British Empire Exhibition), 11 June 1925, Unknown collector (K, holo!)

Erect, reseeding shrub, 1–2 m tall. *Branches* woody, densely lanate, appearing white due to long, silky hairs, sparsely branched; young branches equally woolly sericeous. *Leaves* trifoliolate, with axillary short-shoots arising early on long-shoots, including hairs up to 15 mm covering the entire plant. *Leaflets* narrowly elliptic to lanceolate, soft in texture, with acute tips; long-shoot leaflets 10–15 × 1.5–3 mm, densely long-sericeous on both surfaces; short-shoot leaflets slightly smaller, 8–10 × 1–2 mm, white-sericeous. *Inflorescence* capitate, composed of 10–25 flowers. *Flowers* bright yellow, lacking nectar guides. *Pedicel* short 0.5–1 mm long. *Bracts* flat, linear, 9–11 × 1.5 mm, thin-textured, and densely covered with long, silky white hairs; bracteoles linear to subfiliform, 8–12 × 0.5–1 mm, long-sericeous. *Calyx* tubular, 5.5–9 mm long, uniformly long-sericeous; teeth linear-setaceous, 0.5–0.9 mm, weak and tapering. *Standard petal* elliptic to subcircular, 4.5–8.0 × 3.8–7 mm, obtuse, densely sericeous on the abaxial surface; claw 3–4.5 mm long. *Wing petals* oblong to narrowly elliptic, 5.3–9 × 1.9–3.5 mm, long-sericeous on most surfaces; petal sculpturing lamellate, with indistinct basal folds and faint longitudinal ridging; claw 2.5–4.5 mm. *Keel petals* lunate, 3–5 × 1.8–3 mm, slightly concave at the apex, long-sericeous apically; claws 2.5–4.0 mm long. *Androecium* 5.3–6 mm long, filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil*4 mm long; ovary superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 2. *Pods* ovate, convex pod, 6 × 3 mm, sericeous, 1-seeded. Refer to Dahlgren (1988) Fig. 3.

Diagnostic characters. *Aspalathus dunsdoniana* is most similar to *A. salicifolia* in its trifoliolate leaves, capitate inflorescences, and yellow flowers lacking nectar guides. It can, however, be readily distinguished by its taller, more openly branched habit (1–2 m) versus the shorter, densely branched stature (0.4–1.0 m) of *A. salicifolia*. The indumentum is prominently white and lanate, composed of long silky hairs up to 15 mm, whereas in *A. salicifolia* it is densely grey-tomentose. The leaflets of *A. dunsdoniana* are narrowly elliptic to lanceolate, larger (10–15 × 1.5–3 mm) and densely long-sericeous, versus shorter (5–9 × 2–3 mm), oblanceolate, and partly tomentose leaflets of *A. salicifolia*. Bracts and bracteoles are elongate and filiform (9–11 × 1.5 mm) in *A. dunsdoniana*, versus shorter and broader (6–7 × 0.5–1.5 mm) in *A. salicifolia*. Floral structures also differ: *A. dunsdoniana* bears smaller, more sericeous standards and keels with shorter stamens and pistil, while *A. salicifolia* has larger, less hairy flowers. In addition, *A. dunsdoniana* possesses only two ovules per ovary, compared with three to five in *A. salicifolia*.

Distribution and habitat. *Aspalathus dunsdoniana* is restricted to the westernmost parts of the Caledon Division, with confirmed records from the Hottentots Holland, Kogelberg, and Palmiet River Mountains, extending eastwards to the Klein River Mountains (Fig. 19C). It typically occurs in moist kloofs at elevations of 500–750 m, where it grows in Kogelberg Sandstone Fynbos [FFs 11] and Overberg Sandstone Fynbos [FFs 12] on well-drained mountain slopes within montane fynbos vegetation.

Flowering. August–April.

Etymology. The specific epithet *dunsdoniana* honours an individual named Dunsdon, who is believed to have been associated with material collected for the British Empire Exhibition in 1925. A duplicate specimen of this collection, housed at Kew, was annotated *Aspalathus dunsdoniana* by A.H.G. Alston, although the name was never formally published at that time. It was later retained as a manuscript name by G. Garabedian during her early taxonomic but unpublished work on the genus and ultimately validated by Rolf Dahlgren (1960).

Conservation status. Previously assessed as Least Concern due to its occurrence in well-protected montane habitats (Raimondo et al., 2009), *Aspalathus dunsdoniana* was considered stable within its restricted range (EOO then estimated at 1,571 km^2). However, updated spatial analyses reveal an Extent of Occurrence (EOO) of 1,606.714 km^2 and an Area of Occupancy (AOO) of 36.000 km^2, both of which meet the thresholds for Endangered (EN) status under IUCN Red List criteria B1ab(iii)+2ab(iii). While the species remains associated with montane fynbos in relatively undisturbed habitat, its limited distribution and small number of known locations necessitate precautionary conservation attention.

Specimens examined.

South Africa. WESTERN CAPE. **3418 (Simonstown):** Southern Hottentots Holland Mountains, Kogelberg State Forest, ca 2 km from second house of Oude Bosch, at the second water fall, (–BB), 22 Sept 1992, *Kruger, I.J. 793* (PRE); 03 Jun 1970, *Boucher, C. 1278* (NBG, PRE); North east slopes of Voorberg, (–BB), 24 Feb 1971, *Boucher, C. 1458* (NBG); Platberg, (–BB), 20 Jun 1969, *Boucher, C. 382* (NBG); Mountains near Betty's Bay, (–BD), 28 Jan 1947, *Esterhuysen, E.E. 13687* (BOL); Near Betty's Bay, near Hangklip, (–BD), 10 Apr 1936, *Stokoe, T.P. 8973*

(BOL); Near Palmiet River Mouth, (–BD), without date, *Stokoe, T.P. 9595* (BOL); *ibid.,* 28 Apr 1922, *Stokoe, T.P. 432* (PRE). **3419 (Caledon):** Nuweberg Forest Reserve, along the path in Buchu Kloof (R.Z.E. Kloof), (–AA), 27 Mar 1977, *Esterhuysen, E.E. 34555* (BOL); Nuweberg State Forest, Kogelberg slopes of Dwarsrivier Mountains, above jeep track from Highlands, (–AA), 12 Oct 1989, *Le Maitre, D.C. 573* (NBG); Nuweberg State Forest, on hiking trail towards Boesmanskloof, (–AA), 04 May 1981, *Taylor, H.C. 10302* (NBG); Kleinmond, (–AC), without date, *Stokoe, T.P. 9596* (BOL), Apr 1926, *Stokoe, T.P. 1321* (NBG); Babylon's Tower, (–AD), *Stokoe, T.P. 7374* (BOL); Vogelgat, Black Rock Stream, (–AD), 03 Jan 1987, *Williams, I. 3771* (NBG); Vogelgat, Washington Ridge, (–AD), 04 Mar 1987, *Williams, I. 3788* (NBG); Vogelgat, Base of Zig Zag, (–AD), 12 July 1987, *Williams, I. 3797* (NBG); Betty's Bay, Harold Porter Botanical Reserve, (–BD), 18 Mar 1964, *Fisher, D.K. 19* (NBG), 28 Jan 1947, *Esterhuysen, E.E. 13687* (PRE); Hangklip Estate, (–BD), 02 Apr 1946, *Porter, H.N. s.n.* (NBG).

Unknown locality. Without date, *Pillans, N.S. Sub-BH18391* (BOL).

25. ***Aspalathus salicifolia*** R.Dahlgren, in *Op. Bot. Soc. Bot. Lund* 4:187 (1960); *ibid.* 9 (1): 142 (1963); *Fl. S. Afr.* 3,6: 35 (1988). Type: South Africa, Western Cape, Worcester (3319): Paarl Div., French Hoek Peak, steep southern slopes at c. 1000 m, (–CC), 06 Jun 1954, *Esterhuysen, E.E. 22932* (BOL, holo! LD—image!, iso.).

Erect, reseeding shrub, 0.4–1.0 m tall. *Branches* woody, grey-barked, densely grey-woolly tomentose; young branches thick, short, and stout. *Leaves* trifoliolate; axillary short-shoots soon developing in their axils. *Leaflets* oblanceolate, 5–9 × 2–3 mm; axillary leaflet sprouts smaller, 3–4 × 1.3–2 mm; leaflets soft, flexible, acute to acuminate, grey-sericeous or partly tomentose. *Inflorescence* capitate; heads comprising 4–20 flowers. *Flowers* light yellow, lacking nectar guides. *Pedicel* <0.5 mm long. *Bracts* linear, 6–7 × 0.5–1.5 mm, weak, sericeous; bracteoles similar to bracts, 4–6 × 0.5–0.7 mm. *Calyx* tubular; 6.6–8.0 mm long, tomentose to sericeous; teeth narrowly triangular, 2–3 × 1–2 mm, weak, sericeous. *Standard petals* circular, 6.5–7 × 6.5–7.5 mm, obtuse, sericeous on abaxial surface; claw 2–2.8 mm long. *Wing petals* narrowly triangular-ovate, 6.0–6.5 × 2.6–3.5 mm, sericeous on most parts; petal sculpturing lamellate, with intercostal rows of minute folds on basal third; claw 3.3–4 mm long. *Keel petals* lunate, 4.3–5.0 × 2.5–3.8 mm, upper margin nearly straight, sericeous on lower half; 3–4.5 mm long. *Androecium* 7.5–8.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 4.5–5.5 mm long; ovary ~3 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 3–5. *Pods* and seeds not seen. Refer to Dahlgren (1988) Fig. 3.

Diagnostic characters. *Aspalathus salicifolia* closely resembles *A. dunsdoniana* in floral structure, indumentum type, and general morphology. It differs, however, in having a shorter, denser indumentum, smaller floral parts, and a higher ovule number (3–5 per ovary vs. 2 in *A. dunsdoniana*). A detailed comparative diagnosis is provided under *A. dunsdoniana* (no. 24).

Distribution and Habitat. Endemic to the Western Cape Province, South Africa. Restricted to the Hottentots Holland and Franschhoek mountain ranges, from Sir Lowry's Pass (Somerset West Division) to the Franschhoek Valley (Paarl Division). Occurs on upper mountain slopes and in moist montane kloofs at elevations of 800–1000 m or higher (Fig. 20A). Found in Kogelberg Sandstone Fynbos [FFs 11] and Hawequas Sandstone Fynbos [FFs 10] vegetation types, within montane fynbos habitat.

Flowering. January–February and July.

Etymology. The specific epithet *salicifolia* derives from Latin,

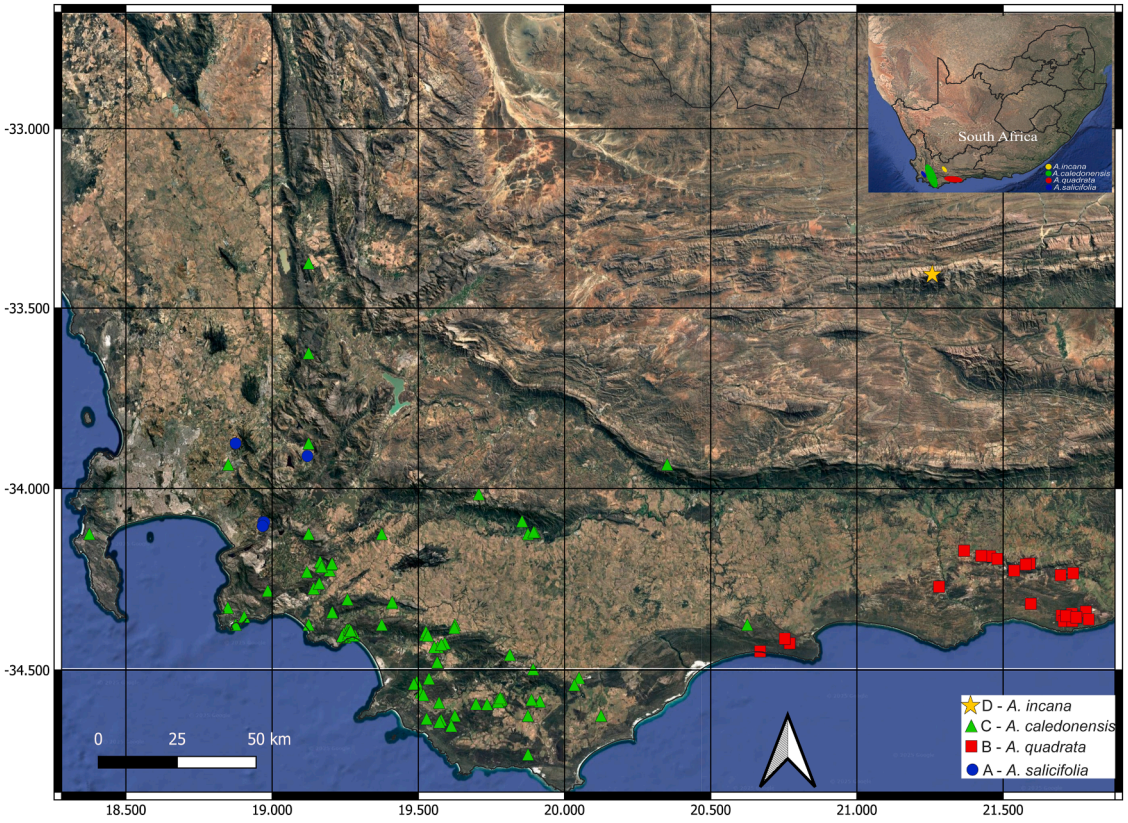

Fig. 20. Known distribution of *Aspalathus salicifolia* (A), *A. quadrata* (B), *A. caledonensis* (C), & *A. incana* (D) based on verified herbarium specimens and field records. Each points represents a confirmed locality.

meaning "willow-leaved," indicating that the leaflets of *Aspalathus salicifolia* resemble those of certain *Salix* (willow) species (Dahlgren, 1988).

Conservation status. The species has a current extent of occurrence (EOO) of 274 km^2 and an area of occupancy (AOO) of 20 km^2, based on recent distribution data. Although it is known from a restricted range and is rarely collected, it occurs in remote, high-altitude habitats that face minimal immediate threats. As a result, it does not meet the criteria for any of the threatened categories under the IUCN Red List and is therefore assessed as Least Concern (Moore et al., 2021). However, due to its narrow distribution and habitat specificity, it is nationally recognised as Rare under South Africa's conservation assessment framework.

Specimens examined.

South Africa. Western Cape. **3318 (Cape Town):** Jonkershoek Forest Reserve, along the Panorama path, above the valley at head of Riviersonderend Rivier Course, (–AA), 25 Apr 1982, *Esterhuysen, E.E. 35775* (BOL); Jonkershoek, along the Panorama path, between rain Guage turn-off nek overlooking Nieuweberg, (–AA), 11 Dec 1977, *Esterhuysen, E.E. 34819* (BOL); *ibid.,* 06 Sept 1981, *Esterhuysen, E.E. 35655* (BOL); Kloof on S side of Banhoek Peak, (–DD), 13 Jan 1948, *Esterhuysen, E.E. 14367* (BOL, K). **3319 (Worcester):** Paarl Div., Fransch Hoek Peak, (–CC), 06 Jun 1954, *Esterhuysen, E.E. 22932* (BOL, LD). **3418 (Simonstown):** Hottentots Holand hiking trail, between Rooskraalberg and Valleiberg, (–BB), 01 Jan 1977, *Esterhuysen, E.E. s.n.* (BOL); Mountain's south of Sir Lowry's Pass, (–BB), *Stokoe, T.P. 17847* (BOL); Valleiberg, at head of Langklippie Kloof Nature Reserve, (–BB), 23 Apr 1961, *Esterhuysen, E.E. 28995* (BOL). **3419 (Caledon):** Between Viljoen's Pass and Somerset Sneeuwkop, (–AA), 03 Oct 1983, *Stokoe, T.P. 7032* (BOL); Pilaarkop, RZE Mountain near Lindeshof, (–BB), 07 Mar 1971, *Esterhuysen, E.E. 32577* (BOL, K).

South Africa. Unknown locality, *Stokoe, T.P. 6115* (BOL).

26. ***Aspalathus quadrata*** L.Bol. in *Ann. Bolus Herb.* 1: 186 (1915); R. Dahlgren, in *Op. Bot. Soc. Bot. Lund* 4: 294 (1960); *ibid.* 9(1): 140 (1963); *Fl. S. Afr.* 3,6: 55 (1988). Type: South Africa, Western Cape, Riversdale Div., Albertinia Commonage, May 1914, *Muir, J. 1328* (BOL, holo! PRE—image!, SAM— image!, iso.).

Decumbent, resprouting, spreading shrublet, 0.6 m tall. *Branching* woody, sparsely branched, with seasonal short shoots; young branches minutely puberulous. *Leaves* trifoliolate, bases without tubercles. *Leaflets* flat, oblong-lanceolate, 2.5–3.0 × 0.6–1.0 mm, apex acute, margins involute; short sericeous. *Inflorescence* unifloral, borne on lateral short-shoots along the ends of branches. *Flowers* dark yellow, turning orange with age; solitary but several per flowering stem. *Pedicel* very short or obscured <1 mm long. *Bracts* oblong, 3.0–3.5 × 0.7–1.3 mm, resembling vegetative leaflets, puberulous, bracteoles linear, 2.0 × 0.3 mm, puberulous. *Calyx* cylindrical-campanulate, 6.0–6.5 mm long, short sericeous to tomentulose; teeth rounded-ovate, green, tube yellowish; 1.0–2.0 mm long, evenly sericeous. *Standard petals* rectangular-elliptic, 6.5–7.0 × 5.3–6.5 mm, apex obtuse or shallowly notched, sericeous on the back; standard with faint radiating reddish nectar guides, claw 4.5–5.0 mm long. *Wing petals* oblong, 5.8–6.5 × 2.5 mm; claw 4.3–4.5 mm long; petal sculpturing lamellate, comprising 5–8 closely spaced, parallel, longitudinal ridges restricted to the basal third of the wing petal's dorsal surface, folds are shallow and linear, aligned along the main axis of the petal, and do not extend beyond the midline. *Keel petals* lunate, 4.8–5.5 × 2.5–3.0 mm, upper margin slightly convex; sericeous; claw 4.3–4.5 mm. *Androecium* 9.5 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* 6.5 mm long; ovary 2.5–2.8 mm long, superior, narrowly oblong, basal style sericeous; ovules 2. *Pod* triangular-ovate, 3.5 × 2.0 mm, sericeous, usually concealed within the persistent calyx; dehiscent. Seeds not seen. Refer to Dahlgren (1988) Fig. 9.

Diagnostic characters. *Aspalathus quadrata* is morphologically similar to *A. oblongifolia* and *A. caledonensis,* with which it shares trifoliolate leaves, solitary axillary flowers borne on short lateral shoots, and similarly sized floral structures. However, *A. quadrata* differs from *A. oblongifolia* by its decumbent, resprouting growth form (vs. erect and reseeding), the absence of prominent tubercle-based leaf insertions, and its smaller, oblong-lanceolate leaflets (2.5–3.0 × 0.6–1.0 mm) with involute margins and short sericeous indumentum (vs. flat, narrowly oblong leaflets 3.0–6.0 mm long, arising from distinct spur-like tubercles and often glabrescent). The calyx of *A. quadrata* is cylindrical-campanulate with short, rounded-ovate teeth (1.0–2.0 mm), contrasting with the ovate-triangular calyx teeth of *A. oblongifolia* (2.5–3.0 mm). It also has more consistently sericeous bracts and bracteoles resembling reduced leaflets.

Distribution and habitat. *Aspalathus quadrata* is endemic to the Albertinia region of the Western Cape, South Africa (Fig. 20B). It is confined to lowland fynbos vegetation, where it grows on well-drained sandy soils at elevations around 300 m. The species is characteristic of the Albertinia Sand Fynbos [FFd 9], a vegetation type dominated by nutrient-poor coastal sands supporting a diverse assemblage of low shrubland species typical of the southern Cape coastal plain.

Flowering. May–July.

Etymology. The specific epithet *quadrata* is derived from the Latin *quadratus*, meaning "square" or "quadrate." It likely refers to the species' distinctive short, broad calyx lobes, which appear truncate or nearly square in outline (Dahlgren, 1960).

Conservation status. *Aspalathus quadrata* is a range-restricted species endemic to the Albertinia region of the Western Cape. It was previously assessed as Vulnerable [VU B1ab(iii,v)+2ab(iii,v)] by Raimondo et al. (2009), based on an estimated Extent of Occurrence (EOO) and Area of Occupancy (AOO) below 2,000 km^2, with observed declines in habitat quality and population size. At the time, the primary threats included habitat degradation from unsustainable thatch harvesting and alien plant invasion, with fewer than 10 known locations and no protection within formally conserved areas (Raimondo et al., 2009). Recent reassessment indicates a continued decline, with updated metrics placing the species under greater risk. The current EOO is 1,520 km^2 and AOO is 88 km^2, both within the threshold for Endangered under IUCN Red List Criteria [EN B1ab(iii,v)+2ab(iii,v)].

Specimens examined.

South Africa. Western Cape. **3420 (Bredasdorp):** De Hoop, Hamerkop, (–CA), 19 Mar 1985, *Van Wyk, C.M. 2251* (PRE); Potteberg estates, (–BC), 16 Mar 1978, *Hugo, L. 1170* (NBG, PRE); Potberg, Neck between Elandspad and Koenskraal, (–BC), 16 Mar 1977, *Thompson, M. F. 3451* (NBG). **3421 (Riversdale):** Albertinia, (–BA), 20 Apr 1956, *Werner, H.F. 34* (BOL); Albertinia, eastern edge of town, just north of railway, (–BA), 01 May 2007, *Helme, N.A.4647* (NBG); West of Albertinia, (–BA), 19 Mar 1975, *Oliver, E.G.H. 5697* (NBG, PRE); South of Albertinia, (–BC), 21 Mar 1975, *Oliver, E.G.H. 5750* (PRE); Ystervarkfontein farm, on border between Ystervarkfontein and Gouriqua, (–BC), 25 Mar 1991, *Vlok, J.H.J. 2460* (NBG, PRE); Ystervarkpunt (Gouriqua), (–BC), 03 July 1987, *Willemse, D. 386* (NBG).

27. ***Aspalathus caledonensis*** R.Dahlgren, in *Op. Bot. Soc. Bot. Lund* 9 (1): 273 (1963), *Bot. Notiser* 121: 517 (1968), *Fl. S. Afr.* 3,6: 55 (1988). Type: South Africa. Western Cape. Caledon Div (3419): 16 miles W of Caledon, in Houw Hoek Pass, (–AA), 27 Aug 1956, *Dahlgren, R. & Peterson, B. 244* (LD, holo.—image! BOL!, C—image!, K!, iso).

Aspalathus argentea sensu R.Dahlgren, *Op. Bot. Soc. bot. Lund* 4: 284 (1960). ≡ *Paraspalathus argentea* (L.) Presl., non *A. argentea* L. (1753), *nomen confusum.*

Erect, reseeding shrublet 0.2–1.2 m tall. *Branches* woody, rod-like, often consist of a single upright stem covered by floriferous axillary short shoots. *Leaves* trifoliolate, leaf base inconspicuous; axillary short shoots develop early. *Leaflets* lanceolate, central leaflet 4.0–7.0 × 1.5–2.0 mm, larger than the laterals; lateral leaflets 3.0–5.0 × 1.5–2.0 mm, reduced; apex acute to obtuse, weak in texture, silvery sericeous, with indistinct venation. *Flowers* unifloral, borne on lateral short-shoots, arranged spike-like along 20–30 cm of the stem, subtended by whorl of

leafy bracts resembling reduced leaflets; uniformly light yellow, marked with longitudinal dark streaks, nectar guides. *Pedicels* short, 0.5 mm long. *Bracts* narrowly lanceolate, flat, ~3.0 mm long, finely sericeous; bracteoles narrowly linear to subfiliform, 3.5–6.0 mm long × 3.0 mm wide, sericeous. *Calyx* campanulate, 6.0–9.0 mm long, densely sericeous with dark reddish pigmentation; teeth narrowly triangular, 1.5–2.0 mm wide, soft and flexible in texture. *Standard petal* ovate to circular, 8.0–11.0 × 7.6–9.8 mm, apex rounded, abaxially sericeous; claw 3.0–4.5 mm long. *Wing petals* obliquely ovate, 7.5–9.5 × 3.4–5.3 mm; claw 4.0–4.5 mm long; petal sculpturing lamellate and pocketed, following a central longitudinal fold with additional minute basal folds. *Keel petals* 6.5–8.0 × ~3.8 mm, lunate, slightly upcurved; claw 4.5–5.5 mm long. *Androecium* 10.0–12.0 mm long filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Pistil* length not exceeding 12 mm; ovary superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 2. *Pod* triangular-lanceolate, ~10 mm long, densely sericeous. Seeds not seen (Supplementary Figure B17).

Diagnostic characters. *Aspalathus caledonensis* closely resembles *A. oblongifolia* but differs in having denser silvery sericeous pubescence, and calyx teeth that are narrowly triangular (vs ovate-triangular in *A. oblongifolia*). A detailed comparison is provided under the diagnostic characters of *A. oblongifolia* (no. 16).

Distribution and habitat. *Aspalathus caledonensis* is confined to the mountains and hills of the Caledon and Bredasdorp Divisions, extending from Houwhoek in the west to Potberg Mountain in the east, and from near Riviersonderend in the north to Agulhas in the south (Fig. 20C). It typically occurs on white or grey sandy or gravelly soils derived from Table Mountain Sandstone, within montane and coastal fynbos vegetation. Populations are found within Kogelberg Sandstone Fynbos [FFs 11], Overberg Sandstone Fynbos [FFs 12], and Potberg Sandstone Fynbos [FFs 17], reflecting its ecological preference for well-drained, nutrient-poor sandstone substrates characteristic of the southern coastal mountain belt.

Flowering. August–December.

Etymology. The specific epithet *caledonensis* refers to the town of Caledon in the Western Cape, where the type specimen was originally collected (Dahlgren, 1960). The species is commonly known as the "Caledon Capegorse", reflecting both its geographic origin and its placement within the *Sericeae* group, informally referred to as "capegorses." The species was previously known under the synonym *Aspalathus argentea*, a name derived from the Latin *argenteus*, meaning "silvery, " in reference to the plant's densely sericeous indumentum, which remains a diagnostic feature of this taxon.

Conservation Status. *Aspalathus caledonensis* is listed as Least Concern by Raimondo et al. (2009), based on its local abundance and lack of immediate threats. Although range-restricted, with an extent of occurrence (EOO) previously estimated at 6,444 km^2, recent data indicate an expanded EOO of 17,209.5 km^2 (VU threshold) and an area of occupancy (AOO) of 276 km^2 (EN threshold). Despite qualifying under certain IUCN criteria, the species remains common and stable within its habitat and is not currently considered threatened.

Specimen examined.

South Africa. Western Cape**. 3319 (Worcester):** Du Toits Kloof, (–CA), 04 Dec 1980, *Stirton, C.H. 8458* (PRE). **3419 (Caledon):** near Houw Hoek, (–AA), without date, *Bolus, H. 9934* (BOL); Near Houw Hoek, (–AA), Aug 1888, *MacOwan, P 925* (GH); Houw Hoek, 3.2 km W of Bot River, (–AA), 24 Oct 1956, *Dahlgren, R. & Peterson, B. 835* (BOL, LD); 4.83 km W of Bot River in Houw Hoek Pass, (–AA), 23 Sept 1956, *Dahlgren, R. & Peterson, B. 400* (LD); 'Willemshof' Farm, ca 11.27 km NE of Hermanus, (–AA), *Dahlgren, R. & Strid, A. 3897* (LD); 16 km E of Grabouw along National Road, Houw Hoek Passs, (–AA), 27 Sept 1956, *Dahlgren, R. & Peterson, B. 466* (LD); around Houw Hoek, (–AA), without date, *MacOwan, P. Sub-HNAA925* (BOL); Top of Houw Hoek Pass, (–AA), 06 Aug 1965, *Dahlgren, R. & Strid, A. 2065* (LD, NBG); Bot River, (–AA), 18 Sept 1949, *Wilman, A. 789* (BOL); Houw Hoek Pass, (–AA), 03 Sept 1924, *Compton, R.H. 3429* (BOL); Houw Hoek, (–AA), 16 Sept 1962, *Levyns, M. 11333* (BOL); 25.74 km W of Caledon, in Houw Hoek Pass, (–AA), 27 Aug 1956, *Dahlgren, R. & Peterson, B. 244* (BOL); Knoflokskraal and Klein Houw Hoek, without date, *Ecklon, C.F. & Zeyher, C. L. s.n.* (S); Riviersonderend Mountains, slopes near Sonderend, (–AB), 20 Nov 1955, *Esterhuysen, E.E. 25349* (LD); Hermanus, (–AC), without date, *Paterson, F.M. 33* (BOL); Hermanus, Fernkloof Nature Reserve, (–AD), 21 Aug 1982, *Burman, C. 872* (BOL); Hermanus, Fernkloof Nature Reserve, 11 Sept 1983, *Burman, C. 1214* (BOL); Fernkloof Nature Reserve, above Mountain, (–AD), 04 Sept 1979, *Williams, 2825* (PRE); Hermanus Mountain, (–AD), 23 Sept 1956, *Dahlgren, R. & Peterson, B. 417* (LD); Top of Hermanus Mountain, (–AD), 26 Sept 1965, *Dahlgren, R. & Strid, A. 3345* (LD); N side of Shaw's Mountain near top of Shaw's Mountain Pass, (–AD), 29 Oct 1965, *Dahlgren, R. & Strid, A. 3907* (LD); 4.83 km NW of Mossel Rivier, slopes of Klein River Mountain, (–AD), 07 Oct 1965, *Dahlgren, R. & Strid, A. 3555* (LD); Southern Overberg, Paardekloof 475, northern foothills of Babylonstoren Mountains, (–AD), 18 Aug 2006, *Turner, R.C. 1544* (NBG); Honingsklip Farm, Bot River on R43, (–AD), 01 Sept 2003, *Abrahamse, S. 3* (NBG); 3.5 km NW of Riviersonderend, Big Tigerberg 184, (–BB), 22 Feb 2016, *Helme, N.A. 8698* (NBG); Riviersonderend Mountains, near Sonderend, (–BB), 20 Nov 1955, *Esterhuysen, E.E. 25349* (BOL); Top of Kopjes N of Elandskloof Mountain, Zondagskloof, (–BC), 26 Sept 1956, *Dahlgren, R. & Peterson, B. 459* (LD), *Dahlgren, R. & Peterson, B. 460* (LD); In mountain pass between Bredasdorp and Elandskloofsberg, (–BC), 07 Aug 1965, *Dahlgren, R. & Strid, A. 2138* (LD); Bredasdorp Mountain, upper part of range above the town Bredasdorp just S of the top of the range, (–BC), 29 Sept 1965, *Dahlgren, R. & Strid, A. 3388* (NBG, PRE); ca 8.85 km SSE of Paviesvlei crossroads, SW of Koueberge, (–BC), 29 Sept 1965, *Dahlgren, R. & Strid, A. 3411* (LD, NBG); in the mountains between Caledon and Elim, (–BD), without date, *Bolus, H. 6795* (BOL); Nuweberg Forest Reserve, Eastern Block, North slopes, Groenlandberg near Drostersnes, (–BD), 15 Aug 1969, *Kruger, F. J. 823* (NBG); Near Koude Rivier, (–DA), 25 Oct 1956, *Dahlgren, R. & Peterson, B. 866b* (LD); 8.04 km NE of the crossroads S of Koude River SE of Paviesvlei, (–DA), 24 Sept 1956, *Dahlgren, R. & Peterson, B. 430* (LD), 1.61 km W of Baardscheerdersbosch, (–AD), 16 Oct 1965, *Dahlgren, R.& Strid, A. 3683* (LD); Middle and upper S slopes of Zoetanysberg above 'Asfontein' Farm, (–DB), 12 Dec 1965, *Dahlgren, R. & Strid, A. 4534* (LD); Cape Agulhas National Park, on lower slopes above the Bergplaas, (–DB), 03 Sept 2014, *Maphanga, Z. ZID6AG* (NBG); De Hoop-Potberg Nature Reserve, (–DB), 06 Sept 1978, *Burgers, C. 1071* (NBG); Brandfontein, (–DD), 13 Oct 1951, *Esterhuysen, E.E. 19109A* (BOL).

28. ***Aspalathus incana*** R.Dahlgren, *Op. Bot. Soc. Bot. Lund* 4: 179 (1960); *ibid.* 9 (1): 150 (1963); *Fl. S. Afr.* 3,6: 47 (1988). Type: South Africa, Western Cape, Ladismith (3320): Swartberg, upper slopes below Toorkop [Toverkop], (–AA), 23 Apr 1951, *Esterhuysen, E.E. 18532* (BOL, holo!).

Decumbent or procumbent, resprouting shrublet, up to 1 m tall. *Branches* herbaceous, yellowish, slender, and sparingly branched; young branchlets densely tomentose, particularly towards the tips. *Leaves* trifoliolate, not tubercle-based, with long internodes 5–10 mm long. *Leaflets* oblanceolate, 4.5–12 × 2.5–4.5 mm, soft-textured, acute, evenly clothed in grey to white tomentose (non-sericeous) pubescence. *Inflorescences* unifloral or bifloral, terminal on seasonal shoots. *Flowers* lemon yellow, lacking nectar guides. *Pedicel* 1–2 mm long. *Bracts* caducous, not observed, villous, continuous with the calyx, bracteoles subfiliform, <2.5 mm long, weak, with spreading hairs. *Calyx* campanulate, ~7 mm long, densely woolly; teeth linear-oblong, 3–5 × 1.5–2 mm, acute, woolly. *Standard petal* ovate, 10 × 9.5 mm, densely tomentose on the abaxial surface; claw ~1 mm long. *Wing petals* oblong, 7 × 3.5 mm, sparsely hairy; petal sculpturing lamellate with basal intercoastal folds; claws ~1 mm long. *Keel petals* lunate, 8.5 × 3.5 mm,

fused, enclosing the reproductive structures. *Androecium* up to10 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube delicate, pale green, and slightly exserted beyond the corolla. *Gynoecium* consisting of a single carpel; pistil ~7 mm long, ovary ~4 mm long, superior, narrowly oblong, long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; ovules 2. *Pod* up to 8 mm long, obliquely lanceolate, densely white-woolly, one-seeded. Refer to Dahlgren (1988) Fig. 6.

Distribution and habitat. *Aspalathus incana* is endemic to the Klein Swartberg Mountains of the Western Cape, South Africa (Fig. 20D). It occurs at high elevations, typically above 1,250 m, where it is associated with shale bands on sandstone slopes. The species is found within Swartberg Altimontane Sandstone Fynbos [FFs 31] and transitional areas of Central Inland Shale Band vegetation. Its habitat is characterised by rocky substrates, cool montane conditions, and a high degree of endemism. *Aspalathus incana* appears to favour ecotonal zones between shale and sandstone, where it forms part of a specialised fynbos community.

Flowering time. April.

Etymology. The specific epithet *incana* is derived from the Latin word *incanus*, meaning "grey," and refers to the characteristically pale, tomentose indumentum of the leaves.

Diagnostic characters. *Aspalathus incana* is morphologically similar to *A. singuliflora*, sharing solitary, terminal flowers, lemon-yellow corollas, long internodes below floral nodes (6–10 mm), and dense indumentum on the calyx and corolla. It differs from *A. singuliflora* by its decumbent, resprouting habit versus the suberect, thorn-like habit of *A. singuliflora*; larger, oblanceolate leaflets (4.5–12 × 2.5–4.5 mm) versus smaller leaflets (~1.8 × 0.7 mm); and grey to white tomentose indumentum versus the silvery-sericeous covering in *A. singuliflora*. Additionally, *A. incana* has a more robust floral structure overall, whereas *A. singuliflora* is diminutive and apparently less florally developed.

Conservation Status. *Aspalathus incana* is a range-restricted, high-altitude fynbos species known from a very small area within the Western Cape Province of South Africa. It is confined to a few isolated montane populations within protected provincial conservation areas. Despite this protection, its area of occupancy (AOO) is estimated at 4 km^2, and its extent of occurrence (EOO) is calculated as 0 km^2, both of which fall well below the threshold for Critically Endangered under IUCN Criterion B. The species is vulnerable due to its dependence on a narrow altitudinal band and specific habitat conditions, which makes it sensitive to ecological fluctuations, inappropriate fire regimes, and long-term climate change. While no current habitat degradation is observed, the species is at risk from stochastic events due to its extremely limited range. Red List category: Critically Endangered (CR) Criteria: CR B1ab (iii)+2ab(iii).

Specimen examined.

South Africa. Western Cape. **3321 (Ladismith):** Klein Swartberg, north-east slopes of Koueverldberg, (–BC), 19 Nov 2005, *Helme, N.A. 3744* (NBG).

29. ***Aspalathus albicephala*** Du Preez & C.H.Stirt., in *S. Afr. J. Bot.* 169: 174 (2024). Type: South Africa, Western Cape, Vanrhynsdorp (3118): along road on Farm 6/374 Giftberg, edge of tea lands, (–BC), 19 Nov 2021, *Du Preez, B.* 968 (BOL, holo! K, NBG, PRE, iso.).

Erect, rounded, reseeding shrub up to 0.8 m tall. *Branches* woody, tawny brown becoming grey with age, longitudinally fissured, flaky, and glabrescent; young branches beige, tomentose. *Leaves* trifoliolate, fascicled or solitary on seasonal shoots, leaf bases woody. *Leaflets* flat with revolute margins and a prominent midvein abaxially, oblanceolate to obovate, 2.0–5.0 × 1.0–1.8 mm, apex acute, sericeous-pubescent. *Inflorescences* terminal, compact capitulum on seasonal shoots, comprising 10–20 flowers. *Flowers* white, lacking nectar guides, subsessile. *Pedicel* <0.5 mm long. *Bracts* trullate-lanceolate, 4.5–8.0 mm long, shortly petiolate, silky-plumose; bracteoles linear-subulate, 6.0–7.0 mm long, shortly petiolate, silky-plumose. *Calyx* campanulate, 7.0–8.5 mm long, beige, silky-plumose; tube flushed pink in the upper portion; teeth filiform-subulate, 3.0–4.0 mm long, pink to red, persistent and prominent in fruiting stage. *Standard petal* ovate, 8.5–10.5 × 4.0–6.0 mm, apex rounded, back silky-plumose; claw 3.0–4.0 mm long, oblong, glabrous. *Wing petals* oblong, 5.5–7.0 × 2.0–3.0 mm, glabrous; petal sculpturing lamellate, extending along the upper half of the blade for approximately three-quarters of its length; claw 3.0–3.5 mm long. *Keel petals* obovate-lunate, 5.0 × 2.0–2.2 mm, fused, apex rounded, with a small basal pocket; externally silky-plumose; claw 3.0–4.0 mm long. *Androecium* 8.5–9.0 mm long; filaments fused into a complete staminal tube with dorsal slit and apically unfused tips; anthers 10, with 6 shorter, basifixed and 4 longer, dorsifixed, dehiscing longitudinally. *Pistil* 9.0–9.5 mm long; ovary superior, narrowly oblong, densely silver-pubescent, style straight to rostrate-recurved, glabrous throughout; stigma elongate, forward-directed, with apical receptive surface. *Pods* and seed not seen (Supplementary Figure B18).

Diagnostic characters. *Aspalathus albicephala* is morphologically similar to *A. virgata*, sharing general leaf morphology and growth form, and the two taxa may occur sympatrically. It differs from *A. virgata* by its white flowers versus bright yellow flowers; longer calyx (7.0–8.5 mm) with filiform-subulate teeth versus shorter calyx (4.5–9 mm) with narrowly triangular lobes; and a rounded, densely branched habit versus the slender, sparsely branched, virgate form of *A. virgata*.

Distribution and habitat. *Aspalathus albicephala* is currently known only from a single site on the southern edge of the Gifberg Mountain in the Western Cape (Fig. 21A). It occurs on flat to gently sloping terrain in deep, coarse, sandy soils derived from sandstone. The species is associated with Cederberg Sandstone Fynbos [FFs 4] and, although it may occur more widely in similar nearby habitats, current collections indicate a very restricted range, suggesting it may be a local endemic.

Flowering. October–November.

Etymology. The specific epithet *albicephala* is derived from the Latin *albus*, meaning "white," and the Greek *kephale*, meaning "head." It refers to the distinctive white, capitate inflorescence characteristic of this species, a feature that is rare within the genus *Aspalathus* (Du Preez & Stirton, 2024).

Conservation status. *Aspalathus albicephala* is currently known only from its type locality on the southern slopes of Gifberg Mountain, with an estimated extent of occurrence (EOO) of less than 1 km^2 and an area of occupancy (AOO) of approximately 4 km^2. It appears to be a habitat specialist, likely historically more widespread across the southern portion of Gifberg. However, much of this area has undergone extensive transformation in recent decades due to the expansion of rooibos (*Aspalathus linearis*) cultivation. Targeted surveys are urgently needed to determine whether additional subpopulations persist in adjacent suitable habitats. Based on current data and following IUCN Red List criteria (IUCN, 2012), the species qualifies as Critically Endangered under criteria CR A2ac; B1ab (i, iii, iv, v); B2ab (ii, iii, iv, v); C1.

30. *Aspalathus acocksii* (R.Dahlgren) R.Dahlgren, in *Op. Bot. Soc. Bot. Lund* 9 (1): 270, 143 (1963); *Fl. S. Afr.* 3,6: 34 (1988). ☰ *A. quinquefolia* L. subsp. *acocksii* R.Dahlgren in *Op. Bot. Soc. Bot. Lund* 4: 250 (1960). Type: South Africa, Western Cape, Clanwilliam (3218): Pakhuis Pass, (−BB) 02 Oct 1948, *Acocks 15045* (PRE, holo.—image!, BOL!, LD [2-sheets] —image!, iso).

Erect, reseeding shrub, 0.8–2.0 m tall. *Branches* woody, rigid, slender; young branches densely and shortly tomentose, becoming glabrescent with age. *Leaves* trifoliolate, arising from a convex, densely tomentose, tuberculate leaf base; axillary short shoots develop early. *Leaflets* flat, linear-oblong to oblanceolate, thick-textured, 3.5–8.0 × 1.0–2.3 mm, apex acute to subobtuse, margins entire; both surfaces densely covered with silvery sericeous indumentum; leaflets on lower branches smaller, 2.3–3.5 × 0.5–1.4 mm. *Inflorescences* terminal,

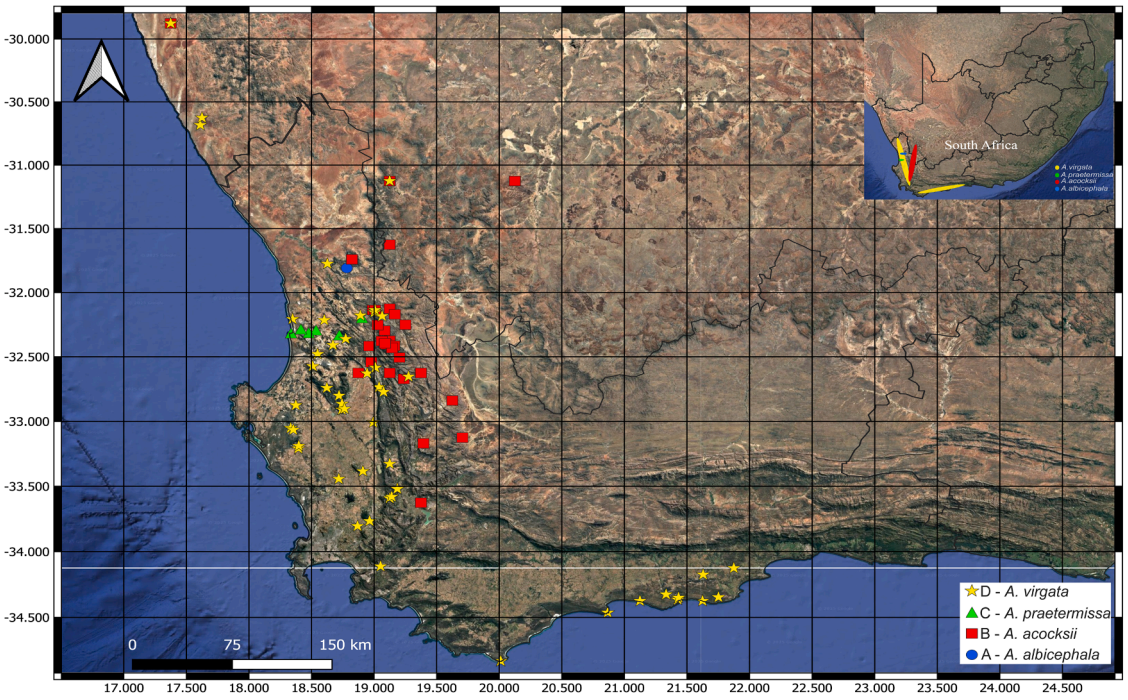

Fig. 21. Known distribution of *Aspalathus albicephala* (A), *A. acocksii* (B), *A. praetermissa* (C), & *A. virgata* (D) based on verified herbarium specimens and field records. Each points represents confirmed locality.

compact, capitate to subglobose, comprising 15–25 relatively large flowers. *Flowers* uniformly yellow, lacking nectar guides, subsessile. *Pedicel* extremely short <0.5 mm long. *Bracts* obovate to oblanceolate, 5.0–11.0 × 1.0–5.0 mm, acuminate at the apex, sericeous; bracteoles narrowly lanceolate to linear, 3.5–10.0 × 0.5–2.6 mm, hairy. *Calyx* campanulate, 9.0–13.0 mm long; calyx tube densely white-sericeous; teeth linear-subulate, 5.5–9.0 mm long, acute, spreading, indumentum consistent with tube. *Standard petal* ovate, 7.5–11.0 × 6.7–11.0 mm, rounded at the apex, abaxially short-sericeous; claw 1.0–6.0 mm long, glabrous. *Wing petals* lunate-oblong, 7.0–10.0 × 3.3–4.5 mm, subglabrous to shortly sericeous on the lower basal fourth; petal sculpturing lamellate, transcostal, composed of thin longitudinal ridges extending from the base to just below the apex; claws 2.8–4.0 mm long. *Keel petals* lunate, 6.9–10.0 × 3.1–4.5 mm, with a prominent basal pocket, sericeous except for the upper margin; claws 2.5–5.0 mm long. *Androecium* 7.5–13.0 mm long; filaments united into a staminal tube, forming a complete sheath around the gynoecium; anthers dimorphic: 6 short, basifixed, inserted basally on the tube with divergent pollen sacs; 4 long, dorsifixed, inserted apically or subapically with parallel pollen sacs; tube pale green, slightly exserted beyond the corolla. *Pistil* 4.0–8.5 mm long; ovary superior, narrowly oblong, densely long-pubescent; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, with apical receptive surface; ovules 2. *Pods* and seeds not seen (Supplementary Figure B19).

Diagnostic characters. *Aspalathus acocksii* is morphologically closest to *A. virgata*, including forms previously referred to as *A. meyeri* Harv., with which it shares a broadly similar architecture and habitat preference in montane environments. However, *A. acocksii* is readily distinguished by its more robust, erect habit and distinctly larger floral structures. The flowers of *A. acocksii* are considerably larger, with the standard petals measuring 7.5–10.5 mm in length, compared to the shorter standards in *A. virgata* (5–7 mm in length). The inflorescences are more compact and ovate to subglobose, and the calyx teeth are longer and more linear-subulate (8.5–12 mm long), contrasting with the typically shorter, triangular teeth of *A. virgata* (4.5–9 mm long). Additionally, *A. acocksii* exhibits a silvery-sericeous leaf surface and more prominent bracts and bracteoles, which further distinguish it from the more variable and often glabrescent-leaved *A. virgata*.

Distribution and habitat. *Aspalathus acocksii* is a range-restricted montane species endemic to the western escarpment of South Africa, occurring primarily in the southern Cederberg Mountains from Uitkyk Pass and the Pakhuis Pass region near Clanwilliam, northwards through the Swartruggens range into the Bokkeveld escarpment near Nieuwoudtville (Calvinia Division), with an outlying record from the Kamiesberg foothills near Komaggas in the Northern Cape (Fig. 21B). The species inhabits mid- to high-elevation slopes and plateaus, typically above 800 m, on gravelly to sandy substrates derived from Table Mountain Sandstone. It is predominantly associated with montane fynbos vegetation, specifically Bokkeveld Sandstone Fynbos [FFs 1] and Cederberg Sandstone Fynbos [FFs 4], occupying cool, exposed upland environments characterised by frequent mist, seasonal precipitation, and well-drained soils. This elevational and edaphic specialisation contrasts with the lower-elevation, broader-ranging habitats of related taxa such as *A. virgata*, which occurs primarily in lowland fynbos.

Flowering. October–January.

Etymology. The specific epithet *acocksii* commemorates Dr. John Phillip Harison Acocks (1911–1971), a renowned South African botanist and ecologist best known for his seminal work on South African vegetation, including the influential "Veld Types of South Africa." Dr. Acocks made extensive plant collections across the country during his career with the Division of Botany and played a key role in shaping modern understanding of vegetation classification in southern Africa. He collected the type specimen of *Aspalathus acocksii* in the Cederberg Mountains (Dahlgren, 1960).

Conservation status. *Aspalathus acocksii* is currently assessed as Least Concern (LC) (Raimondo et al., 2009), reflecting its relatively broad distribution and absence of known ongoing population decline. However, spatial metrics suggest a more cautious interpretation may be warranted. The Extent of Occurrence (EOO) is estimated at 44,009.812 km^2, placing it within the Near Threatened (NT) threshold under IUCN Red List criteria, while its Area of Occupancy (AOO) of 108.000 km^2 meets the quantitative criteria for Endangered (EN). Although these figures highlight a degree of habitat specificity and possible range contraction, the species remains locally common in suitable habitats.

Continued monitoring of land-use change and habitat quality is advised to ensure early detection of potential future threats.

Specimens examined

South Africa. NORTHERN CAPE. **2917 (Springbok):** 4.7 km of Komaggas Soebatsfontein road to Brandberg, (–DC), 20 Oct 1986, *Le Roux, A. 719* (PRE). **3119 (Calvinia):** Nieuwoudtville, (–AC), without date, *Leipoldt, C.F.L. Sub-BH9383* (BOL). WESTERN CAPE. **3218 (Clanwilliam):** near Clanwilliam, (–BB), 02 Oct 1897, *Bolus, H. 8980* (BOL); Eendekuil, National Road between Clanwilliam and Citrusdal, (–DB), 14 Sept 1987, *Le Maitre, D.C. 517* (PRE). **3219 (Wuppertal):** Pakhuis vlakte, (–AA), 28 Nov 1984, *Taylor, H.C. 11174* (NBG); Cederberg, Pakhuis, (–AA), 17 Jan 1953, *Esterhuysen, E.E. 21157* (BOL); Pakhuis Pass, (–AA), *Leipoldt, C.F.L. 4466* (BOL); Pakhuis Pass, (–AA), 02 Oct 1948, *Acocks, J.P.H. 15045* (BOL); 10 Dec 1965, Dahlgren, R. & Strid, A. 4471 (LD); Boontjieskloof, NE of Pakhuis, (–AA), 26 Sept 1969, *Esterhuysen, E.E. 32239A* (BOL); Pakhuis Pass to Heuningvlei, (–AA), 26 Dec 1983, Taylor, H.C. 10860 (NBG); Just before turn-off to Driehoek along main road, (–AA), 04 Dec 2015, *Du Preez, B. 166* (BOL); Gonnafontein, (AC), 18 Nov 2000, *Pond, U. 240* (NBG); Algeria Forest Station, (–AC), 16 Nov 1996, *Van Rooyen, M.W. 181* (NBG); At the foot of Uitkyk Pass, 12 miles E of Kriedouwkrans, (–AC), 04 Nov 1956, *Dahlgren, R. & Peterson, B. 1038* (BOL, LD); 20 Nov 1965, *Dahlgren, R. & Strid, A*. 4264 (LD); Over Uitkyk Pass towards Dwarsrivier between Moutonsklip and Perdekloof, (–AC), 19 Nov 1985, *Taylor, H.C. 11435* (NBG); Swartruggens, Knolfontein Farm, (–DC), 17 Sept 2016, *Du Preez, B. 201* (BOL).

31. ***Aspalathus praetermissa*** C.H.Stirt., Du Preez & Helme in *Phytotaxa* 665(1): 70 (2024). Type. South Africa, Western Cape, Sandveld Dist (3319), Vensterklip farm, north of Verlorenvlei, (–BC), 21 Nov 2018, *Du Preez, B. 609* (BOL! holo.).

Erect, reseeding shrub up to 2 m tall. *Branches* woody, rigid, often single-stemmed at base, later branching, grey-brown, rough, and longitudinally fissured; younger branches silvery-sericeous with prominent. *Leaves* trifoliolate, clustered along seasonal and short shoots, with hairy leaf tubercles. *Leaflets* flat, obovate to ovate, 2.0–3.5 × 1.0–2.0 mm, apex acute to obtuse, thin-textured, covered in sparse to dense silky-sericeous hairs; base long-sericeous to woolly, becoming persistent and raised into tubercle-like cushions with age. *Inflorescences* compact, terminal spike, ovate to narrowly cylindrical, borne on seasonal shoots, comprising 10–25 flowers. *Flowers* pale yellow, with golden nectar guides that turn dark brown after anthesis, densely imbricate and partially enclosed by bracts. *Pedicels* subsessile. *Bracts* spathulate, 4 × 2 mm, attenuate at apex, densely sericeous; bracteoles 3.5–4.0 × 0.5–1.0 mm, narrowly lanceolate, sericeous. *Calyx* campanulate, 3.5–4.0 mm long, silvery-sericeous on exterior, pale green; teeth 1.5 mm long, narrowly triangular, acute, the dorsal lobe broader. *Standard petal* 4.5–5.0 × 3.0–3.5 mm, ovate, apex rounded to shallowly emarginate, abaxially densely sericeous; claw 1.5–2.0 mm, linear. *Wing petals* 4.0–4.5 mm long; blade 2.7–2.9 × 1.5–1.7 mm, elliptical-rectangular, apex obtuse, concave above midline, clasping keel; claw 1.7–2.0 mm long; petal sculpturing lamellate, with 15–20 rows of folds extending along the basal to mid-dorsal surface. *Keel petals* 3.6–3.9 mm long; blade 2.5–2.6 × 1.3–1.5 mm, obovate, fused, sericeous, apex rounded, base auriculate and pocketed; claw 1.5–1.8 mm. *Androecium* 3.4–3.6 mm long; filaments fused into a staminal tube with apical tips free, dorsally slit; anthers 0.3–0.4 mm long, 6 shorter and basifixed, 4 longer and dorsifixed, alternating in arrangement. *Pistil* 5.4–5.7 mm long; ovary 2.0 × 0.9 mm, lanceolate, superior; style slender, upcurved, pubescent on basal third, glabrous distally; stigma capitate, slightly broadened, receptive surface apical; sericeous, 2-ovuled. *Pods* obliquely ovate, 3.4 × 1.9 mm, pale green, sericeous. Seeds not seen (Supplementary Figure B20).

Diagnostic characters. *Aspalathus praetermissa* is morphologically similar to *A. virgata*, sharing an overall compact, erect habit and flat leaflets. It differs from *A. virgata* in having shorter, densely leafy shoots with leaflets 2.0–3.5 × 1.0–2.0 mm versus longer, more weakly textured leaves 1.5–6.0 mm in *A. virgata*; uniformly silvery-sericeous and clustered on short seasonal shoots versus often asymmetrical and becoming glabrescent in *A. virgata*. Inflorescences are compact, spike-like, with 10–25 flowers versus more loosely arranged inflorescences with larger flowers in *A. virgata*. Standard petals are smaller (4.5–5.0 mm vs. 5.0–7.0 mm), wing petals 4.0–4.5 mm vs. 4.0–6.5 mm, and keel petals 3.6–3.9 mm vs. 3.5–4.5 mm. The wing petals are uniformly hairy ventrally and lack the flared apex of *A. virgata*, which is glabrous apically with more prominent lamellate sculpturing. Calyx teeth are shorter and narrower (3.5–4.0 mm vs. 6.0–9.0 mm).

Distribution and habitat. *Aspalathus praetermissa* is a highly localized endemic of the Sandveld region in the Western Cape Province of South Africa. Its distribution is confined to a ca. 150 km^2 area on the coastal lowlands between Elandsbaai (west), Paleisheuwel (east), Leipoldtville (north), and Redelinghuys (south), all situated within the Clanwilliam Division (Fig. 21C). The species occurs at low elevations ranging from 50 to 200 m above sea level. This species grows on deep, acidic, nutrient-poor sands derived from aeolian deposits, and is entirely restricted to Leipoldtville Sand Fynbos [FFd 2].

Flowering. September–May.

Etymology. The specific epithet *praetermissa* is derived from the Latin *praetermissus*, meaning "overlooked," and refers to the fact that this morphologically distinct species remained unnoticed until relatively recently, despite occurring in accessible lowland habitats. It was first documented during ecological surveys conducted on private farmland (Stirton et al., 2024).

Conservation status. *Aspalathus praetermissa* is currently assessed as Critically Endangered (CR: B1ab (i, ii, iii, iv, v)) (Stirton et al., 2024), due to its severely limited range, ongoing habitat loss, and population fragmentation. Spatial metrics confirm this high threat level, with an Extent of Occurrence (EOO) of 49.000 km^2 and an Area of Occupancy (AOO) of 16.000 km^2, both of which fall well within the thresholds for listing as Critically Endangered under IUCN Red List criteria. Approximately 70% of suitable habitat has been lost over the last three decades, primarily to potato and rooibos cultivation, and remaining subpopulations are isolated within a fragmented landscape. The species is further threatened by the suppression of natural fire regimes, which impedes seedling recruitment, and it does not occur within any formal protected areas. Although some additional subpopulations may exist in unexplored habitat fragments, the known population is declining and vulnerable. Active management and improved habitat protection are urgently needed to prevent extinction.

Specimens examined

SOUTH AFRICA. Western Cape. **3118 (Vanrhynsdorp):** Bonteheuwel Farm, farm, 173 m elev, (–DB), 28 May 2016, *B. Walton s.n.* (BOL); Droogerivier farm, 21 km NE Redelinghuys, 171 m elev, (–DB), 11 Sept 2018, *N. Helme 9315* (NBG, BOL). **3218 (Clanwilliam):** Sebulon, 15 km E Elandsbaai, (–AD), 19 Feb 2018, *N. Helme 9310* (NBG); Olifantsberg, (–BC), 20 Nov 2025, *A.M. Muasya & B.D. Williams 8595* (BOL, NBG, PRE).

32. ***Aspalathus virgata*** Thunb., *Prodr.* 2: 126 (1800); *Diss. Bot. Aspalathus* 1:10 (1802); Willd., *Sp. Pl.* 3(2): 966 (1802); Thunb., *Fl. Cap.* ed. 2: 576 (1823); DC., *Prodr.* 2: 142 (1825); Eckl. & Zeyh., *Enum.* 2: 203 (1836); E.Mey., *Comm.* 1: 41 (1836); Walp., *Linnaea* 13: 482 (1839); Benth. in Hook., *Lond. J. Bot.* 7: 603 (1848). ≡ *Paraspalathus virgata* (Thunb.) Presl, *Bot. Bemerk.* 129 (1845). ≡ *Achyronia virgata* (Thunb.) Kuntze, *Rev. Gen.* 1:158 (1891). Type: South Africa. *Cap. Bon Spei*, Thunberg s.n. (UPS-THUNB, lecto. —image!, designated by Dahlgren (1960); G—image! isolecto.).

Aspalathus elongata Eckl. & Zeyh., *Enum.* 2: 202 (1836); Walp., *Linnaea* 13: 481 (1839); Benth. in Hook., *Lond. J. Bot.* 7: 603 (1848); Harv., *Fl. Cap.* 2: 107 (1862); L. Bolus, *Ann. Bolus Herb.* 1: 187 (1915); Adamson & Salter, *Fl. Cape Penins.* 476 (1950). ≡ *Paraspalathus elongata* (Eckl. & Zeyh.) Presl, *Bot. Bemerk.* 129 (1845). ≡ *Achyronia elongata* (Eckl. & Zeyh.) Kuntze, *Rev. Gen.* 1: 157 (1891). Type: Tulbagh Valley near Waterfall, *Ecklon & Zeyher 1387* (S, lecto. —image!, designated by

Dahlgren (1960); HBG—image!, GRA—image!, SAM—image!, isolecto.)

Aspalathus elongata var. *densa* L. Bol., *Ann. Bolus Herb.* 1: 187 (1915). Type: South Africa, Western Cape, Riversdale Div., Botteliersfontein near Albertinia, Nov 1913, *Muir 1142* (BOL, holo.!, GRA—image!, NBG—image!, PRE—image!, SAM—image!, iso.)

Aspalathus leucocephala E.Mey., *Comm.* 1: 41 (1836); Walp., *Linnaea* 13:482 (1839); Benth. in Hook., *Lond. J. Bot.* 7: 602 (1848). ≡ *Paraspalathus leucocephala* (E.Mey.) Presl, *Bot. Bemerk.* 130 (1845). ≡ *Aspalathus virgata* var. (γ) *leucocephala* (E.Mey.) Harv., *Fl. Cap.* 2: 107 (1862). ≡ *Achyronia virgata* var. (γ) *leucocephala* (E.Mey.) Kuntze, *Rev. Gen.* 1: 158 (1891). Type: South Africa. Western Cape, Giftberg, without date, *Drège s.n.* (S-G, lecto. —image!, BM—image!, BM—image!, HBG—image!, K—image!, isolecto.).

Erect, reseeding shrub 0.35–1.5 m tall. *Branches* woody, flexible. *Leaves* trifoliolate. *Leaflets* soft in texture, obtuse to subacute, silvery-sericeous; central leaflet 3.0–6.0 × 1.0–1.8 mm, larger than the laterals; lateral leaflets 1.5–5.0 × 0.5–1.5 mm, often reduced. *Inflorescences* ovate to elongate, occasionally exceeding 100 mm in length, comprising 8–35 flowers. *Flowers* bright yellow, lacking nectar guides. *Pedicels* 1.5 mm long. *Bracts* broadly oblanceolate to ovate or circular, 5–8 × 4.5–7.5 mm, thin-textured, pubescent, bracteoles 2–8 × 0.4–2.8 mm. *Standard petal* ovate, 5.0–7.0 × 4.0–6.5 mm, obtuse to retuse, sericeous on the abaxial surface; claw 1.5–4.0 mm long. *Wing petals* 4.0–6.5 × 1.0–2.8 mm, lower surfaces sericeous basally, glabrous apically; claw 2.0–3.5 mm long; petal sculpturing lamellate, consisting of 12–16 parallel, longitudinal ridges extending from the basal region to the mid-dorsal surface of the wing petal, well-developed lamellae, closely spaced, and aligned with the main axis of the petal, forming a pronounced dorsal texture. *Keel petals* 3.5–4.5 × 1.5–2.5 mm, narrowly lunate, claw 2.5–3.5 mm long. *Androecium* 5.5–7.5 mm long. Pistil 4.0–6.3 mm long, ovary sericeous on upper half or throughout; style base also sericeous; ovules 2. *Pod* obliquely ovate, 3.5–4.5 × 1.5–2.0 mm, sericeous. *Seeds* not seen (Supplementary Figure B21).

Diagnostic characters. *Aspalathus virgata* is morphologically most similar to subsp. *quinquefolia* and subsp. *compacta*, in that the leaflets are not tufted and are consistently trifoliolate per node, and the inflorescences are capitate to spike-like, bearing bright yellow flowers that age to orange-brownish tones and lack nectar guides. However, it is readily distinguished from both subspecies by its erect, reseeding growth form (vs. decumbent and resprouting), taller habit (0.35–1.5 m vs. ≤0.25 m), and longer inflorescences comprising 8–35 flowers (vs. 5–13 or 10−20). The calyx lobes are shorter (1.5–2.5 mm vs. 2.0–3.5 mm), and the wing petals have more pronounced lamellate sculpturing with 12–16 parallel ridges (vs. 8–12). *Aspalathus virgata* is also superficially similar to *A. praetermissa* in its erect habit and silvery leaflets but differs by lacking nectar guides (present in *A. praetermissa*), having longer inflorescences and larger floral parts especially the androecium (5.5–7.5 mm vs. 3.4–3.6 mm). Its petal sculpturing (12–16 lamellae) is slightly less dense than the 15–20 ridges observed in *A. praetermissa*.

Distribution and habitat. *Aspalathus virgata* is a widespread lowland species endemic to the winter-rainfall region of the Western and western Northern Cape, South Africa, with a distribution extending from Springbok and Hondeklipbaai in the north, southward through the Sandveld, Cederberg, Olifants River Valley, Swartland, and Overberg, and reaching the southern Cape coast near Albertinia and Still Bay (Fig. 21D). The species occurs across inland escarpments, foothills, and coastal plains at low to mid elevations (20–600 m), occupying a broad spectrum of fynbos, strandveld, and renosterveld vegetation types, often at ecotonal boundaries. It grows on a diversity of substrates, including sandy flats, gravelly slopes, and loamy alluvium derived from granite, shale, and sandstone, and is particularly frequent in disturbed or fire-prone areas such as road verges, old lands, and rocky slopes. Populations have been recorded in the Bokkeveld Sandstone Fynbos [FFs 1], Olifants Sandstone Fynbos [FFs 3], Cederberg Sandstone Fynbos [FFs 4], Winterhoek Sandstone Fynbos [FFs 5], Albertinia Sand Fynbos [FFd 9], Cape Flats Sand Fynbos [FFd 5], Cape Flats Dune Strandveld [FFd 5], Cape Winelands Shale Fynbos [FFh 5], Swartland Alluvium Renosterveld [FRa 2], Swartland Granite Renosterveld [FRg 2], Swartland Shale Renosterveld [FRs 9], Swartland Silcrete Renosterveld [FRc 1], Namaqualand Strandveld [FS 1], Namaqualand Sand Fynbos [FFd 1], Namaqualand Inland Duneveld [FS 2], Namaqualand Heuweltjieveld [FS 3], and Namaqualand Shale Shrubland [FS 4], illustrating the species' wide ecological amplitude and adaptability to a variety of fire regimes and soil types.

Flowering. October–January.

Etymology. The epithet *virgata* is derived from Latin, meaning "twiggy" or "slender-branched," and refers to the densely branched growth form observed in populations from the eastern parts of the species' range. The name *elongata*, assigned by Ecklon and Zeyher, highlights the characteristically elongate, sparsely flowered spikes (up to 6–8 cm long) typical of some Tulbagh Waterfall populations.

Conservation status. *Aspalathus virgata* is currently assessed as Least Concern (LC) under the IUCN Red List criteria (Raimondo et al., 2009), supported by its broad geographical distribution across the Western Cape. The species has an estimated Extent of Occurrence (EOO) of 115, 049 km^2, well above the thresholds for threatened categories. However, its Area of Occupancy (AOO) is calculated at 272 km^2, which technically falls within the Endangered (EN) range under criterion B2. This apparent disparity between EOO and AOO reflects the species' patchy occurrence and ecological specificity within its overall range, often restricted to particular soil types or habitat patches. Although the taxon remains widespread and relatively secure, ongoing threats such as habitat transformation due to agriculture, invasive alien vegetation, and urban expansion may pose localised risks. As such, long-term monitoring is recommended to ensure early detection of any population or habitat decline that may warrant a reassessment of its conservation status.

Specimens examined.

South Africa. NORTHERN CAPE: **2917 (Springbok):** Farm Kap Vley 315, 4.7 km W of Komaggas, Soebatsfontein road to Brandberg, (–DC), 20 Oct 1986, *Le Roux, A. & Lloyd, J. 719* (NBG). **3017 (Hondeklipbaai):** De Klipheuwel, near Rietkop, (–DA), 19 Oct 1980, *Le Roux & Parsons 88* (NBG). WESTERN CAPE: **3118 (Vanrhynsdorp):** Zandkraal, (–AD), 02 Sept 1948, *Compton, R. 20826* (NBG); Klawer, (–DC), 29 Oct 1944, *Leipoldt, C. 4144* (BOL); Flats W of Giftberg, ca. 1.61 km E of Klawer, (–AD), 22 Sept 1965, *Dahlgren, R. & Strid, A. 3298* (NBG); Papkuilsfontein farm, (–DD), 04 Nov 1986, *Stirton, C.H. & Zantovska 11409* (NBG). **3119 (Calvinia)**: Bokkeveld Escarpment, Avontuur 641, 1.2 km west of Grasberg, (–AC), 23 Oct 2009, *Helme, N.A. 6157* (NBG); Clanwilliam Div., Top of Nieuwoudt Pass W of Algeria valley, (–AC), 20 Nov 1965, *Dahlgren, R. & Strid, A. 4277* (NBG). **3218 (Clanwilliam):** Lambert's Bay, (–AB), 23 Oct 1948, *Liebenberg, L. 4287* (NBG); 06 Sept 1953, *Compton, R. 24152* (NBG); Wadriftsoutpan, (–AB), 20 Sept 1981, *Stirton, C.H. 10629* (BOL); Die Possie, Waboomsrivier, Koue-Bokkeveld, (–AC), 23 Dec 1978, *Hanekom, W. 2542* (K); Elandsbaai, Koopmansdrift, 2 km east of homestead, (–AD), 22 Sept 2000, *Hanekom, W. 3313* (NBG); Between Grays Pass and Graafwater, (–BA), without date, *Leipoldt, C. 3168* (BOL); Parkhuis pass, (–BB), 02 Oct 1948, *Acocks, J. 15045* (K); 27 Jan 1947, *Leipoldt, C. 4388* (BOL); Clanwilliam, (–BB), *Leipoldt, C. 401* (BOL); Sandberg 227, Donkieskraal Nature Reserve, 10 km SE of Leipoldtville, (–BC), 21 Oct 2008, *Helme, N.A. 5662* (NBG); along road to Elandsbaai, near turn-off to Redelinghuys, (–BC), 21 Nov 2018, *Du Preez, B. 610* (BOL); Piketberg-Clanwilliam Div., ca. 3.22 km NW of top of Grey's Pass, along the road to Paleisheuwel, (–BC), 20 Sept 1965, *Dahlgren, R. & Strid, A. 3234* (NBG); Eastern side of Zebrakop W of Eendekuil, (–BC), 29 Oct 1956, *Dahlgren, R. & Peterson, B. 904* (NBG); Sandveld, 9 km SE of Redelinghuys, Bottelfontein, NW of Tafelberg, (–CB),(–CB), 30 Oct 2018, *Helme, N.A. 9474* (NBG); Road heading south from Redelinghuys to Velddrift, (–DA), 21 Nov 2018, *Du Preez, B. 614* (BOL); Kapteinskloof mountain, (–DA), 16 Aug 1980, *Linder, H.P. 2537* (BOL); Olifants river valley near Piekenierskloof, (–DB), without date, *Leipoldt, C. 4465* (BOL); Jansekraal on road to Paleisheuwel, (–DB), 07

Sept 1972, *Oliver, E. 3903* (NBG); Piekenierskloof, near top of pass on west side, (–DB), 25 Sept 1982, *Taylor, H. 10455* (NBG); Greys Pass, (–DB), 26 Aug 1959, *Barker, W. 9064* (NBG); Sandveld between Grey's Pass and Graafwater, (–DB), without date, *Leipoldt, C. 3168* (BOL); 4.83 km S of Warmbad along the road E of the Olifants River Mountain, (–DB), 03 Nov 1956, *Dahlgren, R. & Peterson, B. 1081* (NBG); Flats ca. 4.83 km SE of Eendekuil along the road Piketberg-Grey's Pass, (–DB), 27 Oct 1965, *Dahlgren, R. & Strid, A. 3852* (NBG); South side of valley below Moutons Vlei, (–DC), 11 Nov 1934, *Pillans, N.S. 7281* (BOL); Piketberg Mountain, (–DC), 06 Sept 1894, *Schlechter, F. 5198* (BOL); Dezu, (–DD), without date, *Van Breda 211* (BOL). **3219 (Wuppertal):** Pakhuis, (–AA), 27 Dec 1948, *Esterhuysen, E.E. 15051* (BOL); Cederberg Mountain, between Pakhuis and Heuning vlei, (–AA), 28 Dec 1941, *Esterhuysen, E.E. 7440* (BOL); Citrusdal, (–CA), without date, *Pillans, N.S. 10668* (BOL); Olifants River Valley, ca 10 km south of Citrusdal on road to Hot springs, (–CA), 15 Sept 1976, *Hugo, L. 556* (K); Between Groot River and Elandskloof, (–CA), without date, *Leipoldt, C. 3119* (BOL); Piketberg Div., Warm Baths, (–CA), without date, *Edwards, G. 267* (BOL); Citrusdal, Kleinplaas, (–CA), 26 Sept 1997, *Hanekom, W. 2892* (K); Kleinplass (Klompiewaboom) Citrusdal, (–CA), 20 Sept 1969, *Hanekom, W. 1252* (NBG); Citrusdal, Kleinplaas, (–CA), 26 Sept 1997, *Hanekom, W. 2892* (NBG); Grasruggens Mountain, (–CB), 26 Nov 1938, *Pillans, N.S. 8724* (BOL); Between Groot River and Elandskloof, (–CB), without date, *Leipold, C. 3118* (BOL); Piketberg Div., W of top Versfeld Pass, (–CB), *Dahlgren, R. & Strid, A. 4250* (NBG); Olifants River Valley, c. 10 km south of Citrusdal on road to Hot springs, (–CC),(–CC), 15 Sept 1976, *Hugo, L. 556* (NBG). **3318 (Cape Town):** Eastern shores Langebaan Lagoon south of Langebaan town, (–AA), 14 Aug 1975, *Boucher, C. 2812* (NBG); Hopefield, (–AB), 15 Jan 1887, *Bachmann, F.E. Sub-BH26154* (BOL); Near Hopefield, (–AB), without date, *Bolus, H. 12657* (BOL); near Hopefield, (–AB), 10 Dec 1946, *Wilman, A.M. 2461* (BOL); Malmesbury Div., between Hopefield and Darling, (–AB), 03 Sept 1944, *Leighton, F. 634* (BOL); Near Hopefield, (–AB), 11 Dec 1946, *Compton, R. 18922* (NBG); 3.22 km SE of Hopefield, (–AB), 28 Nov 1965, *Dahlgren, R. &Strid, A. 4342* (NBG); Hopesfontein, (–AB), 3 Sept 1944, *Compton, R. 15964* (NBG); Malmesbury, Darling Flora Reserve, (–AD), 13 Nov 1956, *Rycroft, H. 2015* (NBG); Malmesbury Div., 0.80 km NW of Mamre Village, (–AD), 28 Nov 1965, *Dahlgren, R. & Strid, A. 4333* (NBG); Near Porterville, (–BB), Near Porterville, without date, *Edwards, G. 265* (BOL); East of Riebeck Kasteel Village, (–BD), 25 Nov 1976, *Esterhuysen, E.E. 34479a* (BOL); Malmesbury Dist., Bokbaai, (–CB), 05 Nov 1969, *Barker, W. 10676* (NBG); Malmesbury Dist., Burgerspost farm, near Pella, (–DA), 17 Jan 1980, *Boucher, C. & Shepherd, P. 4938* (NBG); Kraaifontein, (–DC), 28 Nov 1934, *Compton, R.H. 4845* (NBG); Swartland near Klapmuts, (–DD), without date, *Bolus, H. Sub-BH49388* (BOL); near Paarl, (–DD), without date, *Drège Sub-BH26152* (BOL). **3319 (Worcester):** Tulbagh valley near waterfall, (–AC), without date, *Ecklon, C.F. 1387* (BOL); In the mountain behind Bainskloof, (–CA), 12 Nov 1896, *Schlechter, F. 9114* (BOL); sand flats above Tulbagh Waterfalls, (–AC), 26 Oct 1965, *Dahlgren, R. & Strid, A. 3829* (NBG); NE of Darling Bridge, N of Bain's Kloof, (–CA), 08 Nov 1956, *Dahlgren, R. & Peterson, B. 1128* (NBG); Brandwacht, (–CB), 25 Nov 1962, *Walters, I. 556* (NBG). **3419 (Caledon):** Viljoen's Pass on the Villiersdorp side, (–AA), 17 Nov 1932, *Bolus, H. 20730* (BOL); In the hills between Houw Hoek and the Palmiet River, (–AA), Nov 1879, *Bolus, H. 5019* (K); Fairy Glen, Brandwacht Mountain, Renosterveld, (–BD), 08 Nov 1948, *Acocks, J. 15278* (K); Kleinmond, (–BD), 05 Dec 1960, *Cloete, M. s.n.* (NBG); Hagelkraal area-near farmhouse, (–DA), 03 Dec 2014, *Wilman, V. & Velembo, S. 73AG* (NBG). **3420 (Bredasdorp):** In the valley of the Breede River near Darling Bridge, (–AB), Nov 1897, *Bolus, H. 5027* (K); Potberg, 2.3 km south-east of Elands pad farm along road, (–BC), 26 Nov 1978, *Burgers, C. 1520* (NBG); Near Cape Infanta, (–BD), 25 Nov 1961, *Esterhuysen, E.E. 29364* (BOL); Bredasdorp, near Cape Agulhas, (–CC), without date, *Leipoldt, C. 3169* (BOL); Cape Agulhas, (–CC), without date, *Leipoldt, C.F.L. 3169* (BOL). **3421 (Riversdale):** 1.5 km W of Resiesbaan Siding, (–AB), 24 Jan 1980, *Bohnen, P. 7234* (NBG); Albertinia, (–BA), 07 Dec 1951, *Barker, W. 7738* (NBG); Reisiesbaan Siding, 2 km west of siding on main road, (–AB), 31 Oct 1979, *Bohnen, P. 715/3* (NBG); Albertinia, (–BA), 14 Dec 1965, *Bayliss, R. 3064* (NBG).

CRediT authorship contribution statement

L.K. Madika: Writing – review & editing, Writing – original draft, Visualization, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **C.H. Stirton:** Writing – review & editing, Visualization, Validation, Supervision, Resources, Formal analysis, Data curation. **R.J. Sebola:** Writing – review & editing, Supervision. **D.A. Zhigila:** Writing – review & editing, Supervision. **B.D. Williams:** Software. **A.M. Muasya:** Writing – review & editing, Visualization, Validation, Supervision, Project administration, Funding acquisition, Data curation, Conceptualization.

Declaration of competing interest

We have no conflicts of interest to disclose.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.sajb.2026.01.025.

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