

Notes on *Asparagus Africanus* and Related Species.

By

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On examining the material at Kew Herbarium, which Baker had placed under *Asparagus africanus* and its varieties, it appeared that several unrelated plants had been placed together. Several of the specimens belong to other species, and some of his varieties are worthy of specific rank. The following changes in nomenclature are proposed.

1. *A. africanus* Lam. Encyc. I, 295 (1783); *Asparagus dependens* Thb. Prod. Pl. Cap. (1794); *Asparagopsis juniperina* Kunth, Enum. V, 74 (1850); *Asparagopsis niveniana* Kunth l.c., *Asparagopsis lamarckii* Kunth l.c.

Lamarck's description of this species states that the stem is woody, angled, leaves setaceous, curved, 10–20 per fascicle, and that at the origin of each branch and under each fascicle one finds an acute reddish spine, bent slightly backwards. The specimens agreeing with this description are those which according to notes C. E. Moss had previously to this, compared with the types of *A. dependens* and *A. juniperina*.

Stem twining, angled and furrowed (in dried state) green, minutely pubescent. Branches short, twining, angled. Spines 6 mm. long on main stem, reduced to 1 mm. on branches, reddish in colour, patent or reflexed at an acute angle, curved or straight, Cladodes fascicled, 5–20 per cluster of various lengths, usually 1 cm. long, spreading straight or curved, slender, subterete. Flowers 3 or more per fascicle, peduncle jointed in the lower third.

CAPE PROVINCE.—Cape Division: Table Mountain, Dec. 1846, *Prior*; Rondebosch, *Prior*, *Burchell* 389. Paarl Division: French Hoek, *Schlechter* 9218. Swellendam Division: *Burchell* 7221. Uitenhage Division: *Drege* 8576, *Zeyher* 178. Alexandria Division: Addo, *Burchell* 4269. Karoo: *Gill*. Reg. Orient: *Prior*.

- 1a. *A. africanus* Lam. var. *brevifolia* Kies var. nov. Typo similis sed cladodiis adscendentibus differt. *Cladodia* brevia, 5–6 cm. longa, adscendentia. *Caules* erecti; rami adscendentes. *Squamae* ramorum et ramulorum basi in calcaria pungentia deflexa rigida productae.

Differs from the type in that the cladodes are ascending, and short, not curved, spreading and long. *Cladodes* short, 5–6 cm. long, ascending. *Stem* erect, branches, ascending; squamae below branches and branchlets produced into a rigid, sharp, slightly deflexed spine.

CAPE PROVINCE.—Kaffraria: *Cooper* 191.

NATAL.—Umvoti Division: Greytown, *Wylie*; Bothas Hill, *Hutchinson* 4703. Alexandra Division: *Flanagan* 253. Inanda Division: *Wood* 989. Zululand: *Eshowe*, *Gerstner* 2405.

2. *A. multiflorus* Bak. in Journ. Linn. Soc. XIV, 610 (1874); *A. dependens* Bak. (non Thnb.) Fl. Cap VI, 266 (1896); *A. africanus* var. *pubescens* Bak. in Journ. Linn. Soc. XIV, 610 (1874); *A. africanus* var. *dependens* Bak. Fl. Cap VI; 266 (1896).

The specimens which Baker cites under *A. africanus* var. B, are conspecific with *A. multiflorus* Bak. This species differs from *A. africanus* in the stems being pubescent, not glabrous, and in the deflexed branches and deflexed cladodes.

Branches scrambling, lax, pubescent, green. *Spur* reduced, not spiny under the fascicles of cladodes. *Branchlets* deflexed, cladodes ascending or deflexed, 6–12 per fascicle, stout, terete, usually straight. *Flowers* 8 or many per cluster, peduncles jointed in lower third.

CAPE PROVINCE.—Somerset Division: Bowker (Type in Kew Herb.). Beaufort Division: *Cooper* 523. Albany Division: *Cooper* 3250. Kaffraria: *Cooper* 404. Uitenhage Division: *Zeyher* 4158, 236; Enon, *Thode* A 2769.

3. *A. concinnus* (Bak.) *Kies* stat. nov.; *A. africanus* var. *concinnus* Bak. in Journ. Linn. Soc. XIV, 619 (1874); *A. laricino* affinis sed humilior.

Radices incrassatae, fusiformes, 1 cm. diametro. *Rhizoma* squamis stramineis 1 cm. longis vestita. *Caulis* fruticosus, erectus vel subscandens, 60–90 cm. longus; rami sulcato-costulati; costulis minute albo-scabridis demum laevigatis nitido-griseis vel rubris; ramuli breves, fasciculati vel solitarii, erecto-patentes. *Squamae* ad basin fasciculorum membranaceae, acuminatae, basi in calcaria, pungentia, recurva, brunnea productae. *Cladodia* 0.4–1 cm. longa, 15–70 fasciculata, viridia, teretia, apice mucronulata, leviter curvata vel stricta. *Flores* 1–7 fasciculati. *Pedunculi* 5–6 mm. longi, basin versus articulati. *Perianthium* 0.3 mm. longum, segmentis recurvatis cremeis dorso laete viridi-carinatis. *Filamenta* patentia, basin versus perianthio adnata; antherae aurantiacae demum rubrae. *Ovarium* globosum, viride; stylus brevis, trifidus. *Bacca* globosa, rubra. *Semina* globosa, nigra.

Roots thick, fusiform, 1 cm. diam.; bud-scales on rhizome 1 cm. long, horny, yellowish. *Shrublet* 60–90 cm. high, unbranched for 10 cm., with adpressed squamae. *Branches* scrambling, white, striate, with minute retrorse hairs on striae, the older stems becoming smooth, shiny, blue-grey or reddish, branchlets short, single or fascicled, erect-spreading. *Squamae* thin, membranous with acuminate apex, basal spur sharp, recurved, brownish, spiny under each fascicle of cladodes. *Cladodes* 4–1 cm. long, 15–70 per clustre, arising in axils of spines, pale green, terete (triquetrous in dried specimens), mucronate, straight or slightly curved. *Flowers* 1–7, usually 3 per fascicle. *Peduncle* jointed near the base, 5–6 mm. long. *Perianth* 3 mm. long, lobes reflexed, creamy, with pale green midline to each segment. *Stamens* spreading, filaments adnate to perianth at base; anthers orange, becoming dark red. *Ovary* green, globose, style short, stigmas 3, papillate at tips. *Berries* globose, red, seed globose, black.

This is related to *A. laricinus*, both having white striate stems. It differs from *A. laricinus*, in the low habit, short internodes and short cladodes. It differs from *A. microphyllus* in having straight cladodes and spines under each fascicle of cladodes. Baker cites these specimens under *A. africanus*, but the white striate stems would indicate a close relation with *A. laricinus* rather than with *A. africanus*.

CAPE PROVINCE.—Somerset East Division: Bruintjies Hoogte, *Burchell* 3020 (Type in Kew Herb.). Colesberg Division: *Shaw*, Kuruman Division: *Burchell* 2443.

O.F.S.—Fauresmith Division: Veld Reserve, *Verdoorn* 1186, 955; *Mogg* 17085; Voelfontein, *Kies* 339. Wepener Division: *Acocks* 11172.

TRANSVAAL.—Lydenburg Division: *Wilms* 1551.

FIG. 1.

4. *A. microphyllus* Burch. ex. Bak. Fl. Cap. VI, 266 (1896); *A. africanus* var. γ Bak. l.c. *A. microphyllus* Burch. mss.

Stem stout, scrambling, shrubby, curved between two nodes, white striate, minutely hirsute on striae. *Spines* on main stem 2–7 mm. long, hirsute, deflexed, none under fascicles of cladodes. *Branches* lax, similar to main stem. *Cladodia* 4–20 per fascicle, 8 mm. long, curved terete, glabrous. *Flowers* 1–3 per fascicle, peduncle jointed in lower third, cladodes up to 12 mm. long.

Differs from *A. africanus* in the white ribbed stem, lack of spines under the cladodes, and the much curved cladodes. Differs from *A. retrofractus* by stouter habit and shorter cladodes.

S.W.A.—Great Namaqualand: Karasberg, Naruda, *Pearson* 7964. Kubib, *Pearson* 9478; *Hoffnungsfelde* 9536.

BECHUANALAND.—Kosi Fontein, *Burchell* 2572 (Type in Kew Herb).

5. *A. compactus* *Salter* in Journ. S.A. Bot. VI, 165 (1940); *A. africanus* var. *wrightii* Bak. Journ. Linn. Soc. 14; 610 (1874). Differs from *A. africanus* in the ribbed white stems and trigonous cladodes.

CAPE PROVINCE.—Cape Division: *Prior*, Cape Town. Caledon Division: *Zwarteberg*, *Schlechter* 10364.

6. *A. pearsonii* *Kies* sp. nov.; *A. multifloro* Bak. affinis sed ramis glabris laxioribus differt.

Suffrutex erectus vel subscandens, 1 m. altus. *Caules* laxe ramosi, subscandentes, teretes, longitudinaliter striati, scaberuli, virides, recti. *Rami* subhorizontales vel deflexi, sparsi. *Squamae* ramorum basi in calcaria pungentia productae, ramulorum minores. *Cladodia* fasciculata, pauca, 0.3–2.5 cm. longa in quoque fasciculo 2–6, teretia, recta vel curvata, deflexa vel adscendentia. *Flores* pauci, 2–4-nati, pedunculi breves, 2–3 mm. longi, medio articulati. *Perianthium* albidum segmentis patentibus brunneo-carinatis. *Filamenta* perigonio $\frac{1}{3}$ breviora. *Ovarium* 1.5 mm. longum, ovoideum. *Stylus* 0.5 mm. longus, trifidus.

Bush or scrambler 60–100 cm. high. *Stems* laxly branched, stout, longitudinally striate, slightly zigzag or straight. *Branches* few, horizontal or deflexed. *Spines* on main stem soft, on branchlets reduced to minute blunt spurs. *Cladodes* few, 2–6 per cluster, varying from 0.3–2.5 cm. long in same cluster. terete, straight or slightly curved, deflexed or ascending. *Peduncle* short, 2–3 mm. long, jointed near the middle. *Flowers* few, 2- or 4-nate, white, 5 mm. diam.; perianth lobes spreading, keeled with a brownish stripe. *Stamens* $\frac{1}{3}$ shorter than the perianth. *Style* 5 cm. long, with 3 short branches. *Ovary* 1.5 mm. long, ovoid.

This species is near *A. multiflorus*, but the stem is not pubescent and it differs from *A. africanus* by the reduced spurs on the branchlets, and it also differs in the cladodes being of various lengths in each fascicle.

S.W.A.—Great Namaqualand: Great Karasberg, *Pearson* 7965; Klein Karasberg, *Pearson* 9722; *Ortendahl* 83; between Sabiesis and Holoog, *Pearson* 4601; Ramans Drift, *Pearson* 4548, 4003 (Type in Kew Herb.); Bysonderheid, *Schinz* 30.

7. *A. rivalis* (*Burch.*) *Kies* sp. nov.; *A. rivalis* *Burch.* nomen nudum; *A. asiaticus* Bak. pro parte, Fl. Cap. 6: 265 (1896); *A. africanus* Bak. pro parte, l.c.

The description of *A. asiaticus* given by Linnaeus is of an erect spiny stem, with filiform branches and setaceous fasciculate leaves. There is no specimen of this species in the Linnaean Herbarium, and the description was derived from the figure in *Pluk. Am.* 54 t. 15 f. 4 (*Mant.* 366), which shows a stiff shrubby habit, with small spines under each fascicle of cladodes. This does not agree with the South African species described by Baker under this name, which is a laxly branched climber, with spines only on the main stem, and none under the cladodes. The *A. asiaticus* of Hooker is closely related to the South African *A. asiaticus* of Baker, but differs in having the pedicels bent at right angles at the joint, while in Baker's species this is never seen. I suggest naming the species *A. rivalis*, taking the name which Burchell used (without description) for his specimen from Kosifontein No. 2587. Baker cites this name as a synonym under *A. asiaticus*, and quotes Burchell's specimen. Baker also places under *A. africanus* specimens which belong here.

Caules fruticosi, erecti vel scandentes, 60–180 cm. alti. *Rami* subscandentes, sparsi, horizontales, virides, glabri vel puberuli, striati, angulati vel teretes. *Squamae* ramorum albae, amplexicaules, fimbriatae, basi in calcaria pungentia non indurata flavescens productae; ramulorum minores basi in tubercula minuta productae. *Cladodia* 2–20, recta, 2–20 mm. longa, internodiis longiora. *Pedunculi* 1–3 vel plures fasciculati, 6–10 mm. longi, prope basin articulati. *Perianthium* 6 mm. diam., lobis stellato patentibus. *Stamina* perigonio $\frac{1}{3}$ breviora. *Bacca* globosa, perianthio basi subpersistente.

Climber or erect shrub, 60–180 cm. high with branches 1–5 cm. apart, lax, at right angles to stem, twining or curving. *Stem* green, glabrous or minutely puberulous, striate, angled or terete, slender. *Squamae* on main branches white-membranous with basal spurs soft, straight, yellowish; on the branchlets the squamae clasp the base of the cladodes, and the spurs are reduced to minute tubercles. *Cladodes* straight, varying in length from 2–10–20 mm. usually exceeding the internodes, 2–20 cladodes per fascicle, usually 10. *Pedicels* 6–10 mm. long, articulating in lower-third, 1–3 or more per fascicle, straight. *Perianth* 6 mm. diam. lobes stellately spreading. *Stamens* $\frac{2}{3}$ length of perianth. Berry sphaerical, with subpersistent perianth at base.

CAPE PROVINCE.—Albany Division: Grahamstown, *Galpin* 284. Graaff Reinet Division: *Bolus* 132. Colesberg Division: *Shaw*; Aliwal North, *Drege* 4481b; *Gerstner* 160. Kimberley Division: Warrenton, *Adams* 802. Herbert Division: Douglas *Orpen* 237.

BECHUANALAND.—Mochudi, *Rogers* 6252; Gaborones, Oct. 1913 *Rogers*; Lobatsi, *Rogers* 6041; Kosifontein, *Burchell* 2587 (Type in Kew Herb.); Maadji Mountain, *Burchell* 2376; Mafeking, *Burt Davy* 11019, 11087.

S.W.A.—Hereroland: Kalkfeld, *Engler* 6443.

O.F.S.—Bethlehem Division: *Phillips* 3152. Bloemfontein Division: *Gemmell* 4955. Senekal Division: *Goossens* 880.

TRANSVAAL.—Shilouvane, *Junod* 617. Waterberg Division: *Burt Davy* 7051. Lydenburg Division: *Thode A* 1648. Pretoria Division: *Repton* 632, *Mogg* 14839. Brits Division: *Mogg* 14623. Barberton Division: *Galpin* 622.

NATAL.—Colenso Division: *Wood* 4089. No locality, *Gerrard* 70, 126.



Asparagus concinnus (Bak.) Kies (Kies 339).

FIG. 1.—Twig, $\times 1$; 2.—Dry twig showing fascicled short shoots, $\times 1$; 3.—Flower, $\times 2$; 4.—Perianth lobe and stamen, $\times 3$; 5.—Gynoecium, $\times 3$; 6.—Rhizome and tuberous roots, $\times 1$.

