

STUDIES IN THE FLORA OF ARABIA XVII:  
Further new and interesting taxa of *Pulicaria* from Oman

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ABSTRACT. An examination of recently collected material of *Pulicaria* (Compositae) from Oman has revealed a distinctive new species, *P. pulvinata* sp. nov. Additional collections of *P. omanensis* include a gathering differing in several vegetative features and recognized as *P. omanensis* subsp. *milleri* subsp. nov.

In his flora of tropical Arabia, Schwartz (1939) recorded sixteen *Pulicaria* species, of which only two were found in Dhofar: *P. leucophylla* Baker (= *P. argyrophylla* Franch.) and *P. arabica* Cass. He did not record any collections from the outermost east of tropical Arabia. In the meantime, and especially within the last decade, Arabia has been visited by many botanists and the number of species of *Pulicaria* recorded from this region has been increased. In the Sultanate of Oman there are eight species of *Pulicaria* with four being endemic to the area (Gamal-Eldin, 1981, 1984). The Sultanate of Oman belongs to the Sudanian vegetation according to the recently published division (Mandaville, 1984).

In 1984, A. G. Miller (RBG Edinburgh) collected several specimens of *Pulicaria*. A set of this collection was kindly put at our disposal for determination or description, and found to include a new, very distinctive species and a new subspecies.

The new species, represented by four collections, is morphologically so different from all other species of the genus that at first glance I could not imagine that it really belonged to the genus *Pulicaria*. However, a closer examination of the flowers (anthers and style), the involucre, and the achenes with their pappus showed that it is without doubt a species of *Pulicaria*, which I name *P. pulvinata* on account of its loose, cushion-forming habit.

***Pulicaria pulvinata* Gamal-Eldin, spec. nov. (Figs 1-3).**

Affinis *P. salviifolia* et *P. gnaphalodes* sed differt inter alia foliis fere omnibus ad apicem ramorum rosulatis congestis pulvinum laxum formantibus.

Herba perennis, prostrata, valde ramosa, ramis et foliis congestis pulvinum laxum formans. *Indumentum* caulis et foliorum incanum e pilis densis, valde longis, ad basin rigidis, ceterum flexuosis. *Folia* spathulata et basi sensim angustata vel ovalia et petiolo lato instructa; inferiora ad 10mm longa, florendi tempore saepe emarcida; superiora parva, 2-3mm lata et 3-5mm longa, saepe congesta fere rosulam formantia, lamina foliorum pilis valde longis laxis et nervo mediano parallele ordinatis oblecta. *Caules capituliferi* pauci, breves, tenues, c.5-25mm longi, erecti, nudi vel 1-2 foliis minutis, linearibus provisi. *Involucrum* c.4-5-5.5mm

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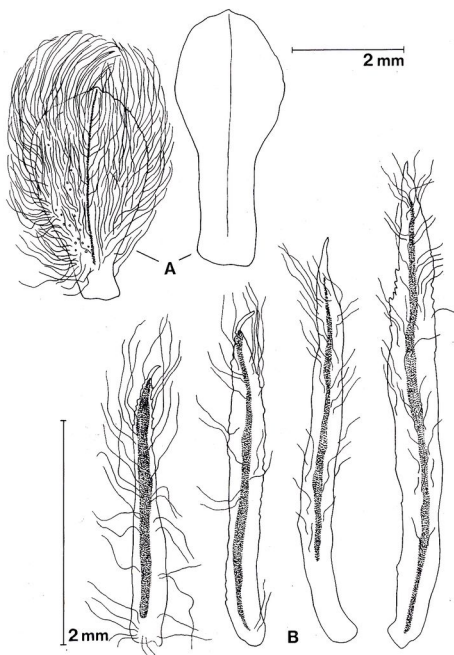


FIG. 1. *Pulicaria pulvinata*. A, median leaves; B, involucral bracts (outer- to innermost from right to left).

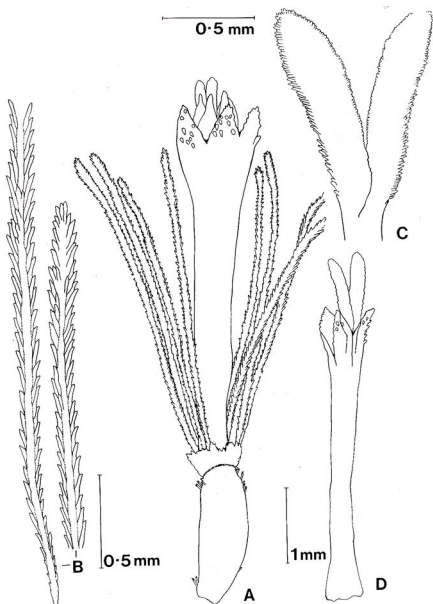
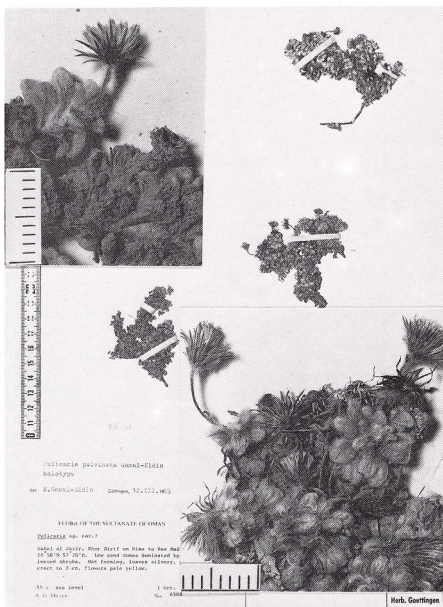


FIG. 2. *Pulicaria pulvinata*. A, disc flower with achene and pappus; B, single hair of the inner pappus; C, style branches; D, marginal flower.

FIG. 3. *Pulicaria pulvinata*. Holotype (GOET ex E).

altum. *Phylla involucri* inaequalia, 3-4-seriata, omnia anguste linearia, herbacea, c.0.3mm lata, pilis longis flexuosis (ad basin rigidis) obsita. *Capitula* ad apicem ramorum solitaria, parva, heterogama, disciformia. *Flores* pallide lutei, marginales pauci, foeminei, tubulosi, centrales hermaphroditi, tubulosi, c.3-3.2mm longi; lobi corollae florum glandulosi. *Achaenia* c.1.3mm longa, ecostata, superne pilis brevibus obsita. *Pappus* duplex; externus coroniformis, c.0.4mm longus, corona apice minute denticulata; internus e setis 10 c.3mm longis, barbellatis.

Type: Sultanate of Oman, Sahel al Jazir, Khor Dirif on Rima to Ras Madraka road, 18°56'N 57°20'E, low sand dunes dominated by succulent-leaved shrubs, alt. c. sea-level, 1 x 1984, A. G. Miller 6508 (holo. GOET, iso. E-n.v.).

SULTANATE OF OMAN. Wadi just above cliffs leading to Schuwaimayah, c.17°55'N 55°35'E, alt. c.300m, 27 ix 1984, Miller 6400 (GOET ex E); Sharbithat, by airstrip, 17°56'N 56°01'E, low limestone plateau, c.50m, 29 ix 1984, Miller 6468 (GOET ex E); 16km W of Ras Madraka, 19°01'N 57°47'E, plateau with sand and gravel on limestone, with trees of *Acacia tortilis* and *Salvia* sp. nov., c.60m, 2 x 1984, Miller 6514 (GOET ex E).

In the schedae the collector has given a lively picture of the main characters of the habit: 'Mat or carpet forming prostrate silver-leaved perennial, peduncles erect to 3cm, flowers pale yellow' (combined from the different collections). According to the involucre and the achene, *Pulicaria pulvinata* has the key-characters of sect. *Pulicaria* though no close relatives can be recognized in this group. There seems to be a much closer affinity to some members of sect. *Platychaeta*, although the pappus does not show the characters typical for this section as the pappus hairs are barbellate-subplumose and not distinctly united. The species most similar (especially in vegetative characters), and perhaps related, are *P. gnaphalodes* and *P. salviifolia*. Both are widespread in the Near East, *P. gnaphalodes* occurring in Arabia on Bahrain Island and in Qatar. Nevertheless, the indumentum with long hairs parallel to the midrib of the leaves, the prostrate much-branched stems with small densely arranged leaves, and short peduncles with small capitula are characters which combine to make the new species one of the most distinctive of the genus. *P. pulvinata* comes from a botanically unexplored area which is revealing several new species. The climate of the region is very harsh, plants receiving most moisture from the frequent fogs and heavy dews that occur mainly in spring and autumn (Miller, in litt.).

***Pulicaria omanensis*** Gamal-Eldin in *Phanerogamarum Monographiae* 14:230 (1981).

Type: Sultanate of Oman, Dhofar, Ayan [Ayun] cross roads, 600m, 6 v 1978, Berkeley 23 (holo. E).

When this species was first described it was known only from the type collection, but additional collections have been made by A. G. Miller, again in the coastal region:

SULTANATE OF OMAN. Dhofar, Jebel Qara, Ayun Road, rocky slopes dominated by *Acacia* sp., c.800m, 25 ix 1979, Miller 2226 (E); Jebel Qara, Ayun Pools, dry rocky slopes, *Boswellia* zone, c.500m, 25 ix 1979, Miller

2241 (E); ENE of Mirbat, 17°01'N 54°44'E, low, dry hills with *Acacia tortilis*, *Commiphora* sp., etc., straggling perennial, flowers pale yellow, c.100m, 19 ix 1984, Miller 6177 (GOET ex E); just north of Manston on Mudhai road, 17°04'N 53°22'E, wadi bed and sides on limestone plain, in *Boswellia sacra* zone, perennial, woody based clumps to 30cm, flowers yellow, c.900m, 22 ix 1984, Miller 6302 (GOET ex E); 49km S of Thamrait on Mudhai road, 17°38'N 53°33'E, broad sandy bottomed wadi bed, c.450m, 21 ix 1984, Miller 6240 (GOET ex E, young branches densely hairy, but bracts also subulate); flat limestone plateau near Ras Madraka, 19°00'N 57°48'E, with *Periploca aphylla*, *Zygophyllum* sp., etc., clumps to 20cm, flowers yellow, c.100m, 2 x 1984, Miller 6521 (GOET ex E, leaves densely hairy, bracts not violet); Bwai, 19°38'N 57°25'E, limestone cliffs near water hole and sandy wadi bed dominated by *Prosopis*, *Nannorrhops ritcheana*, *Phoenix* and *Acacia tortilis*, c.100m, 13 x 1984, Miller 6570 (GOET ex E).

The species is characterized by flat (not distinctly thickened) lanceolate-spathulate leaves which may have some small teeth, a moderately dense or lax indumentum of long hairs, and linear involucre bracts with subulate mostly violet tips. Of the new collections Miller 6240 and 6521 differ slightly by the denser whitish indumentum and bracts which are not distinctly subulate and violet, but they surely belong to *P. omanensis*.

A new collection from NE Oman (Miller 6532) differs from the type and the other Dhofar specimens in several vegetative characters. The leaves are narrower, thickened and folded, and only sparsely hairy. The involucre bracts are of exactly the same type as in Miller 6521. It can best be recognized as representing a new subspecies.

***Pulicaria omanensis* Gamal-Eldin subsp. *milleri* Gamal-Eldin, subsp. nov.** (Fig. 4).

A subsp. *omanensis* differt foliis ramorum crassiusculis, plicatis, obtusis; phyllis involucri omnibus linearibus non distincte subulatis et non violaceis.

Type: Sultanate of Oman, 10km W of Duqm on Al Ajaiz road, limestone hills dominated by *Acacia tortilis*, c.50m, low shrub to 30cm, flowers yellow, 2 x 1984, A. G. Miller 6532 (holo. E, iso. GOET ex E).

In leaf characters this new subspecies closely approaches *P. steinbergii* Gamal-Eldin (Somalia, Migiurtina), a species which is otherwise very different, especially by having homogamous heads and obtuse bracts. The new subspecies, which is named after the collector, comes from a rather inaccessible spot (Miller, in litt.).

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FIG. 4. *Pulicaria omanensis* subsp. *milleri*. Holotype (E).

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