

LONDESIA, A DISTINCT GENUS FROM BASSIA (CHENOPODIACEAE)

M. ASSADI

Assadi, M. 2000 08 01: *Londesia*, a distinct genus from *Bassia* (*Chenopodiaceae*). -*Iran. Journ. Bot.* 8 (2): 233-240. Tehran.

Londesia eriantha has sometimes been included in *Bassia eriophora* as a synonymy or as a variety of it. It has sometimes been known as a distinct species but under the genus *Bassia*. Both species occur in Iran and they are morphologically distinct and geographically separated. *Londesia eriantha* has no appendages on perianth segments and it distributes from C. Asia to the centre of Iran. *Bassia eriophora* bears rather long spines on perianth segments and it has a distribution from N. Africa eastwards through Palaestine and Arabia to S. of Iran. As appendages of Perianth in this group and also the whole *Chenopodiaceae* family is a generic diagnostic character, the two species are kept in different genera, i. e. *Londesia* and *Bassia*.

Mostafa Assadi, Research Institute of Forests and Rangelands, P. O. Box 13185-116, Tehran, Iran.

Key Words. Chenopodiaceae, Londesia, Bassaia, Iran, Taxonomy

جنس *Londesia* جنسی مستقل از جنس *Bassia*

مصطفی اسدی

گونه *Londesia eriantha* گاهی مترادف گونه *Bassia eriophora* و گاهی به عنوان وارسته‌ای از آن تشخیص داده شده است. گاهی نیز به عنوان گونه‌ای مستقل، اما تحت نام جنس *Bassia* شناخته شده است. هر دو گونه در ایران انتشار دارند و از نظر ویژگیهای ظاهری قابل تفکیک و از نظر پراکندگی جغرافیایی، منطقه انتشار مستقلی دارند.

گونه *Londesia eriantha* هیچگونه زائیده‌ای روی گلپوش ندارد و انتشار آن منحصر به آسیای مرکزی تا نواحی مرکزی ایران است، در صورتیکه در گونه *Bassia eriophora* قطعات گلپوش حامل سوزن‌های نسبتاً بلندی هستند و انتشار آن از شمال آفریقا به طرف شرق از طریق فلسطین و عربستان به جنوب ایران می‌رسد. از آنجائیکه زائیده گلپوش در گروه مورد مطالعه و همچنین تیره *Chenopodiaceae* ویژگی متمایز کننده‌ای در سطح جنس است، دو گونه مذکور از همدیگر تفکیک می‌گردند و تحت نام دو جنس مختلف نیز بنامهای *Londesia* و *Bassia* آورده می‌شوند.

INTRODUCTION

The plant family *Chenopodiaceae* in Iran has been revising for the preparation of Flora of Iran. Some of the annual plants with densely woolly inflorescence had currently been named *Londesia eriantha* or *Bassia eriophora*. They usually have been treated in the literature dealing with flora of Iran as synonymy. But, studies showed that they are distinct genera.

HISTORY

The genus *Londesia* Fisch. & C. A. Mey. were described originally with a single species, *L. eriantha* Fisch. & C. A. Mey. The type locality of the species was from eastern shores of Caspian sea (Iljin 1936).

Kochia eriophora Schrad. is another taxon which has been dealt in relation to the former species differently by different authors. It has been currently transferred to the other genera, i. e. *Bassia eriophora* (Schrad.) Aschers., *Echinopsilon eriophorus* (Schrad.) Moq., *Chenolea eriophora* (Schrad.) Aitch. & Hemsl. Boissier (1879) put the name *Kochia eriophora* and other appropriate combinations in the synonymy list of *Kochia latifolia* Frsen. and gave the distribution of Arabia, Syria, Mesopotamia, S. Iran and Baluchistan for it. He

recognized a variety for the species and named it *K. latifolia* var. *inermis* Boiss. and put *Londesia eriantha* as the synonymy of it. This variety was described as having no appendages on perianth. Boissier, l. c. apparently mentioned the type specimen of *Kochia eriophora* under *K. latifolia* var. *inermis*, but the name of *K. eriophora* as the synonymy of *K. latifolia* by a mistake.

Scott (1978) recognized *Bassia eriophora* and *Bassia eriantha* (Fisch. & C. A. Mey.) Kuntze under different sections, namely sec. *Bassia* and sec. *Londesia* (Fisch. & C. A. Mey.) Scott.

Hedge (1996) used the name *B. eriophora* and put the name *Londesia eriantha* as a synonymy of it.

TAXONOMIC CONCLUSION

Most of the authors dealing with *Bassia eriophora* or *Londesia eriantha* or appropriate synonymies have given different distributions for both or either of the species.

Central Asian flora only contain *Londesia eriantha* and mainly record it as a central Asiatic element (cf. Iljin, l. c.; Bondarenko & Nabiev 1972 and Grubov 1966).

Most of the floras from N. Africa to

Arabia have mainly mentioned *Bassia eriophora* (Zohary 1966 and Bolous 1996). Tackholm (1956) in student Flora of Egypt is an exceptional. She has more to *Bassia eriophora* a variety for it named var. *eriantha* as having no appendage on the perianth. She gave no basionym or author for this variety. However, this needs further studies.

Floras have been dealing with Iran usually have been confronted with the problem more straightward as both N. African-Arabian *Bassia eriophora* and C. Asian *L. eriantha* occur in the country. Here, the two species usually have been synonymized or known as distinct varietas (cf. Boissier, l. c.; Parsa 1949 and Hedge, l. c.)

In this study the material from all of Iran were studied. It is clear that according to the fruit characters and also geographical distribution, the materials are divisable into two groups, only similar in habit. Materials from southern Iran in Saharo-Sindian region bear well developed spiny appendages on perianth segments, perianth becoming woody in fruiting stage and flowers hermaphrodite, while materials from central and northern part of the country in the Irano-Turanian region have no spines or appendages on perianth and

flowers are hermaphrodite or female.

Scott (1978) used the geus *Bassia* in a broad scence, and included in the genera *Kochia* Roth and *Londesia*. But, as in *Chenopodiaceae* and also in this group appendages of perianth have been used traditionally in generic delimitation, *Bassia*, *Kochia*, and *Londesia* are separated as distinct genera. Perianth segments without appendages in *Londesia*, with wing or wing like outgrowth in *Kochia* and with spiny appendages on *Bassia*.

TAXONOMIC TREATMENT

Bassia eriophora (Schrad.) Aschers. in Schweinf., Beitr. Fl. Aetiop. 1: 187 (1867); fig. 1.

Syn.: *Kochia eriophora* Schrad., Neues Journ. Bot. 3 (3-4) 86, tab. 3 (1809); *K. latifolia* Fresen., Mus. Sencheb. 1: 179 (1834); *Echinopsilon eriophorus* (Schrad.) Moq. in DC. Prodr. 13 (2): 135 (1849).

Annual. Stems single or more often many, up to 40 cm long. Leaves 7-17 x ca. 2 mm, linear, obtuse. Flowers hermaphrodite, up to 6 in woolly glomerules along the stems. Perianth segments 5, connate up to near the apex, bearing 3-4 mm straight or curved spines at the back in fruiting stage. Style 0-0.5 mm long. Stigmas 2. Embryo

horizontal.

Selected specimens. Fars: 18 km from Lar to Bastak, 1000 m, Assadi & Sardabi 41767; 125 km from Darab to Bandarabbas, 620 m, Riazi 7829. -Hormozgan: 110 km from Bandarabbas to Hajiabad, after the tunnel, 1000 m. Assadi 73703. -Bushehr: 14 km from Deylam to Hendijan, 50 m, Maassoumi & Abouhamzeh 51934. -Khuzistan: Ahvaz, 20 km to Hamidieh, Ghaffari 47164; 10 km from Ahvaz to Susangerd, 20 m, Mozaffarian 53429. -Kerman: 22 km S. of Kahnuj, 450 m, Babakhanlou 22912. -Baluchistan: Bazman, 1200 m, Assadi 23023; Ghasreghand, 16 km on Rask road, 450 m, Foroughi 10772. -Sistan: Kuhe Khajeh, 500-630 m, Valizaeh & Ramak Maassoumi 1003.

Londensia eriantha Fisch. & C. A. Mey., Ind. Sem. Hort. Petrop. 2: 40 (1835); fig.2.

Syn.: *Kochia latifolia* Fresen. var. *inermis* Boiss. Fl. Or. vol. 4: 927 (1879); *Bassia latifolia* (Fresen.) Aschers. & Schweif. var. *eriantha* (Fisch. & C. A. Mey.) Dinsm. (1932) [see Parsa, Fl. de l Iran vol. 4: 1015 (1949)].

Annual. Stems simple or more often many, up to 25 cm high. Leaves 10-30 x 2-4 mm, linear-lanceolate or lanceolate, acute; floral

leaves ovate or ovate-lanceolate. Flowers hermaphrodite or female, up to 6 in woolly glomerules along the stems. Perianth segments 5, connate up to near the apex, membranous, without appendages, adnate to ovary. Style absent. Stigmas 2 or rarely 3. Embryo horizontal or rarely oblique.

Selected specimens. Esfahan: Khur, Arusan, Khonj to Dadkin, 950-1100 m, Nowrouzi 3336. -Yazd: 63 km to Bafgh, on the road from Yazd, 1400 m, Assadi & Bazgosha 55979. -Kerman: 25 km S. of Golbaf, 2000 m, Assadi & Amirabadi 66510; Gharyotolarab, towards Kuhe Hazar, 2350 m, Foroughi & Assadi 16202. -Baluchistan: 120 km from Zahedan to Bam, after Nosratabad pass, 1200 m, Assadi 22763. -Khorasan: Ferdous to Tabas, 1100-1250 m, Rajamand & Bazargan 31965. -Semnan: 18 km ESE Delbar toward Ahmadabad, 820 m, Rechinger 50547; 67 km from Semnan to Garmsar, 860 m, Amin & Mousavi 2585. -Tehran: 25 km from Karvansaraye Shahabbasi to Varamin, 850 m, Assadi & Varneke 17149.

ACKNOWLEDGMENT

The author wishes to thank Miss. M. Nowbakht for the preparation of illustrations.

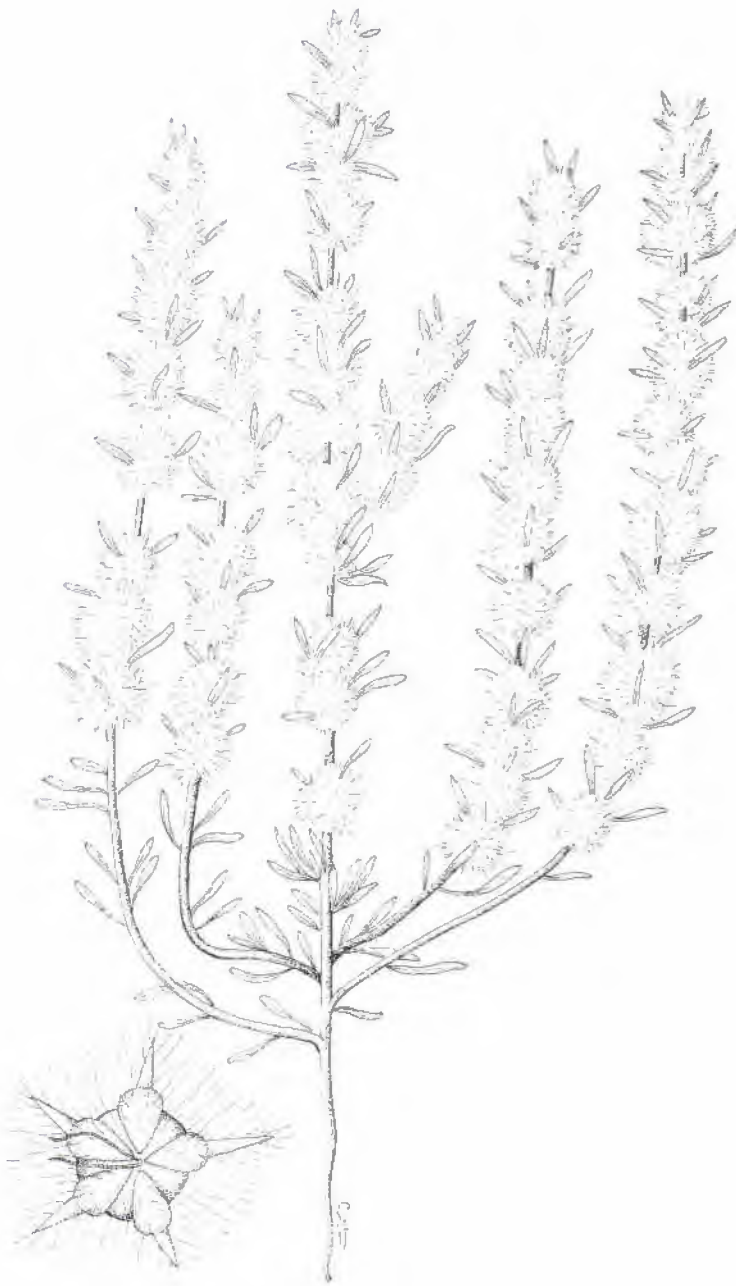


Fig. 1. *Bassia eriophora* (x1.3); fruiting perianth (x4).

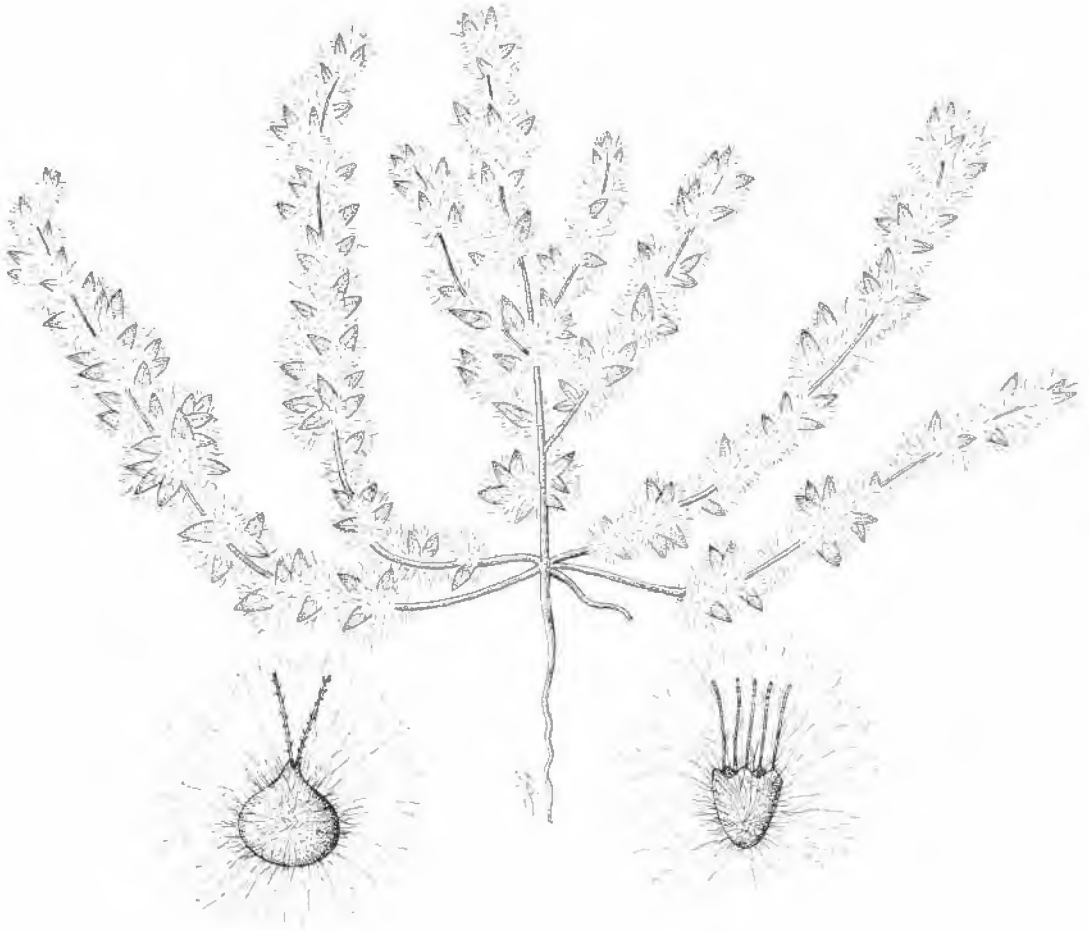


Fig. 2. *Londesia eriantha* (x0.6); ovary and perianth (x6).

REFERENCES

- Aitchison, J. E. T. 1888: The botany of the Afghan delimitation comission. -Trans. Linn. Soc. London ser. II, vol. 3: 102.
- Boissier, E. 1879: *Kochia* in *Flora Orientalis* vol. 4: 922-927.
- Bolous, L. 1996: *Bassia* in *Flora of the Arabian Peninsula and Socotra* vol. 1: 249-251.
- Bondarenko, O. N. & Nabiev, M. M. 1972: *Londesia* in *Conspectus Flora Asiae Mediae* vol. 3: 58. -Taschkent.
- Grubov, V. I. 1966: *Londesia* in *Plantae Asiae Centralis* fas. 2: 43. -Mosqua & Leningrad.
- Iljin, M. M. 1936: *Londesia* in V. L. Komarov *Flora of the U. S. S. R.* vol. 6: 124. -Moskva & Leningrad.
- Moquin-Tandem 1849: *Echinopsilon* in de Candolle *Prod. Syst. Nat. Regni Veg.* 13: 134-137.
- Scott, A. J. 1978: A revision of the *Camphorosmoideae* (*Chenopodiaceae*). -*Fedd. Rep.* 89 (2-3): 101-119.
- Tackholm, V. 1956: *Bassia* in *Students Flora of Egypt*, 428. -Cairo.
- Zohary, M. 1966: *Bassia* in *Flora Palaestina* vol. 3: 152-153. -Jerusalem.