

Taeckholmia, a New Genus of Compositae from Canary Islands

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ABSTRACT

The new genus *Taeckholmia* BOULOS, related to *Sonchus*, is described. It consists of seven species divided upon two subgenera, *Taeckholmia* and *Pseudodendrosonchus* BOULOS. The genus is endemic to the Canary Islands. Several of the species have previously been included in *Sonchus*, from which *Taeckholmia* differs in the frutescent habit, the not auricled leaves crowded at the ends of the vegetative branches, the small capitula with few flowers, the few involucre scales of the capitula, the small achenes, and the different pollen grains. — New species and combinations: *Taeckholmia pinnata* (L. f.) BOULOS, *T. capillaris* (SVENT.) BOULOS, *T. canariensis* BOULOS, *T. microcarpa* BOULOS, *T. heterophylla* BOULOS, *T. regis-jubae* (PITARD) BOULOS, and *T. arborea* (DC.) BOULOS.

Two new genera, distinguished from the genus *Sonchus* L., were described: *Embergeria* from Chatham Islands (New Zealand) and Australia (BOULOS 1965 a), and *Babcockia* from Canary Islands (BOULOS 1965 b). The present paper reports on a third new genus related to *Sonchus* from Canary Islands as well as on the relationships between these new genera and the genus *Sonchus*.

DAVID DON (1829) described the genus *Atalanthus* with two species segregated from *Prenanthes* L., viz. *Prenanthes pinnata* L.f. and *P. spinosa* VAHL. In his generic description, DON gave a number of characters which partly fit *Prenanthes pinnata* and partly fit *P. spinosa*. Later on, the authors considered the latter as a *Launaea* species (e.g. MURBECK 1923 and AMIN 1957) and the former as a *Sonchus* species (e.g. SCHULTZ BIPONTINUS 1849—1850, PITARD & PROUST 1908, and BOULOS 1960). POMEL (1874) included 7 other species within the genus *Atalanthus*, which again should be classified under the genus *Launaea* CASS. This confirms the writer's idea that the major characters given to *Atalanthus* in DON's diagnosis refer to *Launaea* rather than to

Sonchus. However, some authors erroneously consider *Atalanthus* as a synonym of *Sonchus*, e.g. HOOKER & JACKSON (1895); others classify *Atalanthus* as subgenus or section of *Sonchus*, e.g. DE CANDOLLE (1838). AMIN (1957) in her classification of the genus *Launaea*, correctly lists the genus *Atalanthus* D. DON among the synonyms of subgenus *Acanthosonchus* (SCH. BIP.) O. HOFFM. of *Launaea*. *Atalanthus* should consequently be treated as a synonym of *Launaea*, with *Atalanthus spinosus* as its type species. The genus *Atalanthus* was also typified by *A. spinosus* (FORSK.) POMEL (KIRPICZNIKOV 1964).

The revisional study of the genus *Sonchus* (BOULOS 1963) shows that *Sonchus leptcephalus* CASS. [= *Prenanthes pinnata* L.f., *Atalanthus pinnatus* (L.f.) D. DON] and some allied species, which form together a group of endemic plants in the Canary Islands, are different in many respects from the rest of *Sonchus* species. The main differences between these plants that characterize them from *Sonchus* are as follows:

1. The frutescent habit of the plants, with solid often stick-like branches.

2. Leaves not auricled, \pm in dense groups at the summits of vegetative branches or at the base of flowering shoots, deeply dissected into narrow lobes.

3. Small size of the capitulum which is usually 3—7 mm long and 2—3 mm broad (in one species 10—12 mm long and 3—4 mm broad).

4. The low number of flowers per capitulum (12—29). In *Sonchus* the lowest number is about 40, while in most of its species the number ranges from about 100 to 400.

5. The low number (10—20) of involucreal scales per capitulum (in one species 27—30). The ratio between the number of flowers and the number of involucreal scales is about 1:1; this ratio is much higher (2—8:1) in *Sonchus*.

6. The small size of achenes (1.7—2.5 mm long, and about 0.6 mm broad) which are attenuated towards both ends and are of variable shape within the same capitulum. The achenes are provided at their upper end with a protuberance surrounded by a white disc.

7. The morphology of the pollen grains shows a characteristic type with basic differences from all *Sonchus* species (PONS & BOULOS, in press).

This group of plants, typified by *Sonchus leptcephalus* CASS., should therefore have a new generic name since *Atalanthus* could not be used any more as a legitimate generic epithet.

It is proposed to name this new genus *Taeckholmia* in honour of Dr. VIVI TÄCKHOLM, Professor of Systematic Botany, Faculty of Science, Cairo University, who inspired and encouraged the writer to study this group of plants.

Taeckholmia BOULOS gen. nov.

Frutex erectus ad 2 m altus, praesertim ad basim ramosus. *Folia* ad apicem rami sterili vel basim rami floriferi dense fasciculata, glabra vel ad basim juvenalia raro puberula, non auriculata, in lobis angustissimis profunde dissecta. *Capitula* parva, numerosa, pauciflora; corolla flava, ligula tubo longiora. *Bractae* involucri non vel vix imbricatae. *Achenium* parvum, rugosum, compressum, utrinque plus minusve 4-costatum, apice et basin versus attenuatior; forma achenia in eadem capitulum variabilis. *Pappus* deciduus, disco albo cum protuberatio centrali insidens; setae scabrosae formae diversae. *Pollinis* granulae typi speciali characteristici. $n=9$, $2n=18$.

Frutescent erect plants, 50—200 cm high, branching mainly at the base, branches solid, often stick-like; *leaves* \pm densely grouped at the summits of vegetative branches or at the base of flowering shoots, glabrous or rarely pubescent at the base of the juvenile ones, not auricled, 2—20 cm long, deeply dissected into narrow lobes 0.2—2 mm broad (rarely up to 6 mm broad); *peduncle* 3—30 mm long, \pm 1 mm diameter, cylindrical, hollow, with \pm 4 bracts; *heads* numerous, 3—7 mm long, rarely longer, 2—4 mm in diameter before anthesis, longer and broader during anthesis; *flowers* 12—29, yellow, ligule longer than corolla tube; *involucral scales* 10—30, not or slightly imbricated, the outer scales 1—4 mm long (rarely longer), \pm triangular, with thick base, the inner ones 5—9 mm long, narrowly rectangular, thin, with 4 intermediate ones in the species with imbricated scales; *achene* 1.7—2.5 mm long, \pm 0.6 mm broad, attenuated towards both ends, rugose, compressed, with \pm 4 ribs on each side, of variable shape within the same capitulum, thus narrowly oblanceolate, \pm narrowly elliptic, \pm narrowly rectangular, erect or curved; *pappus* deciduous, 3.5—6 mm long, inserted on a white disc with a central protuberance, composed of different types of scabrous hairs; pollen grains of a special characteristic type; $n=9$, $2n=18$.

TYPE SPECIES: *Taeckholmia pinnata* (L.f.) BOULOS comb. nov.

BASEONYM: *Prenanthes pinnata* L.f. Suppl. Plant. 1781: 347.

Two subgenera are recognized:

I. Subgenus **Taeckholmia**

Frutescens. *Folia* in lobis 0.2—1 mm latis dissecta. *Capitulum* 3—7 mm longum, 1.2—3 mm latum. *Flores* flavi, 12—19 in capitulo. *Ligula* corollae tubo duplo vel plus longiora. *Bractae involucri* 10—15, interiorae et exteriorae dissimiles. *Achenium* 1.7—2.5 mm longum. *Pappus* 2.5—2.75 mm longus, deciduus.

TYPE SPECIES: *Taeckholmia pinnata* (L.f.) BOULOS.

Frutescent: leaves dissected into lobes 0.2—1 mm broad; *capitulum* 3—7 mm long, 1.2—3 mm broad; *flowers* yellow, 12—19 per head; *ligule* double or more the length of corolla tube; *involucral scales* 10—15, distinguished into outer and inner scales; *achenes* 1.7—2.5 mm long; *pappus* 2.5—2.75 mm long, deciduous.

II. Subgenus **Pseudodendrosonchus** BOULOS subgen. nov.

Frutescens. *Folia* in lobis 1—6 mm latis dissecta. *Capitulum* 6—12 mm longum, 3—4 mm latum. *Flores* flavi, 15—29 in capitulo. *Ligula* corollae tubo (sed minus duplo) longiora. *Bractae involucri* 19—30, interiorae, intermediae et exteriorae dissimiles. *Achenium* plus minusve 2.5 mm longum. *Pappus* 4—6 mm longus, deciduus.

TYPE SPECIES: *Taeckholmia heterophylla* BOULOS sp. nov.

Frutescent, *leaves* dissected into lobes 1—6 mm broad; *capitulum* 6—12 mm long, 3—4 mm broad; *flowers* yellow, 15—29 per head; *ligule* longer than (but less than double) the corolla tube; *involucral scales* 19—30, distinguished into outer, intermediate and inner scales; *achene* \pm 2.5 mm long; *pappus* 4—6 mm long, deciduous.

KEY TO THE SUBGENERA

- 1 A. Leaf lobes 0.2—1 mm broad, ligule double or more the length of corolla tube *Taeckholmia*
 1 B. Leaf lobes 1—6 mm broad, ligule less than double the length of corolla tube *Pseudodendrosonchus*

KEY TO THE SPECIES

Subgenus *Taeckholmia*

- 1 A. Leaf lobes flat, 0.5—1 mm broad, head over 4 mm long
 2 A. Flower 7.5—9 mm long, pappus 3.5—5.75 mm long .. *T. pinnata* 1.
 2 B. Flower 7 mm long, pappus 2.5—3 mm long *T. canariensis* 3.



Fig. 1. *Taeckholmia pinnata* (L. f.) BOULOS. — Aspect of the plant in nature: Monte Coello, Gran Canaria, Canary Islands. Photo L. BOULOS, May 1961.

- 1 B. Leaf lobes \pm capillary, less than 0.5 mm broad, head 3—4 mm long
 - 3 A. Peduncle up to 3 mm long, achene 2—2.2 mm long *T. capillaris* 2.
 - 3 B. Peduncle up to 1.5 cm long, achene 1.7—1.8 mm *T. microcarpa* 4.

Subgenus *Pseudodendrosonchus*

- 1 A. Number of flowers inferior to 20 per head, leaves of diverse forms on the same plant *T. heterophylla* 5.
- 1 B. Number of flowers superior to 20, leaves more or less of the same form
 - 2 A. Leaf lobes broadly spaced, 1.5—2 mm broad *T. regis-jubae* 6.
 - 2 B. Leaf lobes narrowly spaced, up to 4 mm broad *T. arborea* 7.

1. ***Taeckholmia pinnata*** (L.f.) BOULOS

Prenanthes pinnata L.f. Suppl. Plant. 347, 1781; non *Sonchus pinnatus* AIT. Hort. Kew. (ed. 1) 3:116, 1789.

Chondrilla pinnata LAM. Dict. 2:79, 1786.

Sonchus leptcephalus CASS. in Dict. Sc. Nat. 43: 281, 1826.

Atalanthus pinnatus D. DON, Edinb. New Phil. J. 6: 311, 1829.

DISTRIBUTION: Gran Canaria and Tenerife, Canary Islands.

CHROMOSOME NUMBER: $n=9$, $2n=18$ (ROUX et BOULOS).

2. ***Taeckholmia capillaris*** (SVENT.) BOULOS comb. nov.

Sonchus capillaris SVENT. Addit. Fl. Canar. 1: 85, t. 35, 1960.

DISTRIBUTION: Tenerife, Canary Islands.

3. ***Taeckholmia canariensis*** BOULOS sp. nov.

Sonchus filifolius SVENT. Addit. Fl. Canar. 1: 83, t. 34, 1960; nom. illegit., art. 37, Code Montreal 1961.

Frutescens, robustus, 0.5—1 m altus, praesertim ad basim ramosus. *Rami* veterum lignosi solidi, cortice nigris. *Folia* dense fasciculata, praeter ad basim glabra, 10—15 cm longa, in lobis angustis, 6—12-jugis, plus minusve oppositis dissecta; folia ad basim inflorescentiae minori. *Pedunculus* 4—20 mm longus, 2—4-bracteatus. *Flores* 12—16 in capitulo, flavi. *Bractae involucri* 10—13. *Achenium* 2—2.5 mm longum, forma diversa. *Pappus* 2.5—3 mm longus, deciduus, setae scabrosae, formae diversae.

Frutescent robust 0.5—1 m high, branched especially at the base, old branches solid, dense, with dark coarse bark, young branches thin, cylindrical. *Leaves* glabrous except at the base, forming dense tufts at the top of old branches or at the base of young shoots, 10—15 cm long, dissected into 6—12 pairs of linear, \pm opposite, 2—3 cm long, 0.5—1 mm broad lobes; leaf base triangular, not auricled, slightly white-tomentose; leaves smaller towards the inflorescence and at the base of young shoots. *Peduncle* 2—20 mm long, with 2—4 bracts. *Head* 4—5 mm long, 2—2.5 mm broad before anthesis, 5—7 mm long and \pm 8 mm broad during anthesis; number of flowers 12—16. *Involucre* of 10—13 scales, 3—5 triangular outer ones, 1—2.5 mm long, and 7—8 linear inner ones, 5—6 mm long, with membranous margins and obtuse ciliated apex. *Corolla* yellow, 7 mm long; ligule 4.5—5 mm long, 1—1.5 mm broad, with $5 \pm$ acute teeth; corolla tube 2—2.5 mm long, hairy and broadest at its junction with the ligule; staminal tube 2.5—2.8 mm long; style branches \pm 1.5 mm long, brownish, densely hairy. *Achene* 2—2.5 mm long, 0.5 mm broad, of variable shape: linear-elliptic, straight or curved, with the broadest part at the middle or towards either end, compressed, wrinkled, with 3—5 irregular longitudinal ribs,



Fig. 2. *Taeckholmia capillaris* (SVENT.) BOULOS. — Barranco de Tejina, Tenerife, 18.10.1957, leg. E. SVENTENIUS (Typus, CAI!).

upper end provided with a small white protuberance situated over a white disc on which the pappus is inserted. *Pappus* deciduous, 2.5—3 mm long, formed of different types of scabrous hairs; major type long, with multicellular base, provided with lateral curved spines, attenuate into a uni-, bi-, or tri-cellular apex; minor type shorter, thinner, with well developed lateral spines and an apex of anchor-like recurved cells; intermediate types of hairs also occur notably by their size and length.

HOLOTYPE: Valle Gran Rey, Gomera, Canary Islands, 25.7.1962, BOULOS (CAI!).

DISTRIBUTION: Gomera, Canary Islands.

4. *Taeckholmia microcarpa* BOULOS sp. nov.

Frutescens, robustus, 0.5—1 m altus, praesertim ad basim ramosus. *Rami* veterum lignosi solidi. *Folia* dense fasciculata, glabrata, 8—20 cm longa, in lobis angustis, 3—6-jugis, distantibus dissecta; folia ad basim inflorescentiae minori. *Pedunculus* 3—15 mm longus, 2—4-bracteatus. *Capitula* parvi numerosi in inflorescentiam copiose ramosum corymbosam disposita. *Flores* 12—14 in capitulo. *Bractae* involucri 12—13. *Achenium* 1.7—1.8 mm longum. *Pappus* 3.5—3.75 mm longus, deciduus, setae scabrosae formae diversae. $2n=18$.

Frutescent robust, 0.5—1 m high, mainly branched at the base, old branches solid. *Leaves* glabrous, forming dense tufts at the upper part of the plant, thus mainly towards the top of old branches and at the base of flowering shoots, 8—20 cm long, dissected into 3—6 pairs of lobes; lobes linear, widely spaced, irregularly arranged, 2—8 cm long, 0.2—0.4 mm broad, terminal lobe longer; leaf base triangular, not auricled; leaves smaller towards the inflorescence. *Peduncle* 3—15 mm long, ± 0.3 mm broad, hollow, with 2—4 bracts. *Heads* numerous, in a richly branched corymbose inflorescence, before anthesis ± 4 mm long, ± 1.2 mm broad, during anthesis up to 6 mm long; number of flowers 12—14. *Involucre* of 12—13 scales, outer ones 4—5, triangular, 1—1.5 mm long, inner ones 8—9, linear-lanceolate, 5—6 mm long. *Corolla* yellow, 7 mm long; ligule 5 mm long, 1.5 mm broad, with 5 acute hairy teeth; corolla tube 2 mm long, hairy and broadest at its junction with the ligule; staminal tube 3 mm long; style branches 1.2 mm long, densely hairy. *Achene* brownish, 1.7—1.8 mm long, 0.5 mm broad, attenuated towards both ends and of variable shape in the same capitulum, slightly compressed, with 3—5 longitudinal ribs. *Pappus* 3.5—3.75 mm long, deciduous, formed of different types of scabrous hairs comparable to those of *T. canariensis*. $2n=18$.

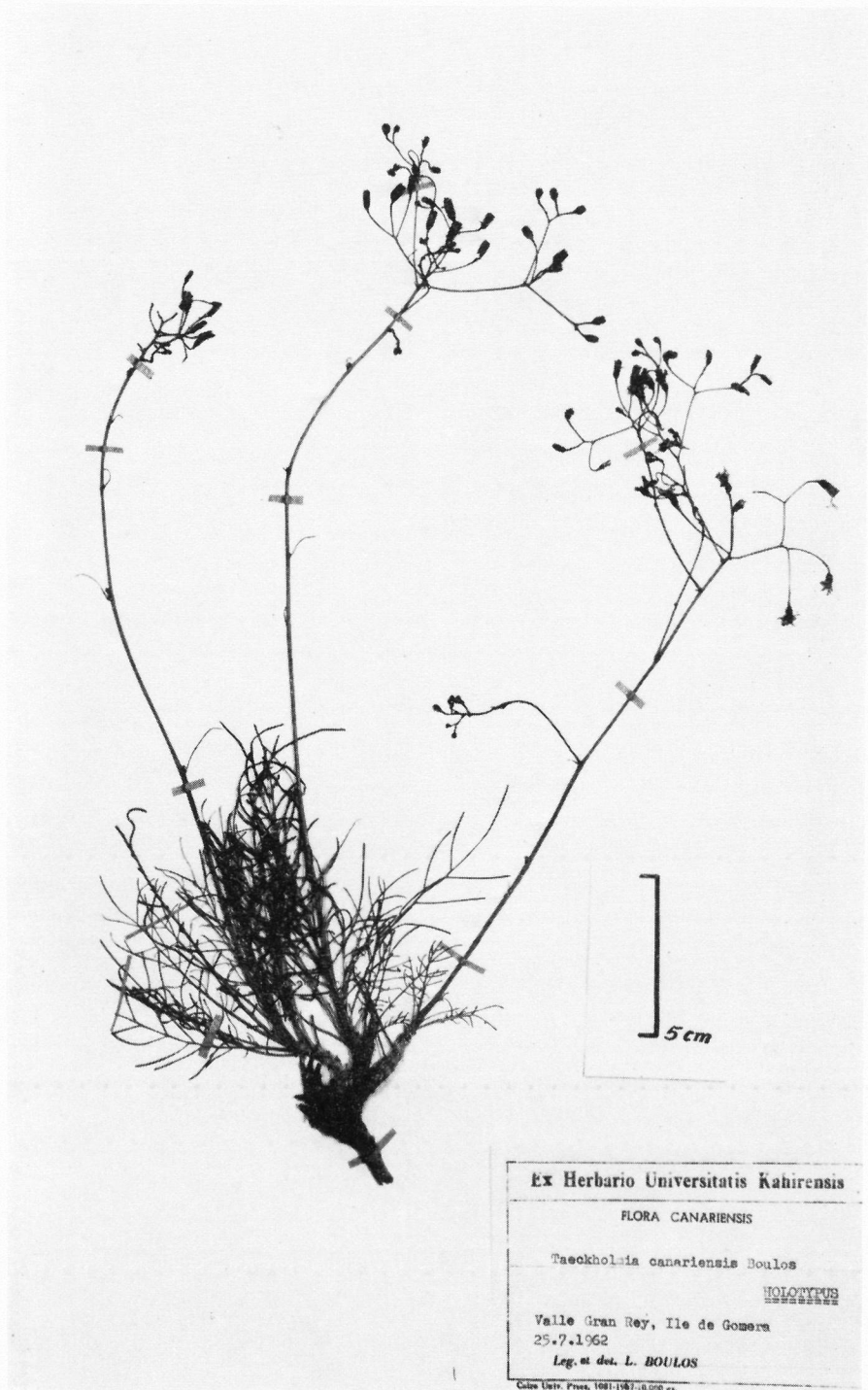


Fig. 3. *Taeckholmia canariensis* BOULOS. — Valle Gran Rey, Gomera, Canary Islands, 25.7.1962, leg. L. BOULOS (Typus, CAI!).

HOLOTYPE: Güimar, Tenerife, Canary Islands, 8.6.1961, BOULOS (CAI!).

DISTRIBUTION: Tenerife, Canary Islands.

CHROMOSOME NUMBER: $2n=18$ (ROUX & BOULOS).

5. *Taeckholmia heteropylla* BOULOS sp. nov.

Frutescens, 30—80 cm altus, rami veterum basalium crassi. *Folia* multiforma, glabrata, 8—20 cm longa, in lobis linearis vel anguste-oblongis, integris, subalternantibus, plus minusve 7-jugae dissecta. Lobi 1—4 cm longi, 1—6 mm lati. Apex loborum latum obtusus, loborum angustum acutus. *Pedunculus* 1—2 cm longus, plus minusve 5-bracteatus. *Flores* flavi plus minusve 15 in capitulo. *Bractae involucri* plus minusve 20, imbricatae. *Achenium* brunneolum, plus minusve 2.4 mm longum, formae variabilis. *Pappus* plus minusve 4 mm longus, deciduus, setae scabrosae formae diversae. $2n=18$.

Frutescent erect, 50—80 cm high, old basal branches solid, voluminous, young branches hollow, thin. *Leaves* glabrous, multiform, in groups at the summit of vegetative branches or at the base of inflorescence, 8—20 cm long, dissected into ± 7 pairs of lobes, these entire, subalternate, linear or narrow-oblong, 1—4 cm long, 1—6 mm broad, the broad lobes with obtuse, the narrow ones with acute apex. *Peduncle* 1—2 cm long, 0.5—1 mm in diameter, hollow, with ± 5 bracts. *Head* ± 6 mm long, ± 3 mm broad when closed, number of flowers ± 15 . *Involucre* of ± 20 imbricated scales, distinguished into: 7—8 outer triangular ones, 2—5 mm long, ± 1 mm broad, with thick base and obtuse ciliated apex; 6—7 intermediate linear ones, 8—9 mm long, ± 1 mm broad, with scarious margins and obtuse ciliated apex; 6—7 inner ones, ± 8 mm long, ± 0.8 mm broad, thin scarious with obtuse ciliated apex. *Corolla* yellow, ± 8 mm long; ligule ± 5 mm long, 1.2 mm broad, with 5 obtuse teeth; corolla tube ± 3 mm long, hairy at its junction with the ligule; staminal tube 3 mm long; style branches ± 1 mm long, densely hairy. *Achene* brownish, ± 2.4 mm long, ± 0.75 mm broad, of variable shape in the same head, wrinkled, compressed, with ± 2 principal ribs on each side. *Pappus* deciduous, ± 4 mm long, formed of different scabrous hairs comparable to those of *T. canariensis*. $2n=18$.

HOLOTYPE: Agulo, Gomera, Canary Islands, 23.7.1962, BOULOS (CAI!).

DISTRIBUTION: Gomera, Canary Islands.

CHROMOSOME NUMBER: $2n=18$ (ROUX & BOULOS).

6. *Taeckholmia regis-jubae* (PITARD) BOULOS comb. nov.

Sonchus regis-jubae PITARD, in PITARD & PROUST, Iles Canar. Fl. Archipel 262, 1908.

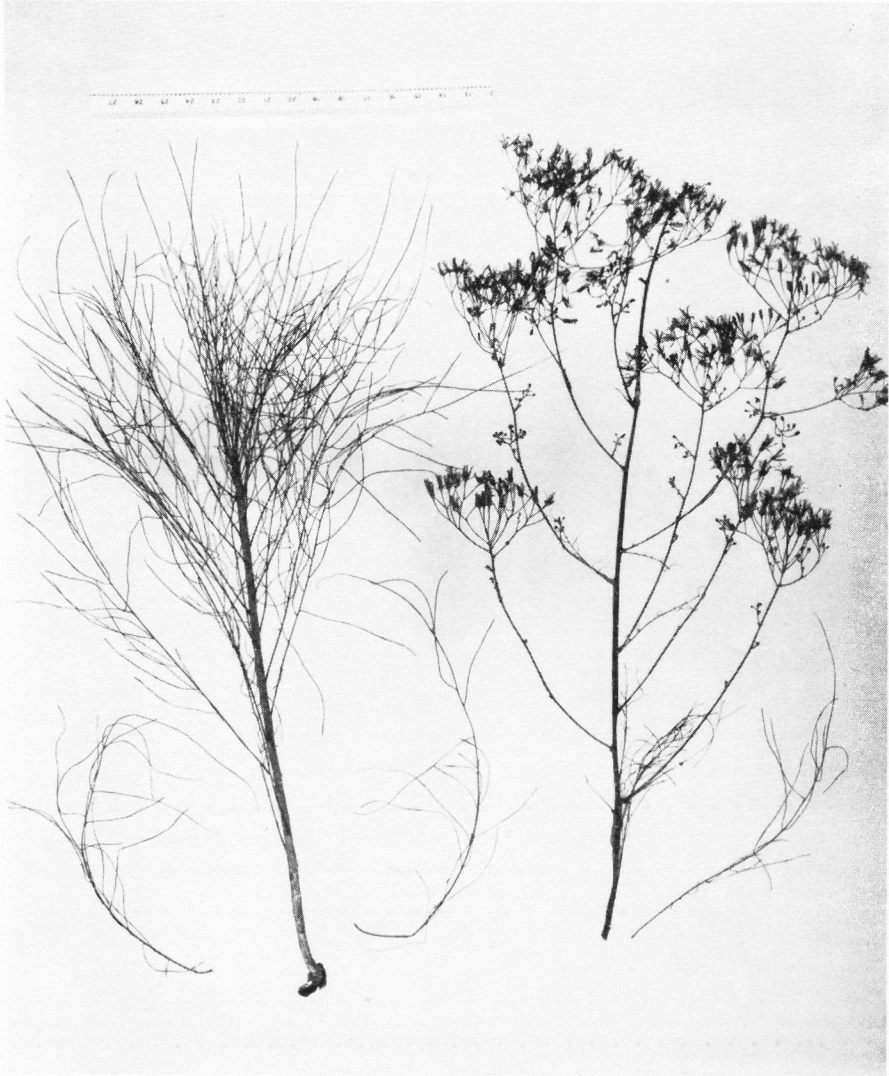


Fig. 4. *Taeckholmia microcarpa* BOULOS. — Güimar, Tenerife, Canary Islands, 8.6. 1961, leg. L. BOULOS (Typus, CAI!).

LECTOTYPE: PITARD, Canaries, Gomera: Roque de Valle Hormoso, 600 m (P!).

DISTRIBUTION: Gomera and La Palma, Canary Islands.

The plant was known only from the collection of the type. The writer collected it from the above locality in Gomera as well as from Las Nives, La Palma, Canary Islands.

7. **Taeckholmia arborea** (DC.) BOULOS comb. nov.

Sonchus arboreus DC. Prodr. 7: 189, 1838.

Prenanthes arborea BROUSSONET, Elench. plant. horti bot. Monsp. 47, 1805 (nom. nud.).

LECTOTYPE: *Prenanthes arborea* BROUSS., Tenerife, 1801 (G—DC!).

DISTRIBUTION: Tenerife, Canary Islands.

RELATIONSHIPS BETWEEN TAECKHOLMIA AND ALLIED GENERA

The following diagram may report on the supposed evolutionary relationships between *Launaea*, *Sonchus* (with its three subgenera: *Origosonchus* Boulos, *Dendrosonchus* Webb ex Sch. Bip. and *Sonchus*) and the segregated genera *Embergeria*, *Babcockia* and *Taeckholmia*.

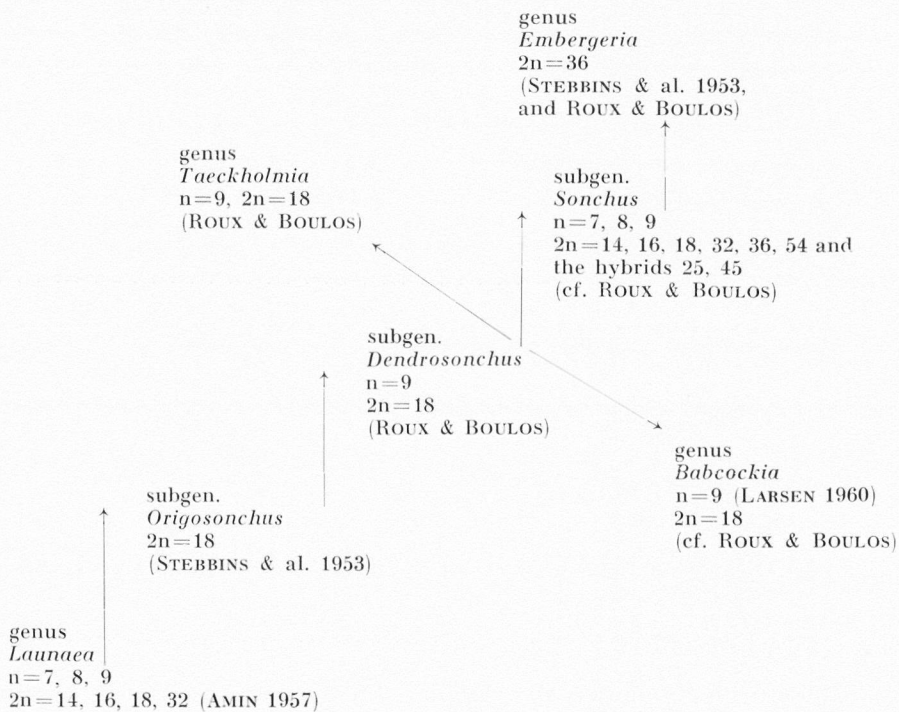




Fig. 5. *Taeckholmia heterophylla* BOULOS. — Agulo, Gomera, Canary Islands, 23.7.1962, leg. L. BOULOS (Typus, CAI!).

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