

Three New Species from the Nearer East

BY

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(with text figure)

Stachys megalodonta Hausskn. et Bornm. ex P. H. Davis, sp. nov. (Subsect. *Fragiles* Boiss. emend Rech. fil.).

Affinis *S. Benthamianae* Boiss. et *S. viscosae* Montbr. et Auch. ex Benth; a priore calyce majore papillis glandulosis et pilis longis eglandulosis munito, dentibus tubum aequantibus vel paulo eo longioribus flexuoso-patentibus differt; ab altera verticillastris superioribus inter se congestis, calyce plerumque majore, dentibus longioribus flexuoso-patentibus haud spinulo terminatis recedit.

Caules ascendenti-erecti, simplices vel superne ramosi, subflexuosi, quadrangulares, 20-35 cm. alti, medio 1.0-1.25 mm. lati, papillis glandulosis et pilis longis eglandulosis retrorsis hirsuti. Folia ovata, acuta, basi cordata vel in typo profunde cordata ad sinum inflexo-auriculata, breviter petiolata, mediana 2-5 cm. longa, 1.0-3.2 cm. lata, simpliciter vel irregulariter biserrato-crenata pilis longis eglandulosis et papillis glandulosis appresse hirsuta. Folia floralia caulinis minora, inferiora calycibus longiora, superiora diminuta ovato-lanceolata acuta vel acuminata subintegra calyces $\pm$ aequantia. Verticillastra 2-7-nata, superiora in spicam breviter ovato-oblongam, 2-4.5 cm. longam, 2.5 cm. latam, inter se condensata, inferiora 1-3 saepe distantia. Bractae setaceae ciliatae, ad 2 mm. longae, vel in exemplis ex ditione Mosul lectis lineari-setaceae 5-10 mm. longae. Flores brevissime pedicellati. Calyx statu florifero 9-12 mm. longus, fructu 11-14 mm. longus, papillis glandulosis plerumque numerosis et praesertim ad nervaturam et marginem dentum pilis paucis longis eglandulosis patentibus munitis, ad medium vel fere ultra in dentes lanceolato-subulatos ciliatos flexuosos subaequales acutos in fructu praesertim patentes fissus, tubo anguste infundibulare indistincte nervoso. Corolla 12-14 mm. longa, flava, fauce rubro-notata; tubus ad faciem anteriorem subsaccatus, intus piloso-annulatus; labium superius late ellipticum obtusissimum, 4-5 mm. longum, extus pubescens; labium inferius 5.5-7.0 mm. longum, trilobatum, lobo mediano subreniforme retuso sinuato lobis lateralibus brevioribus circ. 2 mm. latis apice truncatulis multo longiore. Stamina 2.5-3.0 vel 4-4.5 mm. longa. Nuculae late oblongo-ovatae, 2 mm. longae, 1.5 mm. latae, subtriquetae, apice obtusissimae, basi truncatae, fuscae.—Floret Mai.—Jun.

IRAQ (Kurdistan). Prov. Erbil: in montis Kuh Sefin reg. infer. supra pagum Schaklava [Shaklaw], 30 May. 1893 (*Bornmüller* 1692—type in Herb. Kew); ibid. (*Bornmüller* 1674— β . *remota* Bornm. in sched.); ibid., 1100 m., on limestone rocks, common, corolla yellow with crimson markings in throat, 9 May 1947 (*J. B. Gillett* 8079); ibid., ravine on limestone mountain, corolla cream, 19 June 1947 (*A. Rawi* 9082); Salahaddin forestry enclosure on Pirmum Dagh, 900 m., limestone mountain copiced with *Quercus Aegilops Brantii* forest, south aspect, occasional, fl. sulphur yellow with crimson markings in throat, 31 May 1948 (*J. B. Gillett* 11277).

Prov. Mosul: Kaira near Shar, corolla yellow with crimson markings, 10 May 1947 (*A. Rawi* 8602).

In the indumentum of its calyx the new species resembles *S. viscosa* Montbr. et Auch. ex Benth., from which it differs by having the upper whorls condensed into a short spike, and by the longer, flexuous-patent, calycine teeth that are not tipped by a small spine. The inflorescence of *S. megalodonta* Hausskn. et Bornm. ex Davis is like that of *S. Benthamiana* Boiss.; but the former differs from *S. Benthamiana* in having a larger calyx that has glandular papillae (instead of short glandular hairs) mixed with the long eglandular hairs, and somewhat longer, flexuous-spreading, calycine teeth. A specimen of *S. Benthamiana*, collected by Field and Lazar (No. 883) on Jebel Baradost near Diana Rowanduz (Prov. Erbil) has larger calyces with longer teeth than is usual in that species, thereby approaching *S. megalodonta*.

The gatherings of the new *Stachys* show considerable variation in leaf-shape, those from the type-locality (Sefin Dagħ, between Erbil and Rowanduz) having more deeply cordate laminae (actually inflexed at the sinus) than those from Pirmum Dagħ and Kaira; specimens from the latter locality have much longer bracts than in the other gatherings, and a more sparsely papillose calyx.

Mr. J. B. Gillett tells me that in Iraq the species in this group of *Stachys* are very variable, even in single localities. The material in the Kew Herbarium certainly bears out his observation, and the difficulty of finding constantly correlated characters suggests that hybridisation may have obscured the species-patterns. More material, supplemented by field studies, is required before several of the species can be satisfactorily circumscribed.

This critical group has been partially revised by Dr. K. H. Rechinger (Bot. Jahr. 71 (4) 526: 1941) who has provided a key to most of the species in his emended Subsect. *Fragiles* Boiss. The species fall naturally into two series:

(1) With terete or subquadrangular stems, usually pendulous, and bearing rounded obtuse leaves. (This includes the two species on which Boissier originally based the subsection—*S. Pinardi* Boiss. et Bal. and *S. longiflora* Boiss. et Bal.)

(2) With manifestly quadrangular, ascending stems bearing ovate or lanceolate, usually acute, leaves. (Originally part of Subsect. *Rectae* Boiss., this includes *S. megalodonta*.)

Linking these two series, though referable to the last, are *S. ballotiformis* Vatke (excluding *S. plebeia* Vatke which may prove specifically distinct) and *S. Brantii* Benth. The latter was transferred by Boissier to the genus *Betonica* L., included in *Stachys* L. by many authors. I have seen, though not dissected, the holotype of *S. Brantii* in the Kew Herbarium, and consider that this rare Kurdish species should certainly be placed in *Stachys* Subsect. *Fragiles* Boiss. as circumscribed by Rechinger (*l. c. supra*). It is, indeed, most closely related to *S. megalodonta*, from which it differs by its somewhat thicker stem, denser silky indumentum of long eglandular and short glandular hairs, usually longer bracts, and shorter (though flexuous) calyx-teeth that are without glandular papillae. In habit the two plants are similar, and I feel sure that if more of these rare saxatile species of *Stachys* had been discovered in Boissier's time, he would have related *S. Brantii* to them.

Teucrium stachyophyllum P. H. Davis, sp. nov. (Sect. *Stachyobotrys* Benth.).

Valde affinis *T. lamiifolio* Urv. sed indumento densiore canescente, lamina foliorum ovato-oblonga (haud late triangulari-ovata) quam latitudine 2-2½-plo longiore, apice obtusissima, margine obtuse crenata, calyce in parte superiore longius hispido-villoso, dente mediano labii superioris quam latitudine plerumque paulo latiore obtusiore (sed subapiculato) recedit.—Planta in agris et locis saxosis (haud in sylvis) crescens.

Planta annua vel subperennis (1-2 (3) annos persistens), basi haud vel paulo indurata caules 1-5 emittens. Caulis erectus (20) 30-40 cm. altus, internodiis superioribus 5-7 (10) cm. longis, spica unica terminatus vel superne in ramulos breves unispiciferos divisus, pilis eglandulosis patentibus dense tomentosulo-hirsutus, prope basin turiones steriles parvos tomentosos emittens. Folia caulina 3-5-juga, 4.5-7 (10) cm. longa; lamina oblongo-ovata, latitudine 2-2½-plo longior, apice obtusissima, basi truncato-cordata, margine obtuse crenata, appresse hirsuto-tomentosula, canescens, petiolo plerumque 2½-3-plo longior. Spicae 1-7, valde farctae, 3-8 (11) cm. longae, canescentes. Bractae calyces aequantes vel etiam breviores, anguste lineares, acutissimae, ciliatae. Flores brevissime pedicellati, paulo nutantes. Calyx basi saccatus, 7 mm. longus (vel paulo brevior), pilis brevibus glandulosis et praesertim in parte superiore pilis longissimis eglandulosis patentibus hispido-villosus, prope ad medium bilabiatus; labium superius tridentatum dente mediano late orbiculare 2.5-3.0 mm. lato replicato obtusissimo brevissime subapiculato in fructu prominenter reticulato-nervoso, dentibus lateralibus mediano 2-2½-plo brevioribus ovatis obtusissimis; labium inferius superiore subduplo brevius, ad basin in dentes 1.75 mm. longos lanceolatos acutos fissum. Corolla 6-7 mm. longa calycem aequans, albida; tubus 1.25 mm. latus, prope basin subsaccatus; labium superius subretusum; labium inferius 5-lobatum, lobo mediano orbiculare sinuato-lobulato vix 2 mm. lato, lobis lateralibus anterioribus ovato-triangularibus ciliatis, posterioribus late triangularibus acuminatis ciliatis. Stamina 3 vel 4 mm. longa. Nuculae suborbiculares, 1 mm. longae, leviter reticulato-malleatae, glabrae, pallide fuscae.—Floret Mai—Jun.

SYRIA: Beled Schekif, entre Kefour et El Zahrani. pr. Damascus (Gaillardot 741); Bahamra, 15. km. E. of Ladikie, 300 m. (Haradjian 2684), near Qardabah, 300 m., hills, 31 May 1939 (Dinsmore 7305); 30 km. S. of Antioch, 800 m., 6 June 1938 (Dinsmore 20390)—this record is near the Turkish-Syrian frontier by Mount Cassius.

LEBANON: Au bord du ravin qui traverse les jardins et forme le lit du torrent appelé El Kamlé, près de Saïda, 8 June 1855 (Gaillardot 89—type in Herb. Kew); Beirut, 1871 (Post); in rup. inf. Brummana, 7 June 1897 (Bornmüller 1333); Bhamdoon [Hamdun], 2 June 1871 (Post); Ehden, June 1846 (Boissier); Baynu [E. of Tripoli], 700 m., rocky slopes, fl. white, 15 June 1943 (P. H. Davis 6353); Nahr el Kelb, shady places at foot of rocks among brambles, scarce, fl. dirty white, 15 May 1943 (P. H. Davis 6076).

PALESTINE: Beit Mahsir, 18 May 1912 (Meyers); Mezra [near Acre] 50 m., fields (Dinsmore 5305); Jerusalem, rocks (Dinsmore 3305).

T. stachyophyllum has previously been included in the more western *T. lamiifolium* Urv. (*T. cordifolium* Cel.) to which it is certainly very closely related. Nevertheless, fairly abundant material shows that the two can always be separated by their leaf shape, and by the indumentum of their leaves and calyces; in addition, they can usually be distinguished by the length of their bracts and by the shape of the median tooth of the upper calyx-lip (fig. 1). Their areas do not overlap: *T. lamiifolium* is a woodland plant occurring locally from Bulgaria (*locus classicus*) to the Isaurian (and probably Cilician) Taurus; *T. stachyophyllum* extends from N. W. Syria (and on Mount Cassius may occur in Turkey) to Central Palestine, being a denizen of fallow fields and rocky places within the Mediterranean phytogeographical region in the narrow sense. Neither plant has been found in the Amanus Mountains which connect these two areas. It therefore seems justifiable, on taxonomic, geographical and ecological grounds, to give *S. stachyophyllum* a biverbal name; however, if intermediate populations should be found, it might be necessary to treat it as a subspecies of *S. lamiifolium*.

In early days *T. lamiifolium* was confused with *T. Arduini* L., a plant of the Eastern Balkans (Dalmatia, Montenegro, Herzegovina and Albania) which apparently grows on rocky slopes and in rock-crevices. A table (p. 52) is given to show the main morphological differences between these three, closely related species. It can be seen from it that *T. Arduini* is better distinguished from *T. lamiifolium* than the latter is from *T. stachyophyllum*. In addition to the differences in the calyx-shape and bract-length (the latter rather variable) noted by Boissier (Fl. Or. 4, 811: 1871) to distinguish *T. Arduini* from *T. lamiifolium*, important differences are found in the average number of leaves (and correlated length of the internodes), leaf-size, the length of the petiole relative to the lamina, and the habit of the two plants: *T. Arduini* is a long-lived perennial, and does not produce the sterile shoots we find in *T. lamiifolium* and *T. stachyophyllum*.

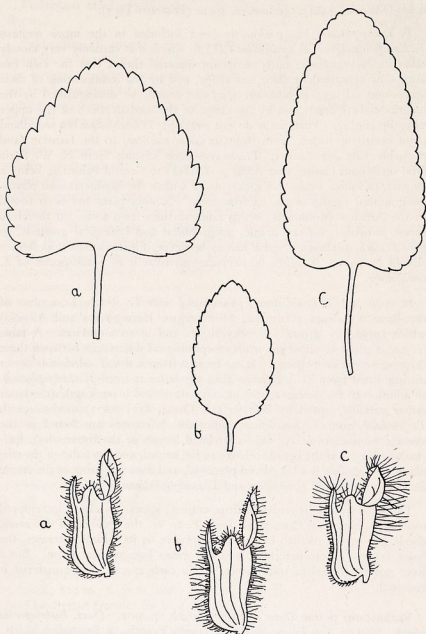
The three species (regarded as three entities) appear to show interrupted topoclines in several characters: from E. to W. the leaf-length decreases, the length of the median calyx-tooth (relative to its width) increases, the habit becomes more perennial, and the spikes become less dense. But I have not attempted to trace clines within each species; more material is required.

Verbascum petrae Davis et Huber-Morath, sp. nov. (Sect. *Botrosperma* Murb., Subsect. *Fasciculata* Murb., *B. Isandra* Franch., *a. Bracteolata* Murb., *α Umbellulifera* Murb., *1. Adenantha* Murb.).

Affinis *V. galilaeo* Boiss. sed foliis caulinis decurrentibus, fasciculis remotis, floribus parvis, bracteis et bracteolis angustis inter alia differt.

Planta biennis, pluricaulis, 40–60 cm. alta., virescens, tota tomento brevi, aut denso cinereo vel lutescente aut parciore griseo vestita, eglandulosa. Caules virgati, erecti vel secundarii adscendenti-erecti, teretes, foliosi, in inflorescentiam spiciformem interruptam simplicem vel basi parce ramosam abeuntes. Folia basalia longe petiolata, crassiuscula; lamina 10–20 cm.

FIG. I



- a. *T. lamiifolium* Urv. Leaf ($\times 1$), Bithynian Olympus (*Aucher-Eloy*); calyx ($\times 4$) Trojan Ida (*Sintenis* 580).
- b. *T. arduini* L. Leaf ($\times 1$), Dalmatia (*Petter* 372); calyx ($\times 4$), Dalmatia.
- c. *T. stachyophyllum* Davis. Leaf ($\times 1$) and calyx ($\times 4$), Sidon, *Gaillardot* 89 (*Type*).

longa, 4-6 cm. lata, oblongo-lanceolata vel lanceolata, obtusiuscula, integra, plana vel undulato-plicata vel repando-lobata, basi breviter cuneata vel sensim attenuata. Folia caulina inferiora basalibus conformia vel minora, brevius petiolata; media lanceolata integerrima acutiuscula sessilia, basi in alas angustas irregulariter decurrentia; superiora e basi lanceolata vel cordata, acuta vel acuminata vel breviter cuspidata. Fasciculi (1-) 2-4 (-5)-flori, distincti, remoti, bractea lanceolata acuta vel cordata acuminata glomerulum aequante vel superante fulcrati. Pedicellus floris primarii fasciculorum 2-4 mm. longus, ima basi bracteolis binis majusculis linearibus vel anguste lanceolatis, 10-13 mm. longis, 1-2.5 mm. latis, superne tantum denudatis praeditus; flores ceteri sessiles. Calyx sub anthesi 8-10 mm. postea usque ad 15 mm. longus, ad $\frac{3}{4}$ in lacinias lineari-lanceolatas acutas vel acuminatas divisus. Corolla lutea, parva (ad 2 cm. diam.?) non pelucido-punctata, extus stellato-tomentosa, intus glabra; tubus indistinctus. Filamenta inter se libera, antica sicut postica per totam longitudinem papillis longis purpureo-violaceis non clavatis dense lanata. Antherae omnes reniformes, mediofixae; connectivum etiam anticarum papillis longis non clavatis obsitum. Stylus 10 mm. longus basi laxe tomentosus, superne incrassatus, stigmate obovato-spathulato terminatus. Ovarium ovatum dense tomentosum. Capsula ovoidea, glabrescens, 4-5 mm. longa.—Floret Apr.—Grana pollinis omnia fertilia!

TRANSJORDAN. Edom: Petra, with *Retama* in the ruined town, 16 April 1945 (P. H. Davis 8754—*type* in Herb. Kew).

I am indebted to Dr. A. Huber-Morath for giving me co-authorship in this species. The name has already been published (*sine descr.*) in *Candollea*, 12, 187 (1949).

TEUCRIUM STACHYOPHYLLUM AND ITS ALLIES *

T. Arduini L.

Plant manifestly perennial, green or canescent, producing no sterile shoots; base woody.

Stems subsimple, median internodes 2-5 cm. long.

Leaves in 6-10 pairs, average length 3.6 cm.; lamina narrowly ovate, length 1.75-2.5 times width, 3.5-6 times petiole, apex acute, base broadly cuneate or truncate, margin shallowly crenate-serrate.

Indumentum of stem and leaves sparsely or densely velutinous.

Spike 4-13 (20) cm. long, dense.

Bracts usually equal to or shorter than calyx.

Calyx covered throughout with long, eglandular spreading hairs, longest on the tube. Upper lip with median tooth longer than broad, acuminate-spinulose, scarcely replicate; lateral teeth obtuse.

T. lamiifolium Urv.

Plant subperennial, green, producing sterile shoots; base indurated.

Stems often branched, median internodes 5-8 cm. long.

Leaves in 3-5 pairs, average length 5.3 cm.; lamina broadly triangular-ovate, length about 1.5 times width, usually 1.5-2.5 times petiole, apex subobtusate, base truncate-cordate, margin rather deeply crenate-serrate.

Indumentum of stem and leaves hirsute.

Spike 3-7 cm. long, very dense.

Bracts usually equal to or longer than calyx.

Calyx covered equally throughout with long, eglandular, rather spreading hairs. Upper lip with median tooth as broad as long, rather obtuse, apiculate, replicate; lateral teeth very obtuse.

T. stachyophyllum P. H. Davis

Plant annual or subperennial, canescent, producing no sterile shoots; base scarcely indurated.

Stems often shortly branched, median internodes 5-11 cm. long.

Leaves in 3-5 pairs, average length 6.2 cm.; lamina oblong-ovate, length 2-2.5 times width, 2.5-3.0 times petiole, apex very obtuse, base truncate-cordate, margin obtusely crenate.

Indumentum of stem and leaves copious, tomentose.

Spike 3-8 (11) cm. long, extremely dense.

Bracts shorter than (rarely equal to) calyx.

Calyx covered, except in the saccate portion, with very long, stiffly spreading, eglandular hairs, longest on teeth and dorsal nerve. Upper lip with median tooth a little broader than long, very obtuse, subapiculate, replicate; lateral teeth very obtuse.

* The calyces of the three species bear short glandular hairs as well as the long eglandular ones referred to in the table.