Notes RBG Edinb. 43(2): 255–265 (1986)

A REVIEW OF HYPERICUM SECT. HIRTELLA

N. K. B. ROBSON*

ABSTRACT. A synopsis of *Hypericum* sect. *Hirtella* is given. Two new subsections within sect. *Hirtella* are recognized: subsect. *Platyadenum* N. Robson and subsect. *Stenadenum* N. Robson, as are two new species and one new subspecies within the *H. elongatum* group: *H. davisii* N. Robson, *H. sorgerae* N. Robson and *H. elongatum* subsp. *apiculatum* N. Robson. Four previously described taxa are recognized as subspecies of *H. elongatum*: subsp. *racemosum* (Kuntze) N. Robson comb. et stat. nov., subsp. *microcalycinum* (Boiss. & Heldr.) N. Robson stat. nov., subsp. *tymphresteum* (Boiss. & Spruner) N. Robson stat. nov., and subsp. *callithyrsum* Cosson; and *H. apricum* Kar. & Kir. is reinstated as a distinct species.

During work on *Hypericum* for the Supplement Volume of *Flora of Turkey*, it became clear that the treatment of sect. *Hirtella* Stef. (sect. *Drosanthe* (Spach) Y. Kimura; *Fl. Turkey* 2:370–379, 1967) required modification in order to give a more accurate view of the evolutionary relationships of its component species. The revised treatment, which will appear in full as part of my monographic series of papers on *Hypericum*, concerns the *H. hyssopifolium* group and necessitates the description of three new taxa, the resurrection of an old one and changes of rank in four others.

Members of sect. *Hirtella* are all herbs with black glands present on the petals and usually elsewhere, the petals and stamens are persistent, and the stamen fascicles and styles are reduced to 3 in number (the fascicles by aggregation, i.e. 2+2+1, and the styles by true reduction (Robson, 1981)). The chromosome numbers recorded include not only 2n=24 and 20, which are apparently part of the general reduction series in *Hypericum*, but also 2n=28 (in 5 species belonging to both major divisions of the section). The origins of this number, which is clearly a derived one, remain to be explained; but it may have to do with the reproductive irregularities that have been discovered in some species (Clarke in Robson, 1981; Reynaud 1980, 1981).

The nearest relative of sect. *Hirtella* within sect. *Ascyreia* appears to be the western Himalayan *H. oblongifolium* Choisy (*H. cernuum* Roxb.), which is a shrub without black glands, with deciduous petals and stamens, stamen fascicles and styles both 5 in number, and a variable chromosome number (2n=24, 22, 48, 46, 44). The sepal margins of *H. oblongifolium* are entire, whereas those of sect. *Hirtella* are black-gland-fringed, with the exception on the one hand of *H. elongatum* (in which some or all the sepals are often entire) and on the other of *H. scabrum* and *H. vermiculare* (in which they can be secondarily eglandular but denticulate); and two groups of species within the section appear to have acquired these marginal black glands independently, thus providing a basis for the primary subdivision of the section.

In the first group (subsect. *Platyadenum*) the sepal marginal glands are obconic and often flat-topped or at least broader than long, and the sepal

*Dept. of Botany, British Museum (Natural History), Cromwell Road, London SW7 5BD.

apex may remain eglandular (*H. lysimachioides*, *H. olivieri*). In the second group (subsect. *Stenadenum*) the sepal marginal glands (when present) are ellipsoid to globose and always round-topped, and the sepal apex is never primitively eglandular, i.e. remaining without fringing glands when the rest of the margin bears them. Indeed, the reverse state (glandular apex but not sides) occurs in, for example, *H. davisii*. A synopsis of the species is provided below.

When the implications of this major grouping are considered, it is clear that some characters previously regarded as indicating a close relationship are in fact polyphyletically derived.

Thus the corymbiform inflorescence of *H. scabroides* is derived from the broadly pyramidal one of *H. lysimachioides* var. *spathulatum*, whereas *H. scabrum* is related to (? derived from) the typical form of *H. amblysepalum*. In the other subsection, *H. capitatum* shows the same tendency towards vertical condensation of the inflorescence, but its other characters indicate a relationship with *H. lydium*. To take another example, *H. scabrum* and *H. thymopsis* both have glandular-scabrid stems (the glandular emergences being branched in the latter but not in the former); but their other characters indicate that *H. scabrum* is nearest *H. amblysepalum* (as already mentioned) whereas *H. thymopsis* is clearly a derivative of *H. lydium*. Likewise, pubescent stems occur in both sect. *Platyadenum* (*H. scabroides*, *H. hirtellum* subsp. *hirtellum*), and sect. *Stenadenum* (*H. salsolifolium*, *H. uniglandulosum* p.p.).

The general picture that has emerged is of two variable species in each subsection (respectively *H. lysimachioides*/*H. amblysepalum* and *H. elongatum*/*H. lydium*) from which nearly all the rest of the species are individually derived. The exceptions are *H. helianthemoides* and *H. vermiculare*, which form a derivative complex with *H. pseudolaeve*, which in its turn is related to *H. elongatum* subsp. *microcalycinum*.

Synopsis of Species

Subsect. **Platyadenum** N. Robson, **subsect. nov.**

Sepala margine praeter interdum apicem acutum glandulis nigris obconicis vel lateraliter elongatis saepe apice applanatis obsita vel raro eglandularia subintegra.

Type species: *H. hirtellum* (Spach) Boiss.

1. **H. lysimachioides** Boiss. & Noé in Boiss., Diagn., ser. 2(1):106 (1853).

1a. var. **spathulatum** N. Robson in Notes RBG Edinb. 27:188 (1967).
SE Turkey, N Iraq, NW Iran.

1b. var. **lysimachioides**
E & SE Turkey, N Iraq, W Iran.

2. **H. scabroides** Robson & Poulter in Notes RBG Edinb. 27: 192 (1967).
E Turkey (Erzincan, Tunceli, Elazig).
Related to *H. lysimachioides* var. *spathulatum*.

3. **H. olivieri** (Spach) Boiss., Fl. Or. 1:803 (1867).
S Turkey (Malatya, Maraş, Urfa, Gaziantep, Hatay), NW Iraq, Syria, Jordan.
Related to *H. lysimachioides* var. *lysimachioides*.

4. **H. amblysepalum** Hochst. in Lorent, Wanderungen, 341 (1845).
S & SE Turkey, N Iraq, Syria, Lebanon, Israel.
5. **H. spectabile** Jaub. & Spach, Ill. Or. 1:57, t. 29 (1842).
SE Turkey.
Related to *H. amblysepalum*.
6. **H. asperulum** Jaub. & Spach, Ill. Or. 1:60 (1842).
N Iraq, NW Iran.
Related to *H. amblysepalum*.
7. **H. scabrum** L., Cent. Pl. 1:25 (1755).
Lebanon, Syria, Turkey (except NW), USSR (Caucasia), N Iraq, N & W Iran, Afghanistan, Pakistan, USSR (Turkmenistan, Tajikistan, Uzbekistan, Kirghizia, Kazakhstan), China (Sinjiang).
2n = 24, 28.
Related to *H. amblysepalum*.
8. **H. retusum** Aucher in Jaub. & Spach. Ill. Or. 1:53, t. 27 (1842).
SE Turkey, N Iraq, Syria.
Related to *H. amblysepalum*.
9. **H. hirtellum** (Spach) Boiss., Fl. Or. 1:798 (1867).
E Iraq, NW & Central Iran.
2n = 28.
Related to *H. amblysepalum*.

9a. var. **assyriacum** (Boiss.) N. Robson in Anzeig. Österr. Akad. Wiss., Math.-Nat. Kl., 104:144 (1967).
E Iraq, NW Iran.

9b. var. **hirtellum**
W & Central Iran

Subsect. **Stenadenum** N. Robson, **subsect. nov.**

Sepala margine integra vel glandulis nigris ellipsoideis vel globosis regulariter vel irregulariter obsita vel raro eglandularia subintegra.
Type species: *H. hyssopifolium* Vill.

10. **H. elongatum** Ledeb., Fl. Altaica 3:367 (1831).

10a. subsp. **elongatum**.
Turkey, Caucasia, Crimea, N Iran, USSR (Turkmenistan, Uzbekistan, Kirghizia, Kazakhstan).

10b. subsp. **apiculatum** N. Robson, **subsp. nov.** (see p.261).
E Turkey, USSR (W Caucasia), NW Iran, USSR (Turkmenistan—Kopet Dagh, Tajikistan, Kirghizia, Kazakhstan).

10c. subsp. **racemosum** (Kuntze) N. Robson, **stat. nov.** (see p.261).
N Iran, USSR (Turkmenistan—Kopet Dagh).

10d. subsp. **microcalycinum** (Boiss. & Heldr.) N. Robson, **stat. nov.** (see p.261).
Central and SW Turkey, Lebanon.

10e. subsp. **tymphresteum** (Boiss. & Spruner) N. Robson, **stat. nov.** (see p.262).
Greece (Peloponnisos, Sterea Ellas).

10f. subsp. **callithyrsum** (Cosson) N. Robson, **stat. nov.** (see p.262).
Morocco, S Spain.

11. **H. davisii** N. Robson, **sp. nov.** (see p.263).
E Turkey, S Caucasia (Armenia), NW Iran.
Related to *H. elongatum* subsp. *elongatum*.

12. **H. apricum** Kar. & Kir. in Bull. Soc. Nat. Mosc. 15:176 (1842).
Extreme W & Central to E Turkey, USSR (Caucasia), NW Iran, USSR (Turkmenistan, Tajikistan, Kirghizia, Kazakhstan).
Related to *H. elongatum* subsp. *racemosum*.

13. **H. sorgerae** N. Robson, **sp. nov.** (see p.264).
Central Turkey (Sivaş).
Related to *H. elongatum* subsp. *elongatum*.

14. **H. uniglandulosum** Hausskn. ex Bornm. in Bull. Herb. Boiss., sér. 2, 5:130 (1905).
Central Turkey.
Related to *H. elongatum* subsp. *elongatum* and *H. salsolifolium*.

15. **H. salsolifolium** Hand.-Mazz. in Ann. Nat. Hofm. Wien 27:59 (1913).
South Turkey.
Related to *H. elongatum* subsp. *elongatum* and *H. uniglandulosum*.

16. **H. hyssopifolium** Vill., Hist. Pl. Dauph. 1:329, t. 44 (1786).
Bulgaria, SE Yugoslavia, SE France, NW Italy, SE Spain.
2n = 20.
Related to *H. elongatum* subsp. *tymphresteum*.

17. **H. lydium** Boiss., Diagn., ser. 1(1):57 (1843).
Turkey (except semi-desert SE), E Caucasia, Crimea, Lebanon, N Iraq.
2n = 24, 28.
Related to *H. elongatum* subsp. *elongatum*.

18. **H. thymbrifolium** Boiss. & Noé in Boiss., Diagn., ser. 2(1):107 (1853).
Central Turkey.
Related to *H. lydium*.

19. **H. thymopsis** Boiss., Diagn., ser. 2(1):109 (1853).
Central Turkey.
Related to *H. lydium*.

20. **H. capitatum** Choisy, Prodr. Monogr. Hypér.: 57, t. 9 (1821).
S Turkey, N Syria.
Related to *H. lydium*.

20a. var. **luteum** N. Robson in Notes RBG Edinb. 27:204 (1967).
S Turkey.

20b. var. **capitatum**.
S Turkey, N Syria.

21. **H. libanoticum** N. Robson in Mouterde, Nouvelle Fl. Liban Syrie 2:524, t. 226, f. 4 (1970).
Syria, Lebanon.
Related to *H. elongatum* subsp. *microcalycinum*.

22. **H. pseudolaeve** N. Robson in Notes RBG Edinb. 27:190 (1967).
Central & E Turkey.

23. **H. helianthemoides** (Spach) Boiss., Diagn., ser. 1(8):116 (1849).
SE Turkey, USSR (SW Caucasia), N Iraq, N & Central Iran, USSR (Turkmenistan).
2n = 28.
Related to *H. pseudolaeve* and *H. vermiculare*.

24. H. vermiculare Boiss. & Hausskn. in Fl. Or., Suppl.: 129 (1888).
N Iraq, N Iran.
2n = 28.
Related to *H. helianthemoides*.

THE HYPERICUM ELONGATUM GROUP

As will be clear from the relationships mentioned in the above synopsis, *Hypericum elongatum* sensu lato occupies a basic position in subsect. *Stenadenum*; but it is also the most closely related species group to *H. linarioides* Bosse, the basic species of sect. *Taeniocarpium*. Its characters, apart from the narrow leaves, are all primitive within sect. *Hirtella*; and one of them (broad bracts) can be used to distinguish it from four derivative species or species groups: *H. hyssopifolium*, *H. lydium*/*H. thymbrifolium*/*H.thymopsis*/*H. capitatum*, *H. libanoticum* and *H. pseudolaeve*/*H. helianthemoides*/*H. vermiculare*. It is more difficult, however, to classify the variation within the group, because of the absence of clear limits between some of the taxa. With this proviso, however, the following key should enable nearly all specimens to be allocated unambiguously to a taxon.

KEY TO THE H. ELONGATUM GROUP

1. Capsule ovoid-pyramidal to ovoid, sometimes rostrate; at least some sepals in each flower often with margin entire, eglandular . . 2
\+ Capsule subglobose to globose, not or scarcely rostrate; all sepals with margin at least partly glandular (except sometimes in **13**) . . 7

2. Inflorescence very narrowly cylindric to subspiciform, (7–)9–15 nodes long; sepals narrowly ovate to oblong, obtuse to rounded
10c. H. elongatum subsp. **racemosum**
\+ Inflorescence pyramidal to narrowly cylindric, 4–7(–9) nodes long; sepals variously shaped 3

3. Sepals entire (at least some in each flower), imbricate, unequal; leaves narrowly oblong to linear, acute to rounded, with glands equal, all pale . . . . . **10a. H. elongatum** subsp. **elongatum**
\+ Sepals (usually all) with irregularly or regularly glandular margin, not imbricate (except **10e** and **12**, in part), unequal to equal; leaves variously shaped, with glands equal or unequal, sometimes black. 4

4. Sepals broadly ovate to broadly oblong, c.$\frac{1}{2}$ united
10f. H. elongatum subsp. **callithyrsum**
\+ Sepals narrowly ovate or narrowly oblong to triangular-lanceolate, free or up to $\frac{1}{3}$ united 5

5. Leaves oblong-lanceolate to linear-lanceolate or linear (i.e. base usually relatively broad), apex apiculate to uncinate, glands ± impressed, unequal (the larger often black); capsule ± rostrate
10b. H. elongatum subsp. **apiculatum**
\+ Leaves oblong to linear (i.e. base parallel or narrowed), apex rounded, glands not impressed, equal, nearly always all pale; capsule rostrate or not 6

6. Sepals narrowly oblong to triangular-lanceolate; leaves on main stem 8–18mm long, apex obtuse to rounded **10d. H. elongatum** subsp. **microcalycinum**

\+ Sepals ovate to elliptic; leaves on main stem 14–22mm long, apex rounded to subtruncate . **10e. H. elongatum** subsp. **tymphresteum**

7. Leaf and sepal apex rounded; sepals becoming ribbed or not; plant glabrous 8

\+ Leaf apex acute to glandular-mucronate; sepals (5-nerved) becoming markedly ribbed, usually glandular-apiculate or -mucronate; plant sometimes ± puberulous 10

8. Sepals (at least outer) broadly oblong to obovate, (4–)5-nerved, becoming markedly ribbed, with margin irregularly glandular or eglandular . . . . . **13. H. sorgerae**

\+ Sepals narrowly oblong to subcircular, 3-nerved, not or scarcely ribbed, with margin wholly or partly (but regularly) glandular . 9

9. Flower buds ovoid-cylindric; sepals oblong to elliptic-oblong, with marginal glands towards apex only; inflorescence narrowly pyramidal to narrowly cylindric . . . . . **11. H. davisii**

\+ Flower buds globose; sepals oblong or ovate to subcircular, with marginal glands around upper half or more; inflorescence markedly elongate, very narrowly pyramidal to subspiciform . **12. H. apricum**

10. Leaves and usually sepals with glandular mucro; stem and leaves glabrous to puberulous . . . . . **14. H. uniglandulosum**

\+ Leaves and sometimes sepals with glandular apiculus or apical gland; stem and leaves puberulous . . . . . **15. H. salsolifolium**

Descriptions and Synonymy of New and Resurrected Taxa

10. Hypericum elongatum Ledeb., Fl. Altaica 3:367 (1831).

10a. subsp. **elongatum**.

Syn.: *H. hyssopifolium* var. *elongatum* Ledeb., Fl. Ross. 1:451 (1842).
H. hyssopifolium var. *latifolium* Boiss., Fl. Or. 1:799 (1867) pro parte quoad lectotypus (*Kotschy* 153).
H. hyssopifolium var. *lythrifolium* Boiss., Fl. Or. 1:800 (1867) pro parte quoad lectotypus (*Kotschy* 110c).
H. hyssopifolium var. *abbreviatum* sensu Krylov, Fl. Altaya 1:191 (1901), non Ledeb. (1842).
H. hyssopifolium subsp. *elongatum* (Ledeb.) Woronow in Fl. Cauc. Crit. 3(9):32 (1906).
H. elongatum var. *caespitosum* Krylov, Fl. Zap. Sibiri 8:1908 (1935).
H. antasiaticum Grossh. in Izv. Azerb. Fil. Akad. Nauk, no. 1:45 (1941) pro parte quoad lectotypus (*Khalikov* 14 vii 1939).
H. thethrobicum Kem.-Nath., Fl. Gruz. 6:233, t. 266 (1950) nom. inval.
H. lydium sensu Rzazade in Karjagin, Fl. Azerb. 6:252 (1955) et auct. pl., non Boiss. (1843).
H. hyssopifolium sensu Takhtajan, Fl. Armen. 5:16 (1966) et auct. mult., non Vill. (1786).

ROYAL BOTANIC GARDEN, EDINBURGH

NOTES FROM THE ROYAL BOTANIC GARDEN, EDINBURGH – VOLUME 43 No. 2

CORRECTION ON PAGE 262

Replace first line of entry **10f.** with:—

10f. subsp. **callithyrsum** (Cosson) N. Robson, **stat. nov.**

Syn.: *H. callithyrsum* Cosson, Notes Pl. Crit. 152(1852).

ISBN 0 11 492473 2

EDINBURGH: HER MAJESTY'S STATIONERY OFFICE
JANUARY 1986

Leaves 12–30mm long, narrowly oblong to linear, not broader towards base, apex obtuse to rounded or subapiculate; glands not impressed, equal, all pellucid. Inflorescence sometimes elongate (8–20cm long), ± narrowly cylindric. Sepals ovate to elliptic or oblong, unequal, free or almost so, imbricate, rounded to obtuse or rarely acute, all with margin entire or some (rarely all) with margin irregularly glandular. Petals not black-dotted. Capsule not or scarcely rostrate.
Type: USSR, Kazakhstan, ad fl. Irtysh inter fortalitia Buchtarminsk et Semipalatinsk, 1826, *C. A. Meyer* s.n. (LE).

H. antasiaticum, from Nakhichevan, of which I have seen only an 'autotypus' (*Grossheim, Ilyinskaya & Kirpichnikov* 9 vi 1947), is intermediate between subsp. *elongatum* and subsp. *apiculatum,* having sepals broad and imbricate but c. ⅓ united and all gland-fringed. Most such intermediate specimens (some with black glands on some leaves) have been collected in Turkey (Kars) or USSR (Armedia, Nakhichevan).

10b. subsp. **apiculatum** N. Robson, **subsp. nov.**
Syn.: *H. sparsipunctatum* N. Robson in sched.
H. elongatum, *H. hyssopifolium*, *H. lydium* sensu omnes auct. pro min. parte.

Folia 12–20mm longa, oblongo-lanceolata vel lineari-lanceolata vel linearia, basin versus latiora, apice apiculata vel mucronata vel uncinata, glandulis plus minusve impressis inaequalibus eis maioribus saepe nigris. Inflorescentia plus minusve elongata, (12–)15–28cm longa, anguste cylindrica vel angustissime pyramidalis. Sepala lanceolata vel anguste elliptica vel anguste oblonga, inaequalia vel subaequalia, libera vel ad ⅓ coalita, raro vix imbricata, apice rotundata vel obtusa vel subacuta, plerumque omnia margine irregulariter vel regulariter glandularia. Petala plerumque nigro-punctata. Capsula plus minusve rostrata.
Type: Turkey [C10], Hakkari, Nehil Çaya, 62km from Hakkari to Yüksekova, 1750m, 14 vi 1966, *Davis* 44921 *& Polunin* (holo. K, iso. E).

10c. subsp. **racemosum** (Kuntze) N. Robson, **comb. et. stat. nov.**
Syn.: *H. hyssopifolium* var. *racemosum* Kuntze in Acta Hort. Petrop. 10:175 (1884).

Leaves c.20mm long, narrowly oblong to narrowly elliptic, not broader towards base, apex rounded, glands not impressed, equal, all pellucid. Inflorescence greatly elongate (15–30cm long), narrowly cylindric. Sepals narrowly ovate to oblong, unequal to subequal, up to ⅓ united, with margin regularly glandular. Petals not black-dotted. Capsule rostrate or not.
Type: USSR, Turkmenistan, bei Aschabad im Gebirge, *Komarov* (LE? n.v.).

Intermediates between subsp. *racemosum* and subsp. *elongatum* occasionally occur in northern Iran, and subsp. *racemosum* is itself intermediate between subsp. *elongatum* and *H. apricum.*

10d. subsp. **microcalycinum** (Boiss. & Heldr.) N. Robson, **stat. nov.**
Syn.: *H. microcalycinum* Boiss. & Heldr. in Boiss., Diagn. ser. 1(8):115 (1849).

H. hyssopifolium var. *microcalycinum* (Boiss. & Heldr.) Boiss., Fl. Or. 1:800 (1867).

Leaves 8–18mm long, oblong to linear, not broader towards the base, apex obtuse to rounded, glands not impressed, equal, all pellucid. Inflorescence not markedly elongate (10–20cm long), narrowly to broadly cylindric. Sepals triangular-lanceolate to narrowly oblong, obtuse to acute, unequal, c.$\frac{1}{3}$ united, not imbricate, all with margin regularly glandular. Petals not black dotted. Capsule not or scarcely rostrate.
Type: Turkey [C3], Konya, prope Kuralu non procul a lacu Beycheyr in Lycaonia, *Heldreich* 879(G).

Subsp. *microcalycinum* is intermediate between subsp. *elongatum* and *H. lydium* in most characters except the relatively short leaves.

10e. subsp. **tymphresteum** (Boiss. & Spruner) N. Robson, **comb. et stat. nov.**
Syn.: *H. tymphresteum* Boiss. & Spruner in Boiss., Diagn. ser. 1(1):57 (1843).
H. hyssopifolium var. *tymphresteum* (Boiss. & Spruner) Boiss., Fl. Or. 1:800 (1867).
H. hyssopifolium subsp. *tymphresteum* (Boiss. & Spruner) Hayek in Fedde, Prodr. Fl. Pen. Balc. 1:537 (1925).

Leaves 14–24mm long, oblong to linear-lanceolate, not or scarcely broader towards the base, apex rounded to subtruncate, glands not impressed, equal, all pellucid. Inflorescence not markedly elongate (8–18cm long), cylindric to cylindric-ellipsoid. Sepals ovate to elliptic, subacute to obtuse, unequal to equal, free, imbricate, all with margin almost eglandular to regular glandular. Petals not black-dotted. Capsule rostrate or not.
Type: Greece, Peloponnisos, Velugo [Mt Timfristos], *Spruner* (G-Boiss).

Plants from Mt Timfristos are more similar to subsp. *elongatum* than is the only other recorded collection, from Sterea Ellas, Mt Giona, 30 vi 1972, *Gustavsson* 1170 (LD), which is nearer *H. hyssopifolium* both in form and locality. The nearest populations of this species are in the Yugoslavia/Bulgaria border area.

10f. subsp. **callithyrsum** Cosson, Notes Pl. Crit., 152 (1852).
Syn.: *H. hyssopifolium* var. *candelabrum* Font Quer & Pau in Mem. R. Acad. Cienc. Artes Barcelona 22:341 (1931), nomen.
H. hyssopifolium var. *callithyrsum* (Cosson) Font Quer & Pau in Font Quer, Iter Maroccanum, 1930: Exsicc. no. 424 (1931?).

Leaves 15–20mm long, oblong to narrowly lanceolate, sometimes slightly broader towards the base, apex subacute to obtuse, glands not impressed, equal, all pellucid. Inflorescence not markedly elongate (c.17cm long), narrowly cylindric. Sepals broadly ovate to ovate-lanceolate or broadly oblong, obtuse to acute, subequal, c.$\frac{1}{2}$ united, not or scarcely imbricate, all with margin irregularly or regularly glandular. Petals not black-dotted. Capsule not rostrate.
Type: Spain, Granada, Sierra de Baza, *Bourgeau* pl. Esp. 1097a (P).

Subsp. *callithyrsum* is most similar to the form of subsp. *elongatum* named var. *latifolium*, from central Anatolia. Where its Spanish distributional area overlaps that of *H. hyssopifolium*, intermediate forms are said to occur.

11. Hypericum davisii N. Robson, **sp. nov.**

Syn.: *H. hyssopifolium* subsp. *elongatum* var. *microcalycinum* sensu Robson in Notes RBG Edinb. 27:190 (1967); in Davis, *Fl. Turkey* 2:372 (1967) pro parte, non *H. microcalycinum* Boiss. & Heldr.

Herba perennis, glabra, caulibus 15–65cm longis erectis fasciculatis, basin versus succineo- vel rubro-glanduloso-punctatis. Folia caulis principalis 8–28 × 1·5–6mm, anguste elliptica vel linearia, plana vel plus minusve revoluta, apice rotundata, nec glauca nec nigro-punctata; folia caulium axillarium minora angustiora. Inflorescentia anguste cylindrica vel anguste pyramidalis, 8–22cm longa, 13–∞-floris, ramulis lateralibus 1–3(–4)-floris; bracteae lanceolatae integrae, haud nigro-punctatae; alabastri ovoideo-cylindrici. Sepala (2–)2·5–3 × 0·6–1mm, subaequalia vel aequalia haud imbricata, $\frac{1}{3}$–$\frac{1}{2}$ coalita, oblonga vel elliptico-oblonga, 3-nervata nervis haud prominescentibus, omnia margine glandulis nigris sessilibus globosis apice versus tantum ornata. Petala 8–12 × 3·5–6mm, interdum rubro-venata, margine nigro-glandulosa sed lamina haud nigro-punctata. Capsula 4–7 × 4–6·5mm, subglobosa vel globosa, haud vel vix rostrata.

Type: Turkey [A9] Kars, Yağmurlu dağ between Sarikamiş and Karaurgan, 2200m, 7 vii 1957, *Davis & Hedge* D 30697 (holo. BM; iso. E, K).

TURKEY. A7 Gumuşane: In collibus prope Gumusch-Khané, 8 vii 1862, *Bourgeau* 64 (K p.p., LE p.p.)*. A8 Erzurum: Inter Erzurum et Ispir, prope Sotchernik, 1800m, vi 1853, *Huet du Pavillon* (BM, G, K, S, W); 26km from Tortum to Oltu, W side of pass, 2200m, 29 vii 1966, *Davis* 47582 (E, K); Erzurum to Oltu, 40km, 10 vi 1970, *Karamonoğlu et al.* 391 (BM); Aras River Gorge, 1700m, 20 vi 1967, *Tobey* 2103 (E). A9 Kars: Ardaganskiy okr., Okr. Ardagana [Ardahan], 27 vi 1910, *Miterov* s.n. (LE); Sarikamiş to Karakurt, 10km, 2050m, 15 vii 1966, *Davis* 46520 (E, K). B6 Sivaş: Sivaş, la route de l'aëroport de Sivaş, 18 vi 1978, *Çubukçu* s.n. (BM). B8 Erzurum: Erzurum to Pasinler, c.14km, 2000m, 29 vii 1966, *Davis* 47450 (E, K), 47470 (E, K); ad radices montium Tech-Dagh supra Erzeroum, 1800–2100m, vi 1853, *Huet du Pavillon* s.n. (BM, G, JE, K). B9 Ağri: SW Balik Golu, c.2700m, 5 viii 1983, *Sorger* 83-37-30 (Herb. Sorger). B9 Van: 2km E of Hoşap, 2100m, 9 vi 1966, *Davis* 44565 (E); Başkali to Hoşap, 36km, N side of Guzel Dere pass, 2750m, 3 vii 1966, *Davis* 45986 (K).

USSR–ARMENIA. Distr. Ararat, montes 'Gegamski khrebet', loco Arieni Dzor dicto, 1500–1900m, 11 vii 1975, *Vašák* s.n. (W); Sev.-vost. poberezhye oz. Sevan (Gokcha), Tak-Agach, Kuloflizhniy sklon., Nizhniy gast., 3 vii 1930, *Polianska* s.n. (LE).

IRAN. Azerbaijan: Azerbidjan, *Aucher* 4293 (BM, K); in valle fluvii

*Other specimens of *Bourgeau* 64 (K, LE, W) belong to *H. elongatum*.

Quotur W Khvoy versus fines Turcicas, 1800–2000m, fl. 10 vi 1971, *Rechinger* f. 41676 (W); in monte Ghogeh Dagh W Barhorgan ad confines Turciae, 2100–2250m, 1 viii 1971, *Rechinger* f. 44010 (W); Makou, Kuh-e-Ghodejeh, 2100–2250m, 10 viii 1971, *Termé* 34351E (BM); Khotour, 2000m, 10 vi 1971, *Iranshahr* 34327E (BM). Ghilan: Prope p. Diardshan, 21 vii 1902, *Alexeenko* 302 (LE).

H. davisii appears to have originated in Iran from a form of *H. elongatum* subsp. *elongatum* and migrated westward. The easternmost specimen (*Alexeenko* 302) is somewhat intermediate between these taxa.

12. Hypericum apricum Kar. & Kir. in Bull. Soc. Nat. Mosc. 15:176 (1842).

Syn.: *H. hyssopifolium* var. *latifolium* Boiss. Fl. Or. 1:799 (1867) pro parte quoad syn. *H. apricum* et specs. *Bourgeau* 65, *Huet du Pavillon* s.n.

H. karjaginii Rzazade in Dokl. A. N. Azerb. S.S.R. 10:882 (1954).

H. hyssopifolium subsp. *elongatum* var. *microcalycinum* sensu N. Robson in Notes RBG Edinb. 27:190 (1967) pro parte; in Davis, Fl. Turkey 2:372 (1967); in Anzeig. Österr. Akad. Wiss., Math.-Nat. Kl. 104:141 (1967) pro parte omnes non *H. microcalycinum* Boiss. & Heldr.

Perennial herb, glabrous; stems (15–)40–75cm long, erect, eglandular or with faint amber (or rarely black) glands towards the base. Leaves on main stem 10–30 × 1–6(–8)mm, linear (or more rarely narrowly elliptic) to narrowly lanceolate, plane or ± revolute, rounded or rarely bluntly apiculate, not glaucous, almost always without black glands; leaves on axillary shoots smaller and narrower. Inflorescence very narrowly pyramidal to very narrowly cylindric, 12–39cm long, ∞-flowered, with lateral branches 1–3(–5)-flowered; bracts ovate to triangular-lanceolate, entire, without black glands; flower buds globose. Sepals 1–2·5(–3) × 0·7–1mm, subequal to equal, imbricate or not, $\frac{1}{4}$–$\frac{1}{3}$ united, oblong to ovate or orbicular, 3-nerved, not ribbed, all with regular or irregular (absent from lower half or less), globose, sessile, black, marginal glands. Petals 6–9 × 4–6mm, not red-tinged or red-veined, not black-gland-dotted. Capsule 5–8 × 3·5–5mm subglobose to globose, not or scarcely rostrate.

Type: USSR (Kazakhstan), in montosis apricis Alatau ad fl. Baskan et Sarchan, *Karelin & Kirilov* 1826 (holo. LE; iso. BM, G, H, K).

13. Hypericum sorgerae N. Robson, **sp. nov.**

Herba perennis, glabra, caulibus (11–)17–22cm longis, erectis vel adscendentibus, basin versus glandulis pellucidis vel succineis interdum prominentiusculis instructis. Folia caulis principalis 5–11 × 1·3–2mm, anguste oblonga vel oblongo-lanceolata vel linearia, margine revoluta apice rotundata, leviter glauca, haud nigro-punctata; folia caulium axillarium minora angustiora. Inflorescentia anguste cylindrica, (3–)5–10cm longo, (8–)15–21-floris, ramulis lateralibus 1(–2)-floris; bracteae lanceolata integrae, haud nigro-punctata; alabastri subglobosi. Sepala 2·5–3 × 1–2·4mm, subaequalia vel aequalia haud imbricata, c.$\frac{1}{3}$ coalita, oblonga vel oblongo-lanceolata, (4–)5-nervata nervis prominescentibus, aliqua margine

integra vel omnia margine glandulis nigris sessilibus globosis vel cylindrico-ellipsoideis irregulariter ornata. Petala 9–12 × 4–6mm, nec rubro-venata nec nigro-punctata. Capsula 5–7 × 4–6, subglobosa vel globosa, haud vel vix rostrata.

Type: Turkey [B6], Sivaş, 18km S Zara, 1500m, 9 vii 1969, *Sorger* 69-37-26 (holo. BM, iso. Hb. Sorger).

TURKEY. B6 Sivaş: 28km NW Divriği, 1500m, 9 vii 1969, *Sorger* 69-42-83 (BM, Hb. Sorger); 5–8km S Zara, 1500m 8 vii 1969, *Sorger* 69-36-23 (BM, Hb. Sorger).

H. sorgerae is a neo-endemic dry steppe derivative of *H. elongatum* subsp. *elongatum*, differing from the latter in the shape of leaves and capsules as well as in the generally smaller size and the united, non-imbricate sepals.

REFERENCES

REYNAUD, C. (1980). Etude cytotaxinomique de quelques Hypericum d'Iran. *Biol.-Ecol. médit* (1981) 7:49–55.

—— (1981). Contribution a l'étude cytotaxinomique du genre Hypericum L. en Turquie. II. *Biol.-Ecol. médit.* 7:181–191.

ROBSON, N. K. B. (1977). Studies in the genus Hypericum L. (Guttiferae). 1. Infrageneric classification. *Bull. Br. Mus. Nat. Hist.* (*Bot.*) 5:291–355.

—— (1981). Studies in the genus Hypericum L. (Guttiferae). 2. Characters of the genus. *Bull. Br. Mus. Nat. Hist.* (*Bot.*) 8:55–226.