



## About this volume: the monograph of *Hypericum* by Norman Robson

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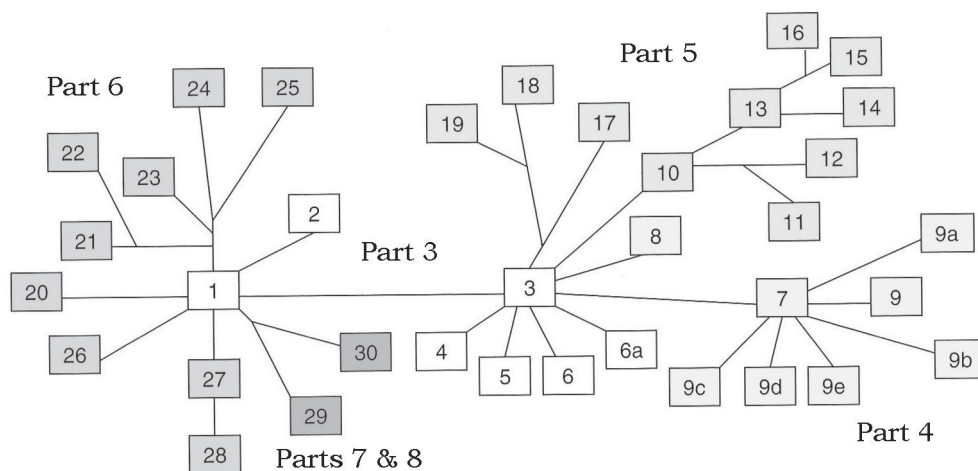
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With about 470 species *Hypericum* Linnaeus (1753) is one of the 100 large angiosperm genera that collectively comprise an estimated 22% of angiosperm diversity (Scotland, 2000). The size of such genera means that complete monographic treatments to account for species diversity are time-consuming, costly and labour-intensive. Consequently, the species-level taxonomy of most such groups is poorly known (Frodin 2004, Scotland & Sanderson 2004). This presents a substantial barrier both to the goal of completing the global inventory and to understanding the evolution of the diversity they contain.

*Hypericum* is now a notable exception to this problem as the paper published in this volume of *Phytotaxa* represents the final taxonomic part of a worldwide monograph of the genus produced by Dr Norman Robson from the Natural History Museum in London. During the last 50 years, Robson has published over 80 papers on *Hypericum*. The first part of the monograph was published in 1977 and the seven subsequent parts have been published as ten papers, the first having appeared in the *Bulletin of the British Museum (Natural History)*, *Botany*, a journal that was later renamed the *Bulletin of the Natural History Museum, Botany*, and later *Systematics and Biodiversity*. To remain in style with the previously published parts, the general style of *Phytotaxa* is somewhat diverted in the current volume.

Each part of the monograph dealt with one or more of the taxonomic sections that Robson (1977) established (Table 1) and for which evolutionary hypotheses were developed (Fig. 1). One further part of the monograph is envisaged, which will provide a summary, and deals with addenda and corrigenda of the former volumes.



**FIGURE 1.** Relationships of sections of *Hypericum* (modified from Robson, 2003). Parts 1 and 2 of the monograph deal with infrageneric classification and characters respectively. Parts 3–8 are taxonomic and the sections dealt with in each are indicated. Table 1 provides further details of each of the sections recognised.

**TABLE 1.** The sectional classification of *Hypericum* proposed by Robson (1977) with modifications by Robson (2001). Section numbers correspond with those in Figure 1.

Section number	Name	Distribution	Reference
1.	<i>Campyloporus</i>	Africa, Madagascar, SW Asia	Robson, 1985
2.	<i>Psorophytum</i>	Balearic Islands	Robson, 1985
3.	<i>Ascyreia</i>	S & E Asia, N. Turkey	Robson, 1985
4.	<i>Takasagoya</i>	Taiwan, Phillipines	Robson, 1985
5.	<i>Androsaemum</i>	Mediterranean, W. Europe, Atlantic Is.	Robson, 1985
6.	<i>Inodora</i>	NE Turkey, SW Georgia	Robson, 1985
6a	<i>Umbraculoides</i>	Mexico (Oaxaca)	Robson, 1985
7	<i>Roscyna</i>	NE Asia, E. North America	Robson, 2001
8	<i>Bupleuroides</i>	NE Turkey, SW Georgia	Robson, 2001
9	<i>Hypericum</i>	Northern temperate regions	Robson, 2002 (subsect 1, series 1); 2006 (subsect 1, series 2 & subsect 2)
9a	<i>Concinna</i>	N. California	Robson, 2001
9b	<i>Graveolentia</i>	North & Central America	Robson, 2006
9c	<i>Sampsonia</i>	S. Japan, Taiwan, C & S China, Vietnam, Myanmar, Assam	Robson, 2001
9d	<i>Elodeoidea</i>	E & S China, Vietnam, Myanmar to Kashmir	Robson, 2001
9e	<i>Monanthea</i>	SW China, Vietnam, Laos, Thailand, Myanmar to Pakistan, S. India, Sri Lanka	Robson, 2001
10	<i>Olympia</i>	S. Balkans, W. Turkey	This volume
11	<i>Campylopus</i>	NE Aegean	This volume
12	<i>Origanifolia</i>	Cyprus, Turkey, Georgia	This volume
13	<i>Drosocarpium</i>	Mediterranean, Balkans, SW Asia	This volume
14	<i>Oligostema</i>	Europe, NW Africa, Atlantic Is.	This volume
15	<i>Thasia</i>	NE Aegean	This volume
16	<i>Crossophyllum</i>	N & W Turkey, Caucasus	This volume
17	<i>Hirtella</i>	W. Mediterranean to Altai	This volume
18	<i>Taeniocarpium</i>	Europe to Altai and Iran	This volume
19	<i>Coridium</i>	W. Mediterranean to Caucasus	This volume
20	<i>Myriandra</i>	E North America, Caribbean, Bermuda	Robson, 1996
21	<i>Webbia</i>	Atlantic Is.	Robson, 1996
22	<i>Arthrophyllum</i>	S. Turkey, Levant	Robson, 1996
23	<i>Triadenioides</i>	Socotra, Levant, S. Turkey	Robson, 1996
24	<i>Heterophylla</i>	NW Turkey	Robson, 1996
25	<i>Adenotrias</i>	S. Morocco to Levant	Robson, 1996
26	<i>Humifusoideum</i>	New Guinea, SE Asian Is., trop and S. Africa, Madagascar	Robson, 1996
27	<i>Adenosepalum</i>	Atlantic Is., Africa, Mediterranean Europe	Robson, 1996
28	<i>Elodes</i>	W. Europe, Azores	Robson, 1996
29	<i>Brathys</i>	North & South America	Robson, 1987, 1990
30	<i>Trigynobrathys</i>	North & South America, Africa, E. Asia, Australasia	Robson, 1990



**FIGURE 2.** St John's wort, *Hypericum perforatum*, in Sønderborg, Denmark, photographed by M. Christenhusz, 2007.

Undoubtedly, the most well-known species of *Hypericum* is St John's wort (*H. perforatum* L., Fig. 2), an economically important medicinal crop plant with demonstrated antiviral, antidepressive and anticancer properties (Matzk *et al.* 2001). *Hypericum perforatum* is widespread and morphologically variable. Cytological data suggests that it is an allotetraploid (Robson 1958, Robson 1975) and Robson (2002) hypothesised that it is the result of an ancient hybridisation event between two diploid taxa (*H. maculatum* subsp. *immaculatum* and *H. attenuatum*). This is now being tested using molecular data.

*Hypericum perforatum* is a facultative apomict (Noack 1939, Matzk *et al.* 2001); one of a number of apomictic species in the genus (Matzk *et al.* 2003). They exhibit a range of asexual seed production mechanisms and are placed within different sections of the genus suggesting multiple independent origins of apomixis in the genus. It is therefore perhaps no surprise that the genus has now become a focus for research on the genetics of apomixis (Barcaccia *et al.* 2007).

As with many large, widely distributed angiosperm genera, *Hypericum* also poses many interesting biogeographic questions. Classical biogeographic patterns have been hypothesised—for example the Trans-African Rand flora pattern with a close relationship hypothesised between Canarian and Socotran taxa (Robson 1996). There are also remarkable radiations, for example in the Paramó of South America, a habitat only 3.5 million years old, there are approximately 80 endemic species, accounting for nearly 20% of the species diversity in the genus.

The completion of the taxonomic part of the *Hypericum* monograph provides not only a taxonomic baseline and valuable tool for the identification of taxa but also a rich resource for research into many other aspects of the biology and evolution of the genus.

An overview of the studies—in which this volume constitutes part 5—is given below.

1. Robson, N.K.B. (1977) Studies in the genus *Hypericum* L. (Guttiferae) 1. Infrageneric classification. *Bulletin of the British Museum (Natural History), Botany* 5: 293–355.
2. Robson, N.K.B. (1981) Studies in the genus *Hypericum* L. (Guttiferae). 2. Characters of the genus. *Bulletin of the British Museum (Natural History), Botany* 8: 55–226.

3. Robson, N.K.B. (1985) Studies in the genus *Hypericum* L. (Guttiferae). 3. Sections 1. *Campylosporus* to 6a. *Umbraculoides*. *Bulletin of the British Museum (Natural History), Botany* 12: 163–325.
- 4(1). Robson, N.K.B. (2001) Studies in the genus *Hypericum* L. (Guttiferae). 4(1). Sections 7. *Roscyna* to 9. *Hypericum sensu lato* (part 1). *Bulletin of the Natural History Museum, Botany* 31: 37–88.
- 4(2). Robson, N.K.B. (2002) Studies in the genus *Hypericum* L. (Guttiferae). 4(2). Section 9. *Hypericum sensu lato* (part 2): subsection 1. *Hypericum* series 1. *Hypericum*. *Bulletin of the Natural History Museum, Botany* 32: 61–123.
- 4(3). Robson, N.K.B. (2006) Studies in the genus *Hypericum* L. (Clusiaceae). 4(3). Section 9. *Hypericum sensu lato* (part 3): subsection 1. *Hypericum* series 2. *Senanensia*, subsection 2. *Erecta* and section 9b. *Graveolentia*. *Systematics and Biodiversity* 4: 19–98.
- 5(1). Robson, N.K.B. (2010) Studies in the genus *Hypericum* L. (Hypericaceae) 5(1). Sections 10. *Olympia* to 15/16. *Crossophyllum*. *Phytotaxa* 4: 5–126.
- 5(2). Robson, N.K.B. (2010) Studies in the genus *Hypericum* L. (Hypericaceae) 5(2). Sections 17. *Hirtella* to 19. *Coridium*. *Phytotaxa* 4: 127–258.
6. Robson, N.K.B. (1996) Studies in the genus *Hypericum* L. (Guttiferae) 6. Sections 20. *Myriandra* to 28. *Elodes*. *Bulletin of the Natural History Museum, Botany* 26: 75–217.
7. Robson, N.K.B. (1987) Studies in the genus *Hypericum* L. (Guttiferae) 7. Section 29. *Brathys* (part 1). *Bulletin of the Natural History Museum, Botany* 16: 1–106.
8. Robson, N.K.B. (1990) Studies in the genus *Hypericum* L. (Guttiferae) 8. Sections 29. *Brathys* (part 2) and 30. *Trigynobrathys*. *Bulletin of the British Museum (Natural History), Botany* 20: 1–151.
9. Robson N.K.B. (in preparation) Studies in the genus *Hypericum* L. (Hypericaceae) 9. Summary, Addenda and Corrigenda.

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