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Studies in the genus *Hypericum* L. (Hypericaceae) 9. Addenda, corrigenda, keys, lists and general discussion

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Abstract

Part 9 concludes this monographic series of papers on the genus *Hypericum*. The first chapter contains: (i) extended additions to, revisions of, and comments on the systematic parts (Parts 3–8), including a detailed revision of the larger part of Sect. 3. *Ascyreia* with a revised key; (ii) shorter additions and corrections to all parts; (iii) a detailed enumeration of the sections of the genus with their perceived interrelationships, and (iv) a revised key to these sections.

In the second chapter, some of the characters treated in Part 2 are reconsidered, but not chemotaxonomy, which is discussed in an appendix contributed by Sara Crockett. The relationships within and between sections of each of the three groups of the genus are then considered, followed by an interpretation of them in terms of distribution, leading to a description of the disjunctions in distribution thereby revealed. This is followed by a discussion.of the various means of dispersal that may have brought about these distribution patterns. In the final section on the evolution of the genus, *Santomasia* is re-incorporated in *Hypericum*, but *Lianthus* and *Triadenum* continue to be excluded. A consideration of the relationships of the Hypericaceae to the rest of the Clusioid clade leads to a description of the probable characters of the primitive *Hypericum*.

New taxa and names appearing in this Part are: Sect. 1a: *Hypericum* sect. *Santomasia*. Sect. 1: *H. smithii*. Sect. 3: *H. reptans* subsp. *ogisui*; *H. rotundifolium*; *H. oxyphyllum*; *H. calycinum* forma *luteum*; *H. fanjingense*; *H. hookerianum* 'Rodgersii'; *H. lagarocaule*. Sect. 5: *H.* × *inodorum* 'Limpsfield'. Sect. 14: *H.* × *caesariense*. Sect. 18: *H. linarioides* Bosse subsp. *alpestre*. Sect. 28: *Hypericum* sect. *Tripentas*. Sect. 29: *H. monroi*; *H. graciliforme*; *H. marahuacanum* subsp. *compactum*.

Key words: Chromosome numbers, distribution, evolution, Guttiferae, morphology, phytochemistry, taxonomy

Introduction

Origins of the monographic study

My interest in the genus *Hypericum* was stimulated by a final year project on the British species, which was proposed to me by Professor James Matthews (Aberdeen University) in March 1950. This interest led me to make a survey of the whole genus with special emphasis on the floral anatomy, in order to solve some problems relating to floral variation that were revealed by the survey. During subsequent floristic work at Kew and then the British Museum (Nat. Hist.), now The Natural History Museum, which involved other families such as Celastraceae, I continued my *Hypericum* studies by contributing accounts of the genus (or the family in different guises: Guttiferae, Clusiaceae, Hypericaceae) for Floras of various parts of the world. By the time that Roy Lancaster (then of Hillier's Nurseries, Winchester, England) encouraged me in about 1970 to start work on a *Hypericum* monograph, therefore, I had already been studying the genus for 20 years or so.

Methodology

When I started the monograph, *Hypericum* was thought to contain more than 300 species, and subsequent research has enlarged this figure to almost 500 (currently 488). In order to complete the task in a working lifetime, therefore, I decided to eschew detailed analytical or experimental techniques in favour of comparative morphology, distribution, chromosome details and other characters that could be obtained from the literature. The virtual absence of paleontological data has meant that the study has had to be based wholly on data from recent material. As I explained in Part 2: 65–73 (Robson 1981), it is fairly easy to discover morphological trends in *Hypericum*; but a single trend may not give any clear indication of direction. However, if two trends are correlated, their direction (plesiomorphic to apomorphic) becomes more certain; and where the trend is further correlated with distribution (as it nearly always is), the certainty is thereby increased. By means of such morpho-geographical trends, relationship diagrams of the genus and of each section thereof have been compiled, and each is usually the basis of the key to the group. Finally, although there has been no time to indulge in cladistics, I have adopted one concept from that discipline, that of the sister group. For each established taxon, I determined (from the internal trends) the sister taxon. By this procedure it is possible to assemble the various groups to form the relationship diagram, which is therefore an