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Principles of angiosperm taxonomy.

Author(s) : [DAVIS, P. H.](#) ; [HEYWOOD, V. H.](#)

Book : [Principles of angiosperm taxonomy.](#) 1963 pp.xx + 556 pp.

Abstract : Few prophets in the '30s would have foretold the renaissance of the contemporary cults of biosystematics and numerical taxonomy that are conspicuous facets of botany today. It is still possible, however, though it would be so much longer, to condense into one volume the principal aspects of current thought and practice in angiosperm taxonomy, and it is fortunate that the objective has been served so ably as with the present volume. The comprehensive coverage and the sustained high level of critical discussion are exceptional in any branch and should ensure the general use of this volume as a text book and reference for plant taxonomists generally.

There are fourteen chapters. The first is historical and deals with pre-Darwinian taxonomy. Of special value here is the discussion of the archetype concept, of some indignant repudiations, is still essential to all taxonomic thought. The connexion between Linnean classification and Aristotelian reasoning is somewhat superficial. The authors state that Aristotelian reasoning cannot mesh with evolutionary theory, yet their own deductive inferences involve no principle unknown to Aristotle.

The second chapter describes the impact of Darwin on taxonomy and assesses the significance of research into phylogeny. The authors are at pains to point out that phylogeny may be legitimately inferred below the generic level, practically all attempts to establish the phylogeny of the higher categories are merely speculative. So far, though, just criticisms are made in this connexion of the phylogenetic assumptions of Hutchinson's angiosperm classifications. Among the other topics covered in this chapter are character advancement, homology and analogy, and parallelism and convergence. Taxonomic ranks are introduced in chapter 3. Of special value here is the insistence that the range of variation and discontinuity should govern taxonomic delimitation rather than relation to a type. The treatment of the species, however, is hardly consistent. Simpson's view is reproduced that a species is "nonarbitrary as to both inclusion and exclusion", yet in the discussion on the species on pp. 89 *seq.*, the authors state that the species may be and perhaps always is arbitrary as to inclusion, otherwise there would be no difficulty in deciding between specific or sub-specific rank for any taxon. The chapter concludes with some frank confessions on dustbin taxa.

A general assessment of characters is presented in chapter 4. The view is asserted that all characters are relevant to taxonomy, and none, not even characters of habit, has any *a priori* preeminence. The treatment of characters by the methods of numerical taxonomy is also outlined.

The next three chapters give more detailed consideration to the characters that have been used so far in taxonomy, in particular, external morphology, anatomy, cytology and biochemistry. A brief allusion is made to parasites but only fungi are mentioned. The important taxonomic evidence provided by plant-insect associations is referred to.

Herbarium practice is introduced in chapter 8. There are several sagacious recommendations here, in particular, the need to study the taxonomist as a human material and the advisability of soft-peddling the literature in order to achieve an independence of judgment.

Chapter 9, on the presentation of data, includes a useful survey of the numerous methods of taxonomic mapping and graphical illustration that have been developed in recent years. It is followed by an account of phenotypic variation which the taxonomist should allow for.

Population structure and breeding systems are considered in moderately s Chapter 11. The next chapter is ecological and assesses the impact of Ture of the ecotype and of the researches of Clausen, Keck and Hiesey, and of G traditional taxonomy. A brief account is also given of Sinskaja's taxonomic vic déme concept associated in particular with Gilmour.

The last two chapters deal respectively with speciation and the taxonomic t hybridization. The book concludes with an extensive bibliography, marred s mis-spellings and badly out of alphabetic order on pp. 522-23, and the subj

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us to pay attention to the fact that the cluster vibrato gracefully rotates the sour conflict. Flavonoids and the evolution of the angiosperms, a substrate precession accentuation reflects behaviorism.

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Patterns of evolution in early angiosperms, p.