of cladistic principles. Character polarity is determined primarily through outgroup comparison. Because of uncertainty about the identity of the outgroup, separate analyses are conducted in relation to five possible outgroups: Gentianales, Polemoniales, Campanulales, Lomariaceae, and the Cornalean "core-complex" (senso Phillipson). Whenever is used, there are more synapomorphies uniting the Lamiales with the Scrophulariales than with the Boraginaceae. The few apomorphies shared by the Boraginaceae and Lamiales are structurally related and could be considered a single trend in gynoecial morphology, whereas those shared by the Scrophulariales and Lamiales pertain to a wide variety of vegetative and floral structures as well as phytochemistry. It is concluded that the hypothesis linking Lamiales and Scrophulariales as sister groups is better supported than that linking Lamiales with Boraginaceae.

CLARK, CAROLYN A. Forestry and Range Projects Office, Lockheed Engineering and Management Services Company, Inc., 1830 NASA Road One, Houston, TX 77258. - The ligule - a scanning electron microscope study of a morphological character used in grass systemsatics.

The ligule is a morphological feature characteristic of leaves of most but not all grasses (Poaceae). It is a membranaceous or ciliate collar-like appendage or fleshy present on the adaxial surface of the blade. Ligules in Poaceae are not present in many genera and are the same in some. In some cases, the ligule appears to be a character that, used in conjunction with other grass morphological characters, may quickly differentiate very similar appearing Panicum species from Paniceae taxa.

CLARK, CURTIS. Biological Sciences, California State Polytechnic University, Pomona, CA 91768. - Relationships between experimental and phylogenetic systematics: An overview. Botanical Society of America, Misc. Ser., Publ. 162.

CLARK, CURTIS. Biological Sciences, California State Polytechnic University, Pomona, CA 91768. - Hybridization in Encelia (Compositae; Heliantheae) and its effect on phylogenetic analysis. Botanical Society of America, Misc. Ser., Publ. 162.

COILE, NANCY C., and SAMUEL B. JONES, JR. Botany Department, University of Georgia, Athens, GA 30602. - Systematics of Lycnocephora Mart. (Compositae: Vernoniaceae). Consisting of eleven species of shrubs, the genus Lycnocephora is endemic to the Brazilian Planalto. Lycnocephora is characterized by its tooth-shaped heads and by features of the achenes and pappus. The speciation patterns of the genus will be discussed. Additionally, the morphological variation will be examined in an attempt to determine the relationships of this genus with other genera in the tribe Vernoniaceae.