Materials and Methods

This study is based on examination of type specimens as described for each species and on 35,530 nontype specimens, including 2,546 collected and studied during a total of approximately 180 days field work by myself and Stanley A. Rewolinski undertaken in 1984 and 1985 in Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, South Dakota, Utah, Washington, and Wyoming. The study includes examination of 2,084 everted internal sacs of the male aedeagus. In addition, I studied adults of 47 Palaearctic species for comparative purposes in determining character state polarity.

Criteria for Species and Subunits of Species

For this study, I accept the biological species definition of Mayr (1969): a species consists of "Groups of actually (or potentially) interbreeding natural populations which are reproductively isolated from other such groups." My operational procedure for delimiting species consisted of a series of falsifiable working hypotheses. The first phase of the procedure was the sorting of as many adults as possible into preliminary groups, each such group defined by one or more distinctive morphological features. Some adults had features intermediate between those found in one or more groups and could not be placed in distinct groups. The initial hypothesis was that each preliminary group represented a separate species. This hypothesis was tested by examining the adults that did not sort to any of the initial groups. For each preliminary group, the hypothesis was regarded as falsified if there were adults that had features intermediate between those defining that group and another such assemblage. Groups that shared beetles with morphological