

Summary and Discussion

The genus *Pissonotus* contains 43 valid species, occurring from southern Canada to Argentina (Table 6, Appendices 1–7). Of the 43 valid species, 30 were previously placed in the genus (1 subspecies elevated to species level), 2 are moved into *Pissonotus* from other genera, and 11 are described as new. Also, 3 species are treated as junior synonyms – *P. exiguus* Morgan and Beamer synonymized with *P. frontalis* (Crawford); *Dicranotropis bakeri bakeri* Crawford synonymized with *P. piceus* (Van Duzee); and *Delphacodes pictifrons* Osborn synonymized with *P. piceus* (Van Duzee) – and 9 are removed from *Pissonotus* (Tables 6–7). To insure stability of nomenclature, lectotypes are designated for *P. muii* Metcalf, 1943; *P. crawfordi* Metcalf, 1923 (a synonym of *P. basalis* Van Duzee); and *Phyllodinus koebelei* (Osborn, 1903) (a synonym of *P. flabellatus*). The *P. piceus* species complex is described and defined to include the species *P. piceus*, *P. dentatus*, *P. abdominalis*, and *P. boliviensis*; however, no subgenera are recognized for the genus.

The phylogenetic analyses suggest the presence of 6 clades within *Pissonotus*, which are reflected in the taxonomic arrangement of this revision and the phylogenetic estimate (Fig. 96; the *marginatus* clade forms a ladder in this arrangement). In all the cladistic analyses presented, a *maculated frons* and *pale tegminal venation that reaches the distal wing margin* are plesiomorphic states for the genus *Pissonotus*. *Expanded front tibiae* also may be a plesiomorphic condition.

Derivations within the genus *Pissonotus* suggested by the cladistic analyses include *frons with conspicuous pale carinae*, *tegmina with veins concolorous with membrane*, *distal margin of tegmina with white transverse band*. These analyses also suggest that the color patterns within *Pissonotus* are useful phylogenetic features. The discovery of additional features would be desirable to improve phylogenetic resolution for *Pissonotus*; however, as noted earlier, techniques in addition to light microscopy are needed to provide additional characters. One morphological possibility is that setae on the male parameres, if consistent in occurrence, may provide clues to paramere transformation within *Pissonotus*, and perhaps other Delphacini.

In the preferred phylogenetic tree (Fig. 96), most of the basal species (*P. quadripustulatus* through *P. radiolus*, but not *P. frontalis*, *P. neotropicus*, *P.*