

# Revision of Diagnostic Morphological Traits in Three Caribbean Species of *Heterotermes* (Isoptera: Rhinotermitidae)

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Termites of the genus *Heterotermes* Froggatt (Rhinotermitidae: Heterotermitinae) are pantropical subterranean wood-feeders capable of causing significant structural damage. Despite their economic importance, the taxonomy of *Heterotermes* remains understudied due to a lack of robust morphological characteristics enabling reliable identification. The aim of this study was to investigate a range of novel morphometric attributes in four Caribbean species of *Heterotermes* previously identified by sequencing of three genes. All samples were from Puerto Rico and genetically attributed to either *Heterotermes cardini* (Snyder), *H. convexinotatus* (Snyder), *H. tenuis* (Hagen), or an undescribed *Heterotermes* sp. Only members of the soldier caste were examined. Soldiers (at least three from each sample) were imaged and measurements made using the image-stacking AutoMontage program. Preliminary results demonstrated that measures of the pronotum (the upper surface of the first thoracic segment [prothorax]) were useful for species identification, and thus this aspect of termite anatomy was singled out for extensive investigation. For each specimen, three pronotal morphometric indices were examined: the ratio of pronotum breadth to width, curvature of the anterior pronotal margin, and curvature of the posterior pronotal margin. In addition, mandible and head length were measured. Initial comparison of morphometric and genetic data suggested that only traits of the anterior pronotal margin, a novel taxonomic character, were useful in discriminating among these four *Heterotermes* species. In particular, morphometric data suggested that the undescribed *Heterotermes* sp. was a distinct species as opposed to a member of a species complex with *H. cardini*. Thus, this morphometric study further supported phylogenetic data indicating that four distinct species of *Heterotermes* occur in Puerto Rico.