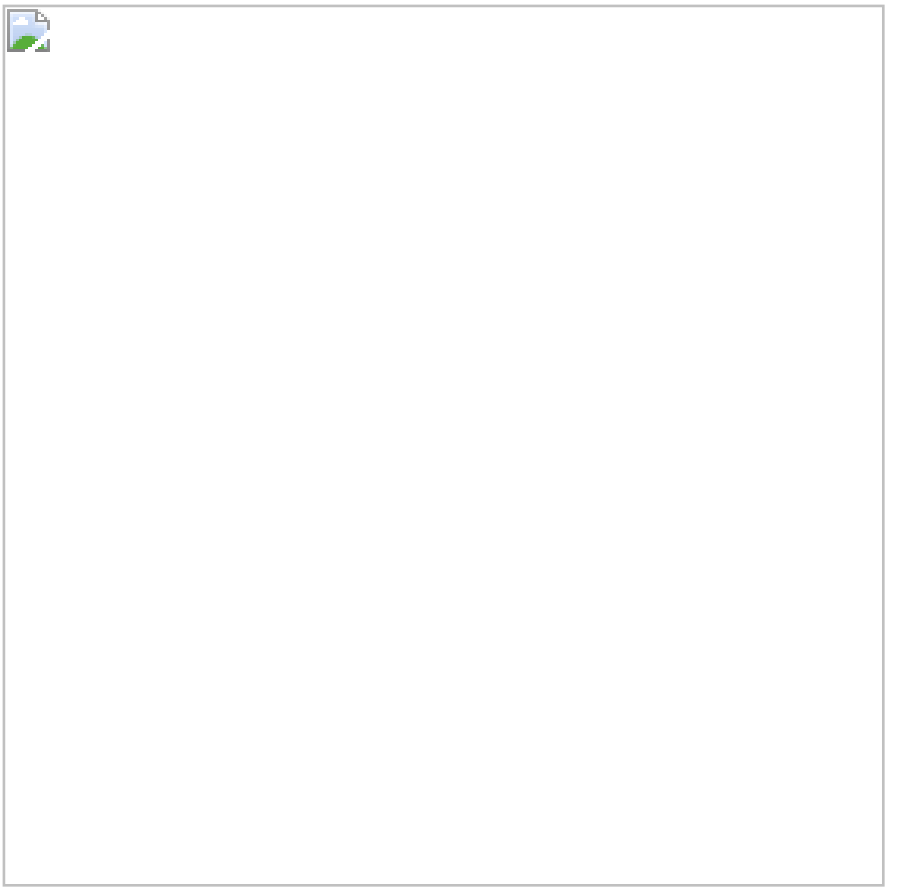

SURVEY OF THE TERMITES (ISOPTERA: KALOTERMITIDAE, RHINOTERMITIDAE, TERMITIDAE) OF NICARAGUA

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SURVEY OF THE TERMITES (ISOPTERA: KALOTERMITIDAE, RHINOTERMITIDAE, TERMITIDAE) OF NICARAGUA

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The termite fauna of Nicaragua is poorly known relative to that of other Central American countries such as Costa Rica and Panama (Constantino 1998; Nickle & Collins 1992). Maes (1990) published a list of 10 termite species from Nicaragua based on published records. Maes' 1990 list consists of termites that can be grouped as arboreal nesters (3 *Nasutitermes* spp.), epigeal or soil nesters (3 *Microcerotermes* spp.), structure-infesting subterranean species (2 *Coptotermes* spp., 1 *Heterotermes* sp.), and two drywood/dampwood species (1 *Incisitermes* sp. and 1 *Neotermes* sp.). Termites with more cryptic habits, such as those that nest and forage in the soil or solely in wood were underrepresented in Maes' list. This note presents the results of an initial survey of Nicaragua intended to systematically catalog all termite taxa of that country.

During 30 May-5 June 2004, we collected 938 termite colony samples from 46 localities along roadsides and trails in as many geographically and ecologically diverse habitats as time and accessibility permitted (Fig. 1). Our survey yielded 35 species in 19 genera and three families representing one of the more diverse termite faunas in Mesoamerica (Constantino 1998). All species listed by Maes (1990) were collected by us, however, the validity of *Coptotermes crassus* Snyder and *Cop. niger* Snyder remain uncertain (R. H. Scheffrahn, unpublished data). We have identified all 54 of our *Coptotermes* samples as *Co. testaceus* (Linnaeus), but we herein report all three as being present in Nicaragua based on their current status, bringing the total faunal count for Nicaragua to 37 species, including 27 new species records (Table 1). Identifications were made by Krecek and Scheffrahn, and specimens are housed in the University of Florida Termite Collection, Fort Lauderdale Research and Education Center.

Our survey established significant new southern range extensions for *Incisitermes nigritus* (Snyder), *Marginitermes hubbardi* (Banks), *Tenuirostritermes briciae* (Snyder), *T. incisus* (Snyder), and *Amitermes cryptodon* Light (Table 1). We also report new northern range extensions for *Calcaritermes brevicollis* (Banks), *Comatermes perfectus* (Hagen), *Cryptotermes dudleyi* Banks, *Glyptotermes angustus* (Snyder), *G. contracticornis* (Snyder), *Anoplotermes parvus* Snyder, *A. pyriformis* Snyder, *Atlantitermes kirbyi* (Snyder), and *Embiratermes chagresi* (Snyder). The collections of *Cryptotermes brevis* (Walker), *Cr. longicollis* Banks, *I. immigrans* (Snyder), *Neotermes castaneus* (Burmeister), *Amitermes beaumonti* Banks, *Coptotermes* spp., *Heterotermes convexinotatus* (Snyder), *Hoplotermes amplus* Light, *Microcerotermes arboreus* Emerson, *M. exiguus* (Hagen), and *M. gracilis* Light join previously known ranges north and south of Nicaragua. We collected three apparently new species of soldierless termites (Termitidae: Apicotermitinae) and a new species of *Nasutitermitinae* that are likely members of undescribed genera.

It is probable that several more described and new termite species remain to be discovered in Nicaragua considering the country's size, centralized location, diversity of habitat, and the geographically limited extent of the current survey (Fig. 1). We thank Jean-Michel Maes, Museo Entomológico, León for collecting permits and Danilo Barquero for logistical assistance while in Nicaragua. W. H. Kern Jr. and Brian J. Cabrera reviewed this contribution No. R-10475 of the University of Florida, Agricultural Experiment Station, Journal Series.

SUMMARY

A field survey of the termites of Nicaragua resulted in expansion of the country's fauna to 37 species in 19 genera and 3 families. Twenty-seven species records are added for Nicaragua and three apparently new species were discovered.

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TABLE 1. TERMITE SPECIES RECORDS FROM NICARAGUA LISTED ALPHABETICALLY BY FAMILY AND SUBFAMILY.

Taxon	Comments	Previous Nearest Locality	Previous Locality Reference
Kalotermitidae			
Calcaritermes brevicollis (Banks)*	Eastern lowland forest	Panama	Banks 1918
Comatermes perfectus (Hagen)*	Mountain rainforest species	Panama	Constantino 1998
Cryptotermes brevis (Walker)*	Structures only, pest species	Pantropical	Constantino 1998
Cryptotermes dudleyi Banks*	Introduced pest species, dead wood	Costa Rica	Snyder 1926a
Cryptotermes longicollis Banks*	Fence posts, dead wood	Panama	Banks 1918
Glyptotermes angustus (Snyder)*	Western alpine forest	Costa Rica	Araujo 1977
Glyptotermes contracticornis (Snyder)*	Western alpine forest	Costa Rica	Snyder 1925
Incisitermes immigrans (Snyder)	Fence posts, dead wood	Nicaragua	Maes 1990
Incisitermes nigritus (Snyder)*	Fence posts, dead wood, common	Guatemala	Snyder 1946
Incisitermes tabogae (Snyder)*	Fence posts, dead wood	Panama	Snyder 1924
Marginitermes hubbardi (Banks)*	Nearest record Mexico; dead wood; west, rare	Mexico	Myles 1997
Neotermes castaneus (Burmeister)	Live and dead mangroves; east	Nicaragua	Maes 1990
Rhinotermitidae			
Coptotermes crassus Snyder	Subterranean nester, pest species	Nicaragua	Maes 1990
Coptotermes niger Snyder	Subterranean nester, pest species	Nicaragua	Maes 1990
Coptotermes testaceus (Linnaeus)	Subterranean nester, pest species		
Heterotermes convexinotatus (Snyder)	Subterranean nester, pest species	Nicaragua	Maes 1990
Termitidae			
Apicotermitinae			
Anoplotermes parvus Snyder*	East coast ground nest at base of tree	Panama	Snyder 1923
Anoplotermes s.l. sp. A*	Western, under rocks, new sp.?		
Anoplotermes s.l. sp. B*	Western, under rocks, new sp.?		
Anoplotermes s.l. sp. C*	Western, under rocks, new sp.?		
Anoplotermes s.l. nr. *pyriformis* Snyder*	Western, under rocks	Costa Rica	Snyder 1934

*New record for Nicaragua.

TABLE 1. (CONTINUED) TERMITE SPECIES RECORDS FROM NICARAGUA LISTED ALPHABETICALLY BY FAMILY AND SUBFAMILY.

Taxon	Comments	Previous Nearest Locality	Previous Locality Reference
Nasutitermitinae			
Atlantitermes kirbyi (Snyder)*	Dead wood on ground, east and west, rare	Panama	Snyder 1926b
Embiratermes chagresi (Snyder)*	Under rocks, wood; east, rare	Costa Rica	Constantino 1998
Nasutitermes corniger (Motschulsky)	Arboreal nest, pest species	Nicaragua	Maes 1990
Nasutitermes ephratae (Holmgren)	Arboreal nest, pest species	Nicaragua	Maes 1990
Nasutitermes nigriceps (Haldeman)	Arboreal nest, pest species	Nicaragua	Maes 1990
Subulitermes s.l. n. sp.*	Under rocks, wood; west rare		
Tenuirostritermes briciae (Snyder)*	Western, under rocks, cow dung; common	Honduras	Snyder 1922
Tenuirostritermes incisus (Snyder)*	Eastern, under rocks, on fence post; common	Honduras	Snyder 1922
Termitinae			
Amitermes beaumonti Banks*	Dead wood on ground	Costa Rica	Constantino 1998
Amitermes cryptodon Light*	Nearest record Mexico, rare	Mexico	Light 1930
Hoplotermes amplus Light*	Under rocks, cow dung; widespread	Costa Rica	Constantino 1998
Microcerotermes arboreus Emerson	Ground nest	Nicaragua	Maes 1990
Microcerotermes exiguous (Hagen)	Ground nest	Nicaragua	Maes 1990
Microcerotermes gracilis Light*	Southwest, soil nester?	Costa Rica	Constantino 1998
Termes hispaniolae (Banks)*	Black carton nest in tree crotches, voids	Panama	Banks 1918
Termes panamensis (Snyder)*	Black carton nest in tree crotches, voids	Panama	Snyder 1923

*New record for Nicaragua.

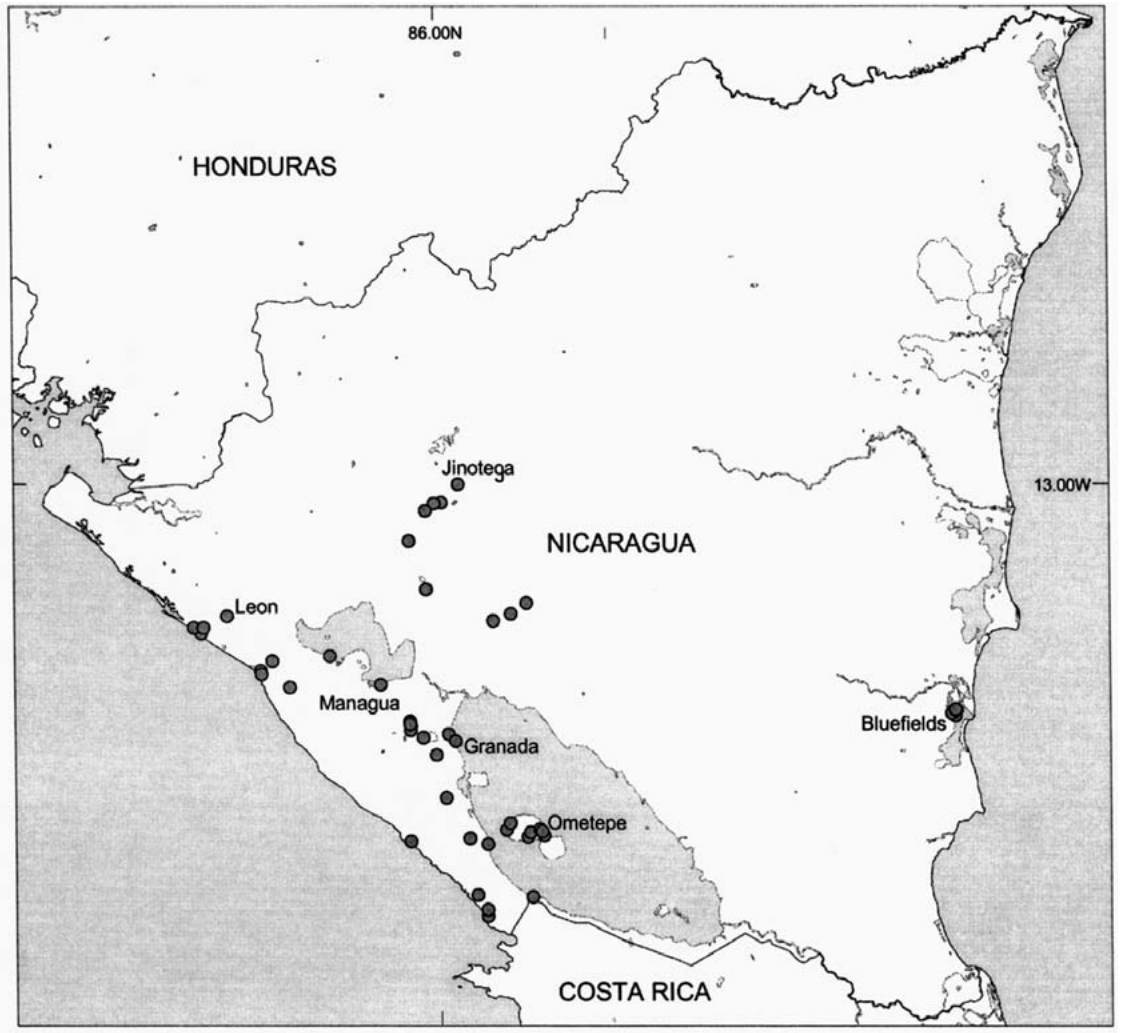

Fig. 1. Collection sites (dark circles) represented in the current survey.

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