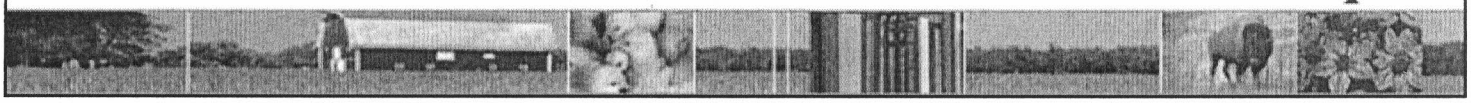

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THE GEOGRAPHICAL DISTRIBUTION OF THE TERMITE GENERA *RETICULITERMES*[1/], *COPTOTERMES*[1/], AND *INCISITERMES*[2/] IN TEXAS

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ABSTRACT

The termite genera *Reticulitermes*, *Coptotermes*, and *Incisitermes* are more widespread in Texas than has been previously documented. Termite collections from over 30% of the 254 counties in Texas have expanded the known ranges of several species. *R. hageni* Banks and *R. virginicus* Banks extend further westward than previously reported. *R. flavipes* (Kollar) and *R. tibialis* Banks were collected throughout the state. The known range of *Incisitermes* was greatly expanded inland with *I. snyder* (Light) being the dominant species. *Coptotermes spp.* was collected from five new locations on the Texas Gulf coast.

INTRODUCTION

Species of the genera *Reticulitermes*, *Coptotermes*, and *Incisitermes* are the major termite pests infesting wooden structures in Texas, although a few collections of *Heterotermes* and *Cryptotermes* have been made from structural timbers in the state. The total annual economic impact of damage done by termites to structures in Texas is not known. Granovsky (unpublished data) estimates the costs for termite inspections, treatment of termite infestations, and repair of termite damage in Corpus Christi alone to be 3.7 million dollars annually. Likewise, the same categories of costs are estimated by Granovsky (unpublished data) to be $30 million annually for the Greater Houston area.

The termite genera treated herein contain the major structural pest species in the United States. The genus *Reticulitermes* contains the majority of the "subterranean termites"; the genus *Coptotermes* is the "Formosan termite" group, and the genus *Incisitermes* contains the majority of the "drywood termites". In Corpus Christi, Granovsky (unpublished data) found that 13.4% of homes inspected had concurrent infestations of both drywood and subterranean termites. No concurrent infestations of *Coptotermes* and another genus have been observed. As the control measures for each genus are unique, the amount of concurrent

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1/ Isoptera: Rhinotermitidae
2/ Isoptera: Kalotermitidae

infestation makes a significant contribution to the economic impact of termites.

METHODS AND MATERIALS

With the exception of data for I. banksi, the geographical distribution data presented herein are based on data from 380 collections maintained in the Insect Collection, Department of Entomology, Texas A & M University, College Station TX. . Some of the material was collected by extension and research personnel of the Texas A&M University System, and the remainder of the specimens studied were contributed by pest control operators (PCOs) in the state.The PCOs participating in the collection effort were located in 26 cities around the state (Fig. 1). These PCOs were supplied collection kits consisting of alcohol-filled vials and pre-addressed mailing tubes. The PCOs collected the termites encountered during the normal course of their work and mailed the specimens to Texas A&M Univ. All cooperating PCOs made specimen collections for the survey. Collection data for I. banksi (Snyder) is from Banks and Snyder (1920)

The known geographic distribution for each genus is presented with a diagnostic narrative; a list of label data for the specimens collected; and a map of collection sites. Incisitermes species determinations were made from both alates and soldiers. Only alates of Reticulitermes and Coptotermes were used to determine species because there are no accurate keys for the soldiers of these two genera. Many of the collections for these two genera are listed by genus only.

All termite identifications were by the authors using Weesner's (1965) keys.

RESULTS AND DISCUSSION

Geographic Distribution. The cooperation by these PCOs increased the number of counties represented by termite collections from 20 counties at the start of the study to the 90 counties presently represented. Members of all three genera were taken in Beaumont, Galveston, Houston, Pasadena, Port Arthur and Texas city. Both Reticulitermes and Incisitermes were collected as structural pests throughout the southeastern quadrant of the state.

Reticulitermes spp. The genus Reticulitermes is distributed throughout the State of Texas with four species represented. Reticulitermes hageni (Fig. 2) and R. virginicus (Fig. 3) extend at least 300 km farther westward than reported by Kofoid (1934). Reticulitermes flavipes and R. tibialis (Fig. 4) appear to be distributed throughout the state as reported by Kofoid (1934). These four species are represented in the collection by winged specimens. Soldiers of Reticulitermes spp. have been collected from 21 counties not represented by collections of winged insects. The counties in which either soldiers or winged individuals of Reticulitermes have been taken are shown in Fig. 5.

Coptotermes spp.Termites of the genus Coptotermes are known collectively as the "Formosan termites". Coptotermes formosansus and C. crassus are present in Texas. This termite

has been collected in Galveston, Harris and Jefferson counties (Fig. 6).

This genus is commonly believed to have been introduced from the Pacific Theater during shipping after WWII. Introduction via shipping seems to be the principal dispersal method for this genus (Weesner, 1965).

Incisitermes spp. The genus Incisitermes is represented in Texas by three species, I. snyderi, I. minor and I. banksi. I. banksi is known only from the type locality in Uvalde Co., where it was collected in native vegetation. The other two species are serious economic pests throughout the Southeastern quadrant of the state (Fig. 7). An undocumented widespread belief among Texas PCOs has been that drywood termites only exist near the Gulf Coast (100 to 150 km inland) even though I. snyderi was collected as early as 1956 more than 300 km from the Gulf Coast. Currently the northernmost collection of I. snyderi is from a Collin Co. (north of Dallas) home in which it had caused extensive structural damage . However, I. minor has been collected only from the eastern half of the area occupied by Incisitermes and from El Paso.

LABEL DATA

Label data for the genera discussed in this paper may be obtained by contacting the senior author.

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Banks, N., and T. E. Snyder. 1920. A revision of the Nearctic termites. U. S. Nat'l Museum Bull. 108, 228pp.

Kofoid, C.A. 1934. Termites and Termite Control. 2nd ed. Univ. of Calif. Press. Berkeley CA.

Weesner, F.M. 1965. The Termites of the United States-A Handbook. Nat'l Pest Control Assn. Elizabeth NJ. 67p.

FIG. 1. Location of cooperating pest control operators.

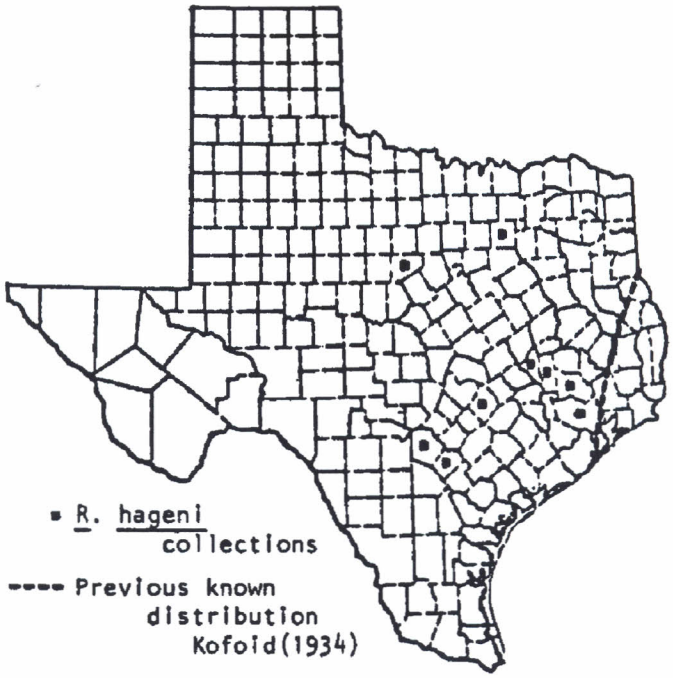

FIG. 2. R. hageni distribution.

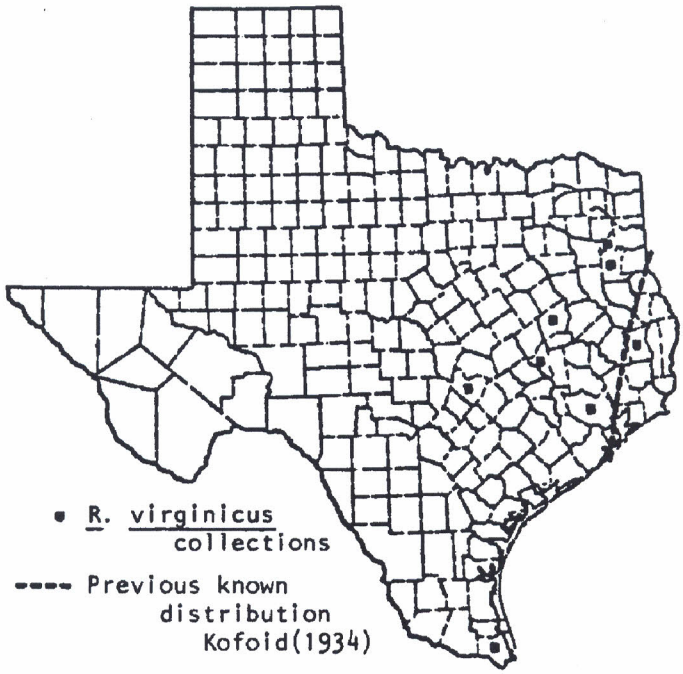

FIG. 3. R. virginicus distribution.

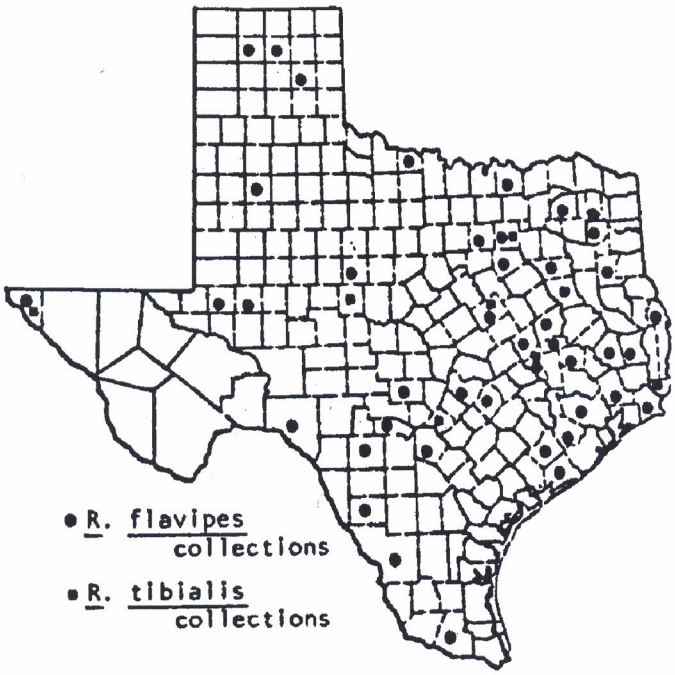

FIG. 4. R. flavipes and R. tibialis distribution.

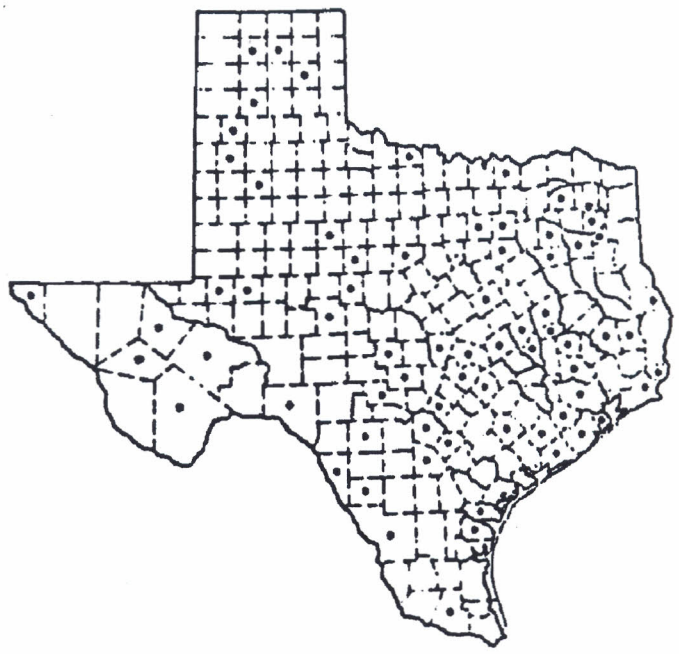

FIG. 5. Reticulitermes spp. distribution.

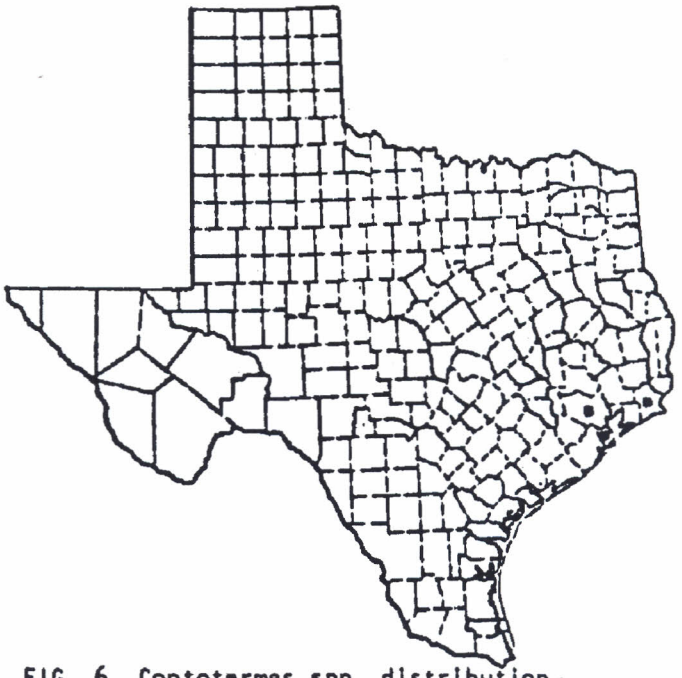

FIG. 6. Coptotermes spp. distribution.

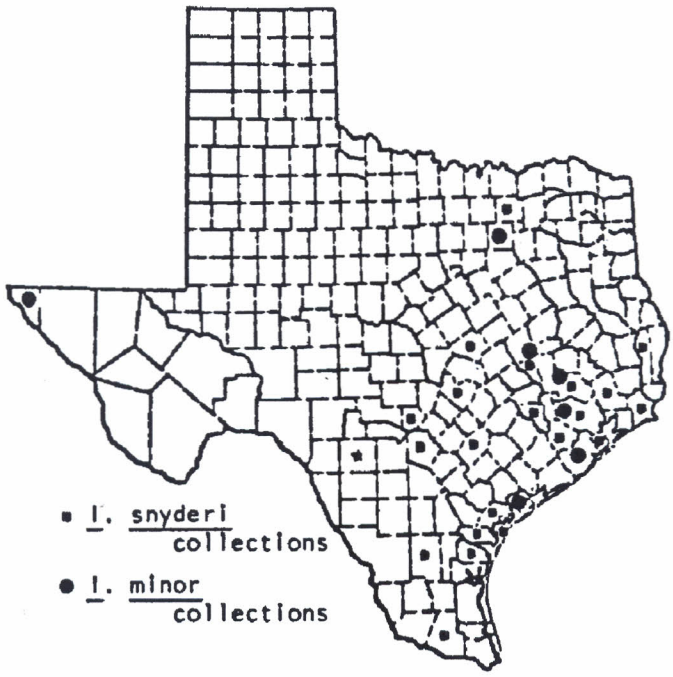

FIG. 7. I. snyderi and I. minor distributions.