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THE CERAMBYCIDAE OF NORTH-CENTRAL TEXAS

STEVEN W. LINGAFELTER[1] AND NORMAN V. HORNER

Department of Biology, Midwestern State University,
Wichita Falls, TX 76308, U.S.A.

ABSTRACT

A faunal study of the long-horned beetles (Coleoptera: Cerambycidae) from the 37 counties comprising north-central Texas produced records of 107 species and subspecies. Represented are 68 genera and 36 tribes from four subfamilies. Natural history observations including information on distribution, seasonal occurrence, and host vegetation are given for each taxon. Comments on morphological variation and taxonomic problems are included. Lists of county records accompany each species account.

The Cerambycidae are a large family of morphologically diverse beetles, many of which are phytophagous on woody vegetation during their larval stage. Depending on the classification used, this family may include as many as 35,000 species worldwide (Lawrence 1982). The abundance, distribution, and diversity within the family has established its popularity among amateur and professional coleopterists. In the tropical and subtropical regions, where much attention is being directed toward the family, the diversity and abundance of these beetles is much greater than that of a temperate region like north-central Texas. This difference is shown by a study in Jalisco, Mexico, in which 13 successive early morning trips to an illuminated roadside sign yielded a total of 101 species (Chemsak *et al.* 1988). In contrast, this comprehensive, comparatively long-term study of temperate north-central Texas revealed a total of only 107 taxa.

The area of north-central Texas (hereafter abbreviated NCT) included in this survey is shown in Fig. 1. The region, containing 37 counties, comprises approximately 11 percent of the total Texas land area and transects several major vegetational regions (Fig. 2). The western one-third is an area of rolling plains covered by mesquite savanna which represents the southeast portion of the Kansan biotic province as defined by Blair (1950). The central one-third has a vegetation of mixed prairies and oak forests which represent the Western Cross Timbers. The eastern one-third is characterized by the Blackland Prairie which is transected by a narrow band of mixed oak and hickory forests known as the Eastern Cross Timbers. Together with the Western Cross Timbers, the Blackland Prairie and Eastern Cross Timbers comprise the northern half of the Texas portion of the Texan biotic province (Blair 1950).

The order of taxonomic treatment of this work follows that of Chemsak and Linsley (1982), except where recent nomenclatural changes have dictated modification. A primary source of higher nomenclatural changes is Fragoso *et al.* (1987), who examined the genitalia of the Cerambycinae and changed the tribal status of several groups based on their findings. Appendix 1 lists the NCT taxa and their higher classification.

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[1] Present address: Snow Entomological Museum, Snow Hall, University of Kansas, Lawrence, KS 66045, U.S.A.

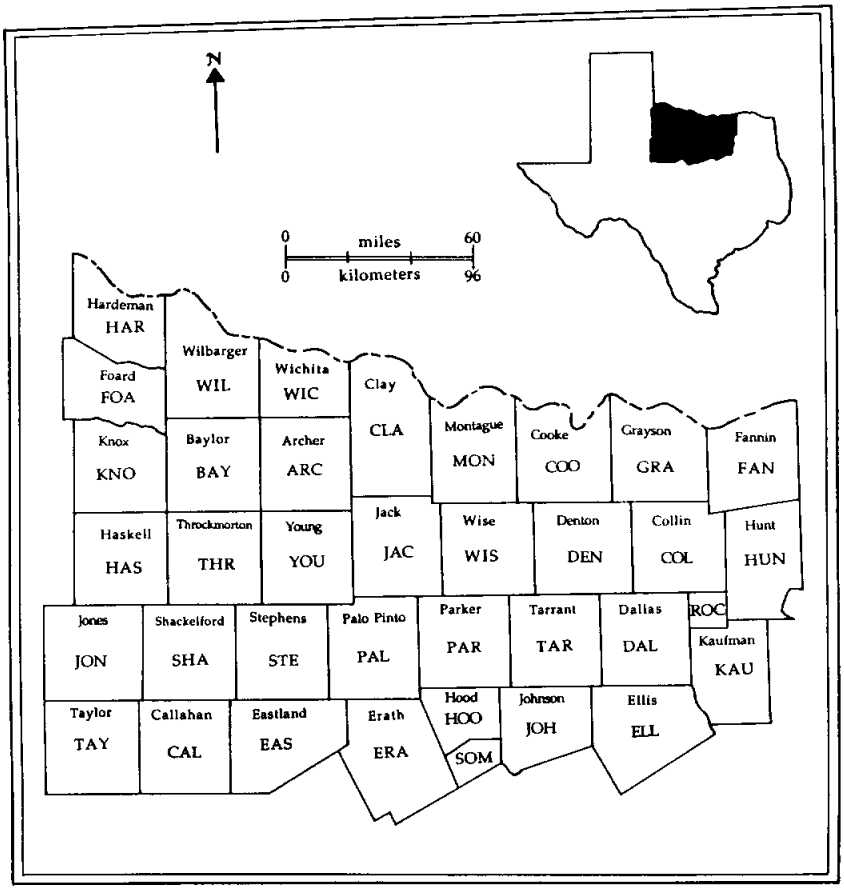

Fig. 1. Region of faunal survey showing the 37 counties of north-central Texas. ROC = Rockwall County and SOM = Somervell County.

Materials and Methods

Data for this study were in part obtained by examination of institutional and private collections. Data obtained from specimens included collection date (month and year), locality by county, and habitat or method of collection. This information was gathered from the institutional collections of Midwestern State University (MSU), Stephen F. Austin State University (SFASU), Texas A&M Agricultural Extension Station at Vernon (TAMAES), Texas A&M University (TAMU), Texas Tech University (TTU), University of North Texas (UNT), and the private collections of Dan Heffern (DH), D. J. Kocurko (DJK), Tim Kaspar (TK), Steven Lingafelter (SL), Russell Pfau (RP), Roy Vogtsberger (RV), and Charlie Wolfe (CW). Additionally, the Museum für Naturkunde Humboldt-Universität (ZMHB), The Ohio State University (OSUC), and the United States National Museum (USNM) contain county records gleaned from the literature or through personal communications; however, these collections were

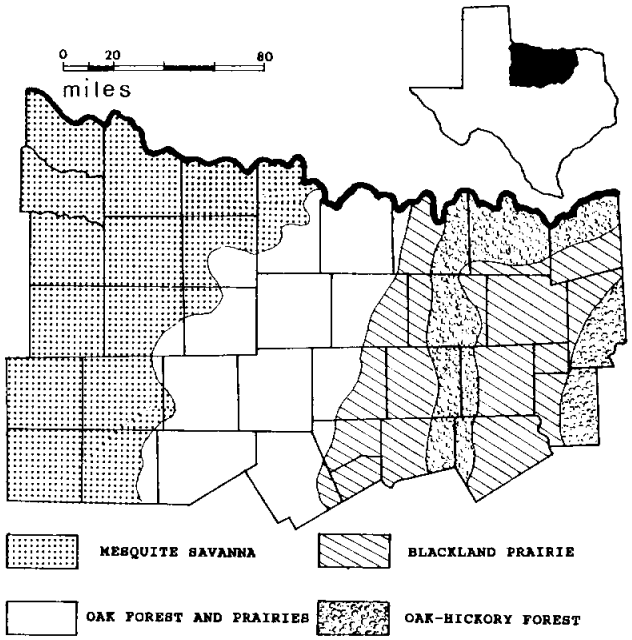

Fig. 2. Major vegetational zones of north-central Texas based in part on Blair (1950).

not examined personally. These acronyms are used in the following species accounts in two contexts. First, they are used to indicate the deposition of specimens examined. Second, they are used to relate biological information with the collector or collection of the specimens being discussed.

Additional data were gathered through numerous collecting trips in NCT. Due to the diversity of habits of cerambycids, many different collecting methods were employed. Those of primary importance included using fluorescent lighting (black and white), sugar-bait trapping, examination of wildflowers, and sweeping and beating of foliage and other vegetation. Rearing was not employed. Thus few new larval hosts were recorded in this study and results are based almost exclusively on adult specimens.

Information concerning county records, host associations, seasonality, biology, and taxonomy is presented for each species. In many cases, some of this information is taken directly from specimen labels. In cases where this information is provided by colleagues, the acronyms (see above) are included to credit them. Maps showing the NCT county records for most species are included in Lingafelter (1991), although additional species and county records have since been recorded. Acronyms for the county records are herein listed for each species. The acronyms consist of the first three letters of each county name and are also included in Fig. 1.

Biases are an inherent part of all surveys and this study is no exception. The optimal methodology for a survey of this scope would be to sample every microhabitat of every county with every collecting method for several years. This, of course, is not realistic and even if possible, would still not reveal every species. Efforts were therefore divided among examining all the major collec-

tions in Texas (thus utilizing a data accumulation of many years) and collecting in as many NCT localities as possible. It is hoped that this study will elucidate poorly represented areas and provide a framework on which more localized and intensive studies can be based.

Results and Discussion

Over 2,600 specimens and records of Cerambycidae from NCT were examined in this study. A total of 107 species and subspecies representing 68 genera and 36 tribes was recorded. These taxa represent four subfamilies: Prioninae, Cerambycinae, Lepturinae, and Lamiinae. Fig. 3 shows the relative species representation of each subfamily in NCT. Nearly half of all species recorded belong to the Cerambycinae, while the Prioninae accounted for the fewest species.

Seasonal and daily distributions for most species were tabulated (Fig. 4). Data in Fig. 4 are based on the following criteria: spring is defined as March through May; summer is June through August; and fall is September through November. Since there are very few records of Cerambycidae occurring from December through February, these months were not included. To be included in a designated season, at least 75 percent of the specimens for a given species must have been recorded within those boundaries. Otherwise, the taxon would be declared as transitional and would overlap at least 2 seasons such as spring/summer or summer/fall. For the several species defined as transitional over all the seasons (spring, summer, and fall), at least 25 percent of the specimens must have been collected in each season. Figure 4 also shows the relationship of species most commonly encountered in daytime compared with those collected at night. At least 75 percent of the specimens (for which there were data) for a given taxon must have been collected at night for that taxon to be considered nocturnal. The spring fauna is most diverse, including nearly one-third of all species recorded. Although nocturnal species accounted for nearly half of all species, only 25 percent of the spring species are nocturnal. There are fewer species of cerambycids present in summer than in spring. However, 61 percent of the summer species are nocturnal. The fall fauna is much smaller still, with only 5 species restricted to this season, two of these being nocturnal.

Fig. 5 shows the size of each subfamily for each season based on the same criteria used in Fig. 4. Nearly two-thirds of the spring fauna was comprised of species in the Cerambycinae. However, there were 6 lepturine and 6 lamiine species which, had they not occurred in June, would have lessened the dominance of the spring Cerambycinae. The Lepturinae occur almost exclusively in the spring and spring/summer transition. There are no lepturines that occur only in the summer. In contrast, the Lamiinae occur in almost equal numbers in the spring, spring/summer transition, and summer faunas, but are dramatically reduced in numbers for the remainder of the year. The Prioninae first make their appearance in the summer fauna. There are a few prionines which have been taken in spring, but these represent less than 25 percent of the records. The summer/fall transitional period shows a dominance of Cerambycinae again while prionine and lamiine diversity decreases considerably. The five strictly fall species in NCT are all in the subfamily Cerambycinae. It should be emphasized that the seasonal distributions of many species cross these artificial seasonal boundaries, but these in each case represent less than 25 percent of the collection records.

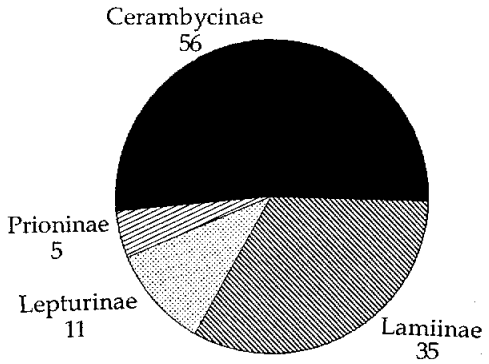

Fig. 3. Diversity relationships of the subfamilies of Cerambycidae based on the number of species occurring in north-central Texas.

Prioninae

The Prioninae include the largest cerambycids encountered in NCT. This is a poorly represented subfamily, as only five species were recorded. Although a few species can be collected in spring, the majority of prionines are active in the summer and are usually attracted to lights. Adults are rarely encountered in the daytime.

Archodontes melanopus serrulatus (LeConte)

COUNTY RECORDS. STE, WIC, WIL.
DEPOSITION OF SPECIMENS. TAMAES, TK.

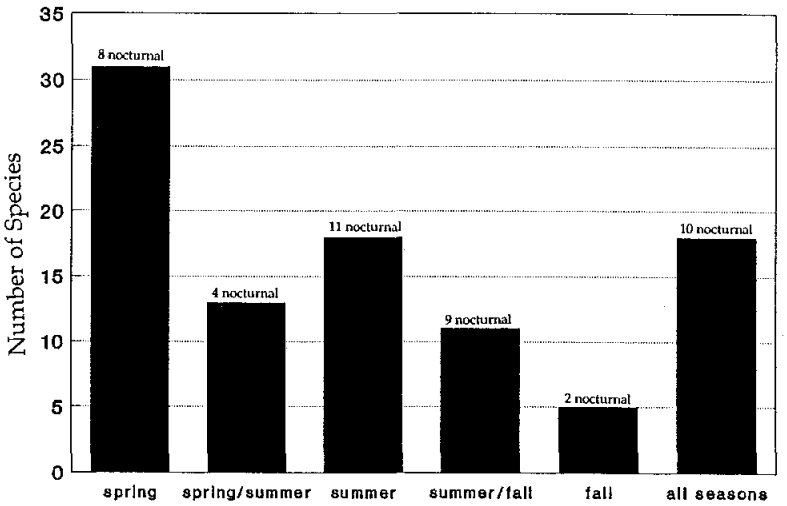

Fig. 4. Number of species of Cerambycidae occurring in each of the six artificially designated periods of the year. The number of nocturnal species for each period is indicated atop each bar.

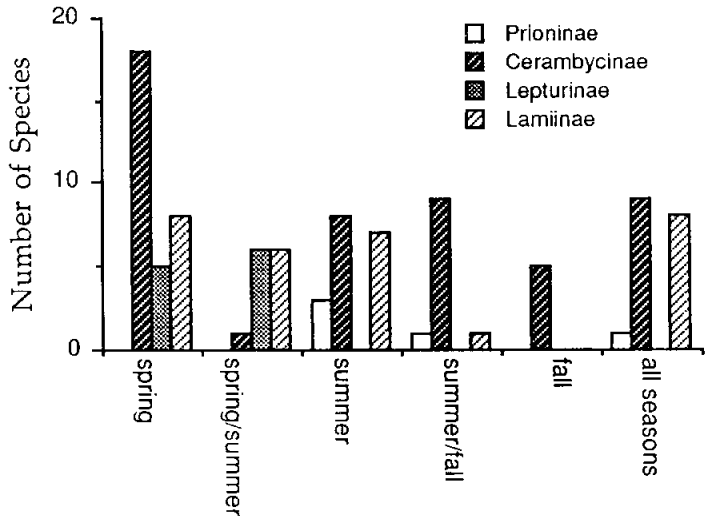

Fig. 5. Number of species in each subfamily for each artificially designated period based on the same taxa used in Fig. 4.

DISCUSSION. This species is distributed in the southern United States from Alabama west to Arizona (Linsley 1962*a*). Sixteen specimens were examined from NCT. These were recorded from June through September, but most were collected in August. Most of these nocturnal cerambycids were taken on the ground. Linsley (1962*a*) states that they are occasionally attracted to lights.

Stenodontes (Orthomallodon) dasytomus dasytomus (Say)

COUNTY RECORDS. COL, DAL, ERA, MON, PAR, TAR.

DEPOSITION OF SPECIMENS. CW, TK, TTU, UNT.

DISCUSSION. This species is distributed in the southern United States from Virginia to Arizona (Linsley 1962*a*). Ten specimens, occurring from June through August, were examined from NCT. Most specimens were taken at lights. The Collin County specimen was taken on logs at night (Tucker 1910).

Derobrachus geminatus LeConte

COUNTY RECORDS. ARC, BAY, CLA, FOA, KNO, TAY, WIC, YOU, PAL, PAR.

DEPOSITION OF SPECIMENS. CW, MSU, RV, SL, TAMAES, TK, TTU.

DISCUSSION. Ranging from Texas to California in the southern United States (Linsley 1962*a*; Chemsak and Linsley 1977), this is the largest cerambycid in NCT as well as the most common prionine. Fifty specimens were examined from NCT. Most were collected from late June through October from the ground at or around lights.

Prionus (Neopolyarthron) imbricornis (Linnaeus)

COUNTY RECORDS. DEN, PAL, WIC.

DEPOSITION OF SPECIMENS. TAMAES, TK, UNT.

DISCUSSION. This species is shown to be distributed in the eastern and central United States into northeast Texas (Linsley 1962*a*). The five specimens examined from NCT were collected on the ground and from white and black fluorescent lights, from April through September.

Prionus (Antennalia) fissicornis Haldeman

COUNTY RECORDS. ARC, DAL, WIC.
DEPOSITION OF SPECIMENS. CW, RV, TK.
DISCUSSION. This species ranges throughout the central United States (Linsley 1962*a*). Eleven specimens were examined from NCT. The species is attracted to lights and seven were taken in one night (RV). It has been recorded from May through July.

Cerambycinae

The Cerambycinae are the largest, most diverse, and best represented cerambycids in NCT. Members of the subfamily are tremendously varied in form and habits and different collecting methods were necessary to capture representatives of different tribes. Fifty-six species in eighteen tribes were examined in this survey. Fig. 6 shows the size of some of the largest tribes based on the number of species records. The Elaphidiini, Trachyderini, and Clytini are the best represented, together accounting for over 60 percent of the species within this subfamily.

Smodicium cucujiforme (Say)

COUNTY RECORDS. COL, KAU, TAR.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. Linsley (1962*b*) indicates a distribution extending throughout the eastern half of the United States, including the eastern two-thirds of Texas. Of the three records, two specimens were attracted to lights in July (CW) and the Collin County specimen was taken by Tucker (1910).

Oeme rigida rigida (Say)

COUNTY RECORDS. ERA, FOA, HAR.
DEPOSITION OF SPECIMENS. SL, TAMU.
DISCUSSION. The distribution of this subspecies is depicted by Linsley (1962*b*) as scattered throughout the southeastern United States with several records from southeast Texas. Seven specimens were recorded in this study. Most specimens were attracted to blacklights (SL).

Tessaropa tenuipes (Haldeman)

COUNTY RECORDS. TAR.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. Linsley (1962*b*) maps the distribution of this species from the northeastern United States into central Texas. The only specimen recorded in this study was collected in late March (CW).

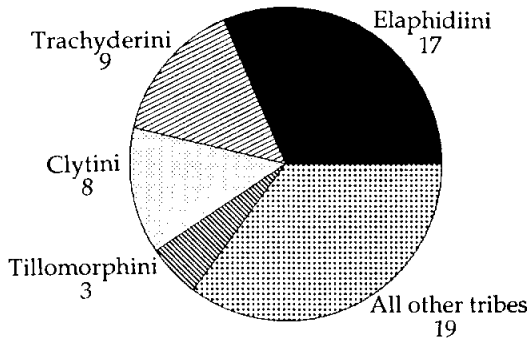

Fig. 6. Size relationships of the larger tribes of Cerambycinae based on the number of species occurring in north-central Texas.

Hypexilis pallida Horn

COUNTY RECORDS. ARC, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. SL.

DISCUSSION. Hovore *et al.* (1987) give the distribution of this species in the United States as from southeastern Arizona to western and southern Texas. Twelve specimens were examined. Most were attracted to lights from June through early October (SL).

Eburia quadrigeminata (Say)

COUNTY RECORDS. COL, FAN.

DEPOSITION OF SPECIMENS. TTU.

DISCUSSION. The distribution of this species is shown by Linsley (1962*b*) to extend throughout the eastern half of the United States and into east Texas. Four of the five NCT specimens show distinct variation from the usual form. They have the outer elytral apical spine at least as long as the sutural spine but the eburneal ridges on the elytra are reduced somewhat, though still geminate. The coloration is also darker, being very similar to the normal *Eburia haldemani.* These four specimens were attracted to a blacklight in Fannin County, in the extreme eastern part of the study area in August (TTU). The other NCT specimen, from Collin County, was recorded by Tucker (1910).

Eburia haldemani LeConte

COUNTY RECORDS. ARC, BAY, COO, DAL, DEN, ERA, MON, PAR, TAR, WIC, WIL, YOU.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SL, TAMAES, TAMU, TK, TTU, UNT.

DISCUSSION. This is the most common NCT *Eburia.* Its distribution is generally west and north of that of *E. quadrigeminata,* stretching from Kansas throughout Texas and into New Mexico and Arizona (Linsley 1962*b*). It shows considerable variation in some of the key characters which are used to separate it from other *Eburia* species. The most common form has geminate eburneal ridges at the basal and mid-elytral positions, like *E. quadrigeminata,* but the outer basal ridge and inner mid-elytral ridge each show reduction in size. The

outer apical elytral spine is usually very reduced to dentiform. Coloration is normally darker than that of *E. quadrigeminata,* being usually darker brown and occasionally with black on the pronotum and around the eburneous ridges. For a brief analysis of eburneous ridge variation and descriptions of the less common varieties see Lingafelter (1992). One hundred and thirteen specimens were examined in this study. Specimens were attracted to syrup and sugar-bait traps (CW, SL, TK). Light-traps, fluorescent lights, and blacklights also attracted the species. Specimens have also been collected under bark (SL). Adults are active in NCT from July through September.

Haplidus laticeps Knull

COUNTY RECORDS. JON, WIC.

DEPOSITION OF SPECIMENS. SL, TK.

DISCUSSION. This species was noted by Rice *et al.* (1985) as rarely collected. The distribution of *H. laticeps* appears to be rather limited. Rice *et al.* (1985) report it from southeast New Mexico and record specimens from Jones County in the southwest corner of NCT. Linsley (1962*b*) gives the type locality to be Sonora, Texas. The Jones County specimens were collected in April from dead *Prosopis glandulosa* (Rice *et al.* 1985). The Wichita County specimens were taken in March at lights (TK).

Tylonotus bimaculatus Haldeman

COUNTY RECORDS. TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU.

DISCUSSION. Linsley (1962*b*) shows species records to be scattered throughout the eastern United States, through Texas, and into southern Arizona. The two specimens recorded in this study were collected in June and July.

Knulliana cincta cincta (Drury)

COUNTY RECORDS. ARC, BAY, COO, DAL, DEN, JAC, KNO, PAR, TAR, TAY, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, MSU, RV, SFASU, SL, TAMAES, TK, TTU, UNT.

DISCUSSION. Linsley (1962*b*) shows that this subspecies is distributed throughout the eastern half of the United States and into west Texas. One hundred and twenty-two specimens were examined in this study. These were collected in light-traps, from lights, syrup traps, pool skimmer baskets, and from the trunks of trees. Adults are active from March through October in NCT.

Taranomis bivittata bivittata (DuPont)

COUNTY RECORDS. ARC, BAY, CLA, COL, HAR, JAC, KNO, MON, TAR, WIC, WIL, YOU.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, RV, SFASU, SL, TK, TTU.

DISCUSSION. Hovore *et al.* (1987) record this subspecies only from New Mexico and Texas. Eighty specimens were examined from NCT. This is a late-occurring subspecies, with collection records from late August to November. It has been swept from many forbs, grasses, and composites including *Xanthocephalum, Ambrosia,* and *Helianthus.* Some specimens examined in this study were reared from *Prosopis glandulosa* (TTU). Although this longhorn is

presumably diurnal, some specimens have been attracted to lights at night. The Collin County specimen was recorded in Tucker (1910). The subspecies was not included in Rogers' (1977) treatment of Texas cerambycid *Helianthus* pests.

Tragidion coquus (Linnaeus)

COUNTY RECORDS. ARC, BAY, CLA, FAN, JAC, KAU, KNO, TAR, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, RV, SFASU, SL, TAMAES, TAMU, TK, UNT.

DISCUSSION. This species is widespread throughout all but the western one-third of the United States according to Linsley (1962*b*). One hundred and eighty-seven specimens were examined. Adults have been taken from many plants, including *Thurberia, Salix, Helianthus, Grindelia,* and *Prionopsis* from September through November. The species is perhaps most commonly associated with *Prionopsis* in NCT where dozens were seen feeding and mating on the dying blossoms during September and October (SL).

Aethecerinus wilsonii (Horn)

COUNTY RECORDS. ARC, ERA, MON, PAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, RV, TAMU, TK.

DISCUSSION. The distribution of *A. wilsonii* is shown by Linsley (1962*b*) as restricted to eastern Texas. Rice *et al.* (1985) recorded two males from Dickens County, just west of the study area. The Parker County specimens were collected on *Salix* sap along the Brazos River (CW). Specimens have also been taken on *Quercus* (TK). Adults are active in NCT from July to November.

Batyle suturalis suturalis (Say)

COUNTY RECORDS. ARC, BAY, CLA, DEN, HAR, KNO, MON, TAR, TAY, WIC, WIL, YOU.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SFASU, SL, TAMU, TK, TTU, UNT.

DISCUSSION. Linsley (1962*b*) shows this subspecies to occur throughout the eastern half of the United States. There appears to be a zone of intergradation in NCT between this and the following subspecies which makes discrimination between them difficult. *Batyle s. suturalis* is usually darker red with legs black distal to the femoral apices. There is sometimes a black sutural vitta on the elytra, although this is absent in most specimens. Sixty-six specimens were examined. This beetle was collected by sweeping *Cirsium, Rudbeckia, Helianthus, Asclepias, Achillea, Thelesperma, Gaillardia, Aphanostephus,* and other wildflowers from April to July.

Batyle suturalis cylindrella Casey

COUNTY RECORDS. ARC, CAL, DEN, FAN, GRA, HUN, WIC.

DEPOSITION OF SPECIMENS. MSU, SL, TAMU, UNT.

DISCUSSION. Linsley (1962*b*) depicts the distribution to be restricted to Texas and New Mexico. Specimens of this subspecies are generally rufous and typically have orange legs, although the apex of the femur is sometimes black. There is never a black sutural vitta on the elytra. Collection frequency indicates

it is less common than the previous subspecies as only twenty specimens were examined. Adults are active in NCT from May through June. They have been collected by sweeping wildflowers (SL).

Batyle ignicollis ignicollis (Say)

COUNTY RECORDS. ARC, CLA, DAL, DEN, HAR, KAU, KNO, PAL, TAR, THR, WIC.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SFASU, SL, TAMU, FK, UNT.

DISCUSSION. The distribution of this subspecies is stated by Linsley (1962*b*) to extend from Montana south to Texas and east to Missouri and Ohio. Rice *et al.* (1985) record it just west of the study area, in Dickens County. This study shows the subspecies to be widely distributed in NCT. Thirty-nine specimens were recorded. *Batyle i. ignicollis* may have two generations a year, based on records from April through June and August through September. Examination of host plants by Rice (1981) revealed two larval sizes which he thought might suggest a two year life cycle. This subspecies has been taken on Compositae and *Opuntia* flowers in NCT.

Plionoma suturalis (LeConte)

COUNTY RECORDS. WIC.

DEPOSITION OF SPECIMENS. MSU.

DISCUSSION. This beetle is common in the southern United States, with the known distribution extending from southern California to Texas (Hovore *et al.* 1987). Eight specimens were examined in this study, all collected in 1956. Subsequent collecting has yielded no additional specimens and its current status in NCT is doubtful.

Crossidius pulchellus LeConte

COUNTY RECORDS. WIC.

DEPOSITION OF SPECIMENS. MSU, TK.

DISCUSSION. The distribution of this species extends throughout the Great Plains of the United States into southern Texas and southern California (Hovore *et al.* 1987). Three specimens were examined in this study. These were taken in September and October.

Elytroleptus divisus (LeConte)

COUNTY RECORDS. DAL.

DEPOSITION OF SPECIMENS. Literature record (deposition unknown)

DISCUSSION. This species occurs throughout southern Texas, although the type locality of this species is given as Dallas, Texas (Linsley 1962*b*). This is the only record of this species in NCT.

Psyrassa unicolor (Randall)

COUNTY RECORDS. PAR, WIC.

DEPOSITION OF SPECIMENS. CW, SL.

DISCUSSION. Linsley (1963) depicts the distribution of this species as scattered throughout the eastern United States and extending into eastern Texas. The four specimens examined in this study were attracted to lights in May and June.

Stenosphenus notatus (Olivier)

COUNTY RECORDS. DAL, DEN.
DEPOSITION OF SPECIMENS. CW, UNT.
DISCUSSION. Hovore *et al.* (1987) defines the distribution of this species to extend from the eastern United States west into southern Texas. Giesbert and Chemsak (1989) extend its known distribution westward to the Rockies. Only three NCT specimens were examined. Specimens for which data were available were collected in May (CW).

Stenosphenus dolosus Horn

COUNTY RECORDS. ERA, WIC.
DEPOSITION OF SPECIMENS. CW, MSU, TAMU, TK.
DISCUSSION. Linsley (1963) and Giesbert and Chemsak (1989) show the distribution limited to central and southern Texas. The five specimens examined extend the known distribution northward. Adults are active from spring to fall, as specimens were collected in May, July, October, and November. Hovore *et al.* (1987) indicate that this beetle is also active in April and September. Specimens were taken in malaise traps (TAMU) and at lights.

Aneflus protensus (LeConte)

COUNTY RECORDS. ARC, BAY, PAL, YOU.
DEPOSITION OF SPECIMENS. MSU, TAMU, TK, TTU.
DISCUSSION. This study extends the previously known distribution of this species considerably north from what Linsley (1963) showed it from southern Texas through Arizona. The four specimens examined were taken from July through October. An additional specimen was collected adjacent to the southwest corner of NCT in Nolan County in August (TAMU).

Aneflomorpha aculeata (LeConte)

COUNTY RECORDS. TAR.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. The distribution of this species was described as central Texas in Linsley (1963). The only examined specimen is atypical of the species in having the spine on the third antennal segment about half as long as the fourth segment (normally longer for this species) and basal elytral punctures subequal to the pronotal punctures (usually smaller than pronotal punctures for this species). It measured 12 mm in length. This specimen was collected in May.

Aneflomorpha tenuis (LeConte)

COUNTY RECORDS. BAY.
DEPOSITION OF SPECIMENS. TTU.
DISCUSSION. This species is distributed in southwest Texas (Linsley 1963). One NCT specimen from Baylor County, however, extends the known distribution northward.

Aneflomorpha seminuda Casey

COUNTY RECORDS. ERA, PAR, WIC.
DEPOSITION OF SPECIMENS. CW, MSU.
DISCUSSION. Linsley (1963) indicated the distribution of this species to be

confined to western Texas. Turnbow and Wappes (1978) recorded it from southern Texas. The four specimens examined in this study extend the known distribution farther north. Adults are active from April to June in NCT.

Enaphalodes hispicornis (Linnaeus)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. TAMU.

DISCUSSION. This species appears to be widely scattered throughout much of the United States (Linsley 1963), although it is rare in NCT. The only specimen recorded was taken in September. Linsley (1963) shows an additional NCT record east of Abilene, possibly in Callahan or Eastland County.

Enaphalodes atomarius (Drury)

COUNTY RECORDS. DEN, ERA, JAC, KAU, MON, PAR, TAR, TAY, WIC, YOU.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, SL, TAMU, TK, UNT.

DISCUSSION. The distribution of this species includes the eastern half of the United States and extends westward to southern Arizona, although it appears to be more common in the eastern half of the United States (Linsley 1963). This species is widely distributed through NCT and thirty-three specimens were examined. These were collected from April through September. Collecting methods included sugar-bait traps set on *Quercus margaretta* and syrup traps (TK), blacklights and other lights, Johnson-Taylor suction trap (TAMU), and from *Xanthocephalum* and *Prunus* limbs (CW).

Enaphalodes taeniatus (LeConte)

COUNTY RECORDS. ARC, ERA, JAC, TAY, WIC.

DEPOSITION OF SPECIMENS. MSU, TAMU, TK.

DISCUSSION. Linsley (1963) shows this species as concentrated in southern and central Texas but includes one record north of Abilene, perhaps in Jones County. Nine specimens were examined in this study, collected from June through September. The Erath County specimens were attracted to a blacklight (TAMU).

Elaphidion mucronatum (Say)

COUNTY RECORDS. MON, PAL, PAR, TAR, WIC, YOU.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, SL, TAMU, TK, UNT.

DISCUSSION. Linsley (1963) shows this species as widespread throughout much of the eastern half of the United States and in Oklahoma and Texas. Thirty-four specimens were collected in NCT. Sugar-bait and syrup traps attracted numerous individuals, while others were attracted to lights. Specimens were collected from April through October, but most commonly in August.

Parelaphidion incertum (Newman)

COUNTY RECORDS. ARC, MON, WIC.

DEPOSITION OF SPECIMENS. MSU, SL, TAMU, TK.

DISCUSSION. Linsley (1963) shows the distribution of *P. incertum* to extend from New England to Iowa and south to Texas. In this study, 16 specimens

were examined. Adults are active in NCT from July to October, and have been taken at lights. *Elaphidionoides incertus* Newman is a synonym.

Parelaphidion aspersum (Haldeman)

COUNTY RECORDS. CLA, DAL, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, DJK, SL, TAMU, TTU.

DISCUSSION. The distribution of this species is similar to that of *P. incertum* (Linsley 1963). Fifteen specimens were examined, attracted to sugar-bait traps, blacklights, and other lights from June through September. *Elaphidionoides aspersus* Haldeman is a synonym.

Anelaphus villosus (Fabricius) and
Anelaphus parallelus (Newman)

COUNTY RECORDS. DEN, PAL, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, TAMU, TK, UNT.

DISCUSSION. These species, formerly included in the genus *Elaphidionoides*, have been assigned to *Anelaphus* by Skiles (1985). He reported that *A. parallelus* is separated from *A. villosus* by its more slender form, elytra over three times as long as broad in *A. parallelus* (no more than three times as long as broad in *A. villosus*) and the third antennal segment subequal to the fourth in *parallelus* (distinctly longer than the fourth in *villosus*). Of eleven specimens examined (MSU), all had the third antennal segment distinctly longer than the fourth (characteristic of *A. villosus*). However, in the ratio of the elytral width to length, these ranged from 3.2 to 3.9 times as long as broad, with an average ratio of 3.5 (characteristic of *A. parallelus*). There either is intergradation in NCT between the two species or the given distinction is not valid, perhaps only representing individual variation.

The distribution of the taxon as shown by Linsley (1963) extends from New England to Texas and the two nominal forms appear to be sympatric. There is one locality for *A. villosus* in southern Arizona (Linsley 1963). The thirty-eight specimens examined were collected from April through June. Specimens were attracted to lights and malaise traps.

Anelaphus spurcus (LeConte)

COUNTY RECORDS. BAY, EAS.

DEPOSITION OF SPECIMENS. MSU, SL, UNT.

DISCUSSION. The distribution of this species, previously defined by Linsley (1963) as central to south Texas, is herein extended into NCT. Six specimens, collected from April through July, were examined. All were attracted to lights.

Anelaphus debilis (LeConte)

COUNTY RECORDS. ERA, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, SL, TAMU, TK, TTU, UNT.

DISCUSSION. The previously recorded distribution of this species, southern and central Texas (Linsley 1963), is extended by this study into northern Texas. Nineteen specimens were recorded from March to June. Most were attracted to lights. Hovore *et al.* (1987) reported that the species is attracted to fermenting molasses bait traps in southern Texas.

Anelaphus moestus moestus (LeConte)

COUNTY RECORDS. ARC, BAY, ERA, FOA, HAR, MON, PAR, TAR, TAY, WIC, WIL, YOU.

DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMAES, TAMU, TK, TTU.

DISCUSSION. This subspecies was second only to *Megacyllene caryae* in abundance in NCT. It is distributed from Arizona to Texas (Hovore *et al.* 1987). Two-hundred and twenty-five specimens were recorded in this study. Adults are active in NCT from late June to October. Sugar-bait traps were attractive to this beetle. One trap set in dense *Tamarix* in July attracted about 60 specimens in two days (SL). Others were collected in syrup traps, light-traps, at blacklights and fluorescent lights, Johnson-Taylor suction traps, pool skimmer baskets, and from *Grindelia*.

Heterachthes ebenus Newman

COUNTY RECORDS. DAL, TAR.

DEPOSITION OF SPECIMENS. SFASU, ZMHB.

DISCUSSION. Linsley (1963) states that the distribution of *H. ebenus* is primarily the eastern United States. Hovore *et al.* (1987) recorded two specimens from San Patricio County, Texas and Dan Heffern (pers. comm.) stated that is has also been taken in Brazos and Nueces counties in Texas. Martins (1971) reported two females from Dallas County (no date). The only other specimen from NCT was collected in Tarrant County in 1971 (SFASU). Adults fly from April through August (Linsley 1963).

Obrium maculatum (Olivier)

COUNTY RECORDS. DAL, ERA, KAU, PAR, TAR.

DEPOSITION OF SPECIMENS. CW, SFASU, SL, TAMU, TTU, UNT.

DISCUSSION. This species is distributed over much of the United States (Linsley 1963). It is more common in the southern part of NCT. Twelve specimens were examined. An additional record from Bosque County, just south of the study region, was seen. Collection records were from May to July, with the exception of the Dallas County specimen, collected in October. Specimens were primarily collected at blacklights and other light sources. One specimen was collected in a Johnson-Taylor suction trap (TAMU).

Molorchus bimaculatus bimaculatus Say

COUNTY RECORDS. DAL, DEN, ERA, TAR.

DEPOSITION OF SPECIMENS. CW, SL, TAMU, UNT.

DISCUSSION. Linsley (1963) gives the distribution of *M. b. bimaculatus* as the eastern United States. The subspecies is most common in the southern and eastern parts of the study area. Sixteen specimens were examined. Charlie Wolfe (pers. comm.) stated that this subspecies is common on *Cornus drummondii* from March through May.

Callimoxys sanguinicollis sanguinicollis (Olivier)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW, SWL.

DISCUSSION. This subspecies is distributed throughout the eastern United States (Linsley 1963). Habits appear similar to those of *Molorchus bimaculatus*

bimaculatus; both are associated with springtime blooming trees and shrubs. Of the 10 specimens examined in this survey, all were collected from April to May on *Cornus drummondii* (CW).

Plinthocoelium suaveolens plicatum (LeConte)

COUNTY RECORDS. ARC, BAY, CLA, ELL, FAN, MON, PAL, PAR, TAR, TAY, WIC, WIL, YOU.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SL, TAMU, TK.

DISCUSSION. This is perhaps the most striking cerambycid in NCT with its metallic emerald-green coloration on the head, thorax, and elytra. Linsley (1964) gives its distribution as extending from central Texas to southeastern Arizona. Sugar-bait traps in NCT have yielded many specimens. Thirty of the 62 specimens examined were collected with this method in Montague County (TK). Two specimens, in the Texas A&M collection, were taken in Bosque County, south of but adjacent to the study region (TAMU). These beetles have been seen congregating at tree sap (DJK). One specimen was collected on *Quercus* (TK). Adults fly from May through September in NCT, activity peaking in June and July.

Phymatodes varius (Fabricius)

COUNTY RECORDS. DAL, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, TAMU, TK.

DISCUSSION. Linsley (1964) shows this species to extend from the eastern United States westward into New Mexico, Arizona, and Utah. Four specimens were recorded in the study area. An additional specimen was examined from Hopkins County, just east of the surveyed region (TAMU). This is an early species with adults active in March and April in NCT. Linsley (1964) states that the period of adult activity for this species is from May to July, which is probably true of the species farther north.

Physocnemum brevilineum (Say)

COUNTY RECORDS. CLA.

DEPOSITION OF SPECIMENS. OSUC (Dan Heffern, pers. comm.).

DISCUSSION. This attractive species occurs throughout the northeastern United States and into Minnesota and Oklahoma (Linsley 1964). The only NCT record, from Clay County, extends its known distribution further south.

Megacyllene caryae (Gahan)

COUNTY RECORDS. ARC, BAY, DAL, DEN, EAS, ERA, HAS, PAL, TAR, WIC, WIL, WIS, YOU.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, RV, SL, TAMAES, TAMU, TK, UNT.

DISCUSSION. This was the most abundantly collected species in NCT. It is distributed across the eastern United States and into southern Texas (Linsley 1964). Interestingly, the adult period of activity in the eastern United States is late spring, while in southern Texas it is fall. In NCT there are periods of activity during spring and fall. Two-hundred and fifty-one specimens were examined. Specimens were most commonly collected from March to April and September through November with other specimens recorded from January, February, and July. This species has been taken on *Prosopis juliflora* firewood

and on *Cercis canadensis, Ulmus, Prunus,* and *Quercus.* One specimen was collected feeding on *Carya pecan* sap (RP). The records on *Cercis, Prunus,* and *Quercus* (TK) may suggest new larval associations with these trees. Specimens have also been taken in light-traps, on woodpiles, on *Grindelia,* and on *Prionopsis.*

Placosternus difficilis (Chevrolat)

COUNTY RECORDS. CLA, DAL, DEN, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. MSU, SL, TAMU, UNT.

DISCUSSION. The United States distribution extends throughout the southwest (Linsley 1964). Fourteen specimens were examined in this study. Four specimens were examined from Bosque County, just south of and adjacent to the survey area (TAMU). The species is most commonly collected from July through October, although one specimen from Denton County was collected in late March (UNT). Specimens are usually taken on wildflowers and other vegetation. Hovore *et al.* (1987) reports this species to be strongly attracted to lights, but this method yielded no specimens in the study area.

Xylotrechus colonus (Fabricius)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW, SFASU.

DISCUSSION. This clytine is shown to be abundant throughout the eastern half of the United States on Linsley's (1964) range map. Several localities in NCT are shown. A total of nine specimens was examined and six of these were taken in Tarrant County at lights in July and August (CW).

Neoclytus horridus (LeConte)

COUNTY RECORDS. DAL.

DEPOSITION OF SPECIMENS. USNM.

DISCUSSION. This species occurs from the eastern United States westward into central Texas (Hoffman 1988). The only record is one from Dallas collected in April, 1908 (Hoffman 1988). Its current status in NCT is doubtful. *Neoclytus fulgoratus* is a synonym.

Neoclytus scutellaris (Olivier)

COUNTY RECORDS. MON, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, SL, TK.

DISCUSSION. This is another common eastern species that, according to Linsley (1964), extends west into Nebraska, Kansas, and Texas. Six specimens were examined from NCT. All the specimens were taken in syrup traps and at fluorescent lights in June and July.

Neoclytus mucronatus mucronatus (Fabricius)

COUNTY RECORDS. ARC, CLA, COL, DAL, DEN, KAU, MON, PAR, TAR, TAY, WIC.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SL, TAMAES, TAMU, TK, TTU, UNT.

DISCUSSION. Linsley (1964) gives the distribution of this longhorn as extending from the eastern United States westward to Oklahoma and northern

Texas. It is a common beetle in NCT, with 57 specimens recorded. Another three specimens were recorded from Bosque County, south of the survey area (TAMU). Adults fly in NCT from April through October. Specimens have been taken on *Celtis* lumber, sap on trees, at the roots of persimmon (Tucker 1910) and from buildings and other structures where they alighted.

Neoclytus acuminatus acuminatus Linsley and
Neoclytus acuminatus hesperus (Fabricius)

COUNTY RECORDS. DAL, DEN, ERA, KAU, TAR, WIC.
DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMU, TK, TTU, UNT.
DISCUSSION. Linsley (1964) separates these two subspecies by coloration. *Neoclytus a. acuminatus* is described as reddish brown with apical segments of antennae, apical three-fourths of elytra, and ventral surface of body piceous, while *N. a. hesperus* is usually uniformly reddish brown without piceous coloration. Specimens collected in the study area show color intergradation between the two defined subspecies and the two nominal races cannot be firmly distinguished. Linsley (1964) considers *N. a. hesperus* to be a western form, occurring in New Mexico and southern Texas, while *N. a. acuminatus* occurs in the eastern United States. A zone of intergradation in NCT may be the basis for the difficulty in distinguishing the two forms. Thirty-three specimens were examined from NCT. Ten additional specimens were taken in Delta County, east of the study area (TK). Adults have been taken from March through October in suction traps, on *Quercus* firewood, *Morus, Helianthus, Lycopersicon, Pyrocantha,* and other vegetation.

Neoclytus caprea (Say)

COUNTY RECORDS. DEN, PAL, TAR, WIC, WIL.
DEPOSITION OF SPECIMENS. CW, MSU, TAMAES, TAMU, TK, TTU, UNT.
DISCUSSION. *Neoclytus caprea* occurs throughout the eastern United States and westward into Arizona (Linsley 1964). In this survey, 23 specimens were examined. Some emerged from *Quercus* firewood (TK), and others were collected under bark or associated with woodpiles. Adults are primarily active in NCT from March through May, although one specimen was collected in November in Wichita County (MSU).

Cyrtophorus verrucosus (Olivier)

COUNTY RECORDS. TAR.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. The distribution of this species is depicted by Linsley (1964) as the eastern United States south to Florida and west to Kansas. It was rather uncommon in NCT. The five specimens examined were collected during March, April, and May in Tarrant County (CW). This species can be collected on early blooming trees and shrubs, including *Prunus* (Charlie Wolfe, pers. comm.).

Euderces reichei reichei LeConte

COUNTY RECORDS. ARC, BAY, HAR, TAR, WIC.
DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMU, TTU.
DISCUSSION. In NCT, this subspecies is the most common of its ant-mimicking genus. Specimens averaged under 5 mm in length, establishing this as the smallest cerambycid in NCT. Linsley (1964) defines the distribution of this

subspecies to extend from the Ohio Valley to central Texas. In this study, 13 specimens were examined. An additional specimen was examined from Bosque County, south of the survey area (TAMU), and six specimens were taken in Delta County (east of the region) on *Cornus* blossoms (TK). Specimens have also been taken from *Salix* (SL) and *Zanthoxylum* (RP). This is an early species, with adults active in April and May in NCT.

Euderces picipes occidentalis Linsley

COUNTY RECORDS. ARC, TAR, WIC.
DEPOSITION OF SPECIMENS. CW, TK.
DISCUSSION. The distribution of this taxon is Oklahoma and Texas (Linsley 1964). Nine specimens were examined from the region. Adults have been reared from *Salix* (TK), and have also been taken on *Opuntia* blossoms. Adults fly in NCT from March through May. *Salix* represents a new larval host for this subspecies.

Euderces pini (Olivier)

COUNTY RECORDS. DAL, DEN, ERA, TAR.
DEPOSITION OF SPECIMENS. CW, TAMU, UNT.
DISCUSSION. The distribution of this species extends throughout the Atlantic coastal and southern states (Linsley 1964). Ten specimens were examined. Adults are active in NCT early in the year from March to May.

Rhopalophora rugicollis (LeConte)

COUNTY RECORDS. BAY.
DEPOSITION OF SPECIMENS. MSU, SL.
DISCUSSION. Ranging from Texas to Arizona (Linsley 1964), one specimen was taken in a sugar-bait trap in Wichita County in April (SL), and four specimens of this species were collected on *Hymenopappus* and *Achillea* in Baylor County in May (RP).

Rhopalophora longipes longipes (Say)

COUNTY RECORDS. DEN, SOM, TAR.
DEPOSITION OF SPECIMENS. CW, TAMU, UNT.
DISCUSSION. This subspecies occurs from the eastern United States to Oklahoma and Kansas (Linsley 1964). Collection of this subspecies in NCT as well as probable collections by Hovore *et al.* (1987) in southern Texas have extended its known distribution throughout Texas. Eight specimens were examined from NCT. Five of these were collected in May on *Cornus drummondii* (CW). An additional specimen from Bosque County (also collected in May) was examined (TAMU). Linsley (1964) indicates adults to be active in June as well.

Lepturinae

The lepturines are a very specialized group of primarily diurnal cerambycids, the vast majority of which can be collected in spring and early summer by sweeping wildflowers. A total of 14 species representing six genera was recorded.

Stenocorus cinnamopterus (Randall)

COUNTY RECORDS. ELL, TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. The distribution of this species extends from the northeastern United States south to Georgia and west into Kansas (Linsley and Chemsak 1972). Four specimens from NCT extend the known distribution to the southwest. These specimens were collected in April and May (CW). Linsley and Chemsak (1972) stated that this beetle is commonly attracted to lights.

Strangalia luteicornis (Fabricius)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. This species' known distribution is throughout the eastern United States and westward into Texas (Linsley and Chemsak 1976). Its seems to be common in the southeast portion of NCT. The nine specimens examined were collected in May and June (CW).

Strangalia virilis LeConte

COUNTY RECORDS. DAL, ERA, PAL, TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. This is the largest *Strangalia* in NCT. The species occurs over Texas and Oklahoma (Linsley and Chemsak 1976), and was the most commonly collected *Strangalia* in the southern part of NCT. A total of 29 specimens was recorded in this study. The majority were collected from *Gaillardia* and blossoms of *Cornus drummondii* (CW), a new association. All specimens were caught in May and June.

Strangalia sexnotata Haldeman

COUNTY RECORDS. DAL, ERA, MON, PAL, SOM, TAR, WIC, WIS.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, SL, TK, TTU.

DISCUSSION. *Strangalia sexnotata* occurs from Arizona across Texas and east to Florida and Virginia (Linsley and Chemsak 1976). The species was the most common of the genus in the northern counties. Forty-one specimens were examined. Specimens were most commonly taken by sweeping wildflowers and many have been taken from *Gaillardia* and *Thelesperma* (SL). Adults were collected in May and June.

Typocerus octonotatus (Haldeman)

COUNTY RECORDS. DAL, DEN, ERA, GRA, HAR, KNO, MON, PAL, TAR, TAY, WIC, WIL, WIS, YOU.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SFASU, SL, TAMAES, TTU, UNT.

DISCUSSION. This is the most common lepturine in NCT. According to Linsley and Chemsak (1976), it always has a yellow ground color on the elytra, which distinguishes it from *T. confluens*. Many specimens were seen which were thought to be *T. confluens* based on this character, since they had solid reddish to piceous elytra. Based on observations of identical habits and sympatry of these with maculated forms, I chose to call them *T. octonotatus*. *Typocerus octonotatus* occurs extensively throughout all but the western

region of the United States (Linsley and Chemsak 1976). In this study, 92 specimens were examined. Specimens were collected on many wildflowers, including *Opuntia, Thelesperma, Cirsium, Helianthus,* and *Monarda.* They have often been collected with *Strangalia sexnotata* (SL). Specimens have been collected in May and June in NCT. *Opuntia, Thelesperma,* and *Monarda* represent new associations.

Typocerus acuticauda standishi Knull

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. Linsley and Chemsak (1976) note that *T. acuticauda standishi* occurs from Kansas to Texas and east to Mississippi. Only eight specimens were examined from NCT, all collected in May and June. Most of the specimens were associated with blossoms of *Cornus drummondii* (CW) which represents a new association.

Typocerus zebra (Olivier)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. This species is shown by Linsley and Chemsak (1976) to occur over the eastern United States and westward into eastern and central Texas. The only specimen seen from NCT was collected in May (CW).

Typocerus sinuatus (Newman)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. *Typocerus sinuatus* occurs from the southeastern United States west to New Mexico and north to Colorado (Linsley and Chemsak 1976). The ten NCT specimens examined were collected in April and May (CW). Other specimens were examined from Bosque County, adjacent to the southern boundary of the survey area (TAMU).

Pseudostrangalia cruentata (Haldeman)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. *Pseudostrangalia cruentata* has been described as uncommon by Linsley and Chemsak (1976) and Rice *et al.* (1985). The species is distributed from the eastern United States to Texas and Iowa (Linsley and Chemsak 1976). The six specimens examined in this study were collected in April in association with tree blossoms, including *Prunus* (CW). *Prunus* represents a new adult association.

Leptura (Stenura) gigas LeConte

COUNTY RECORDS. ARC, CLA, MON, PAR, TAR, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, DJK, TAMAES, TK.

DISCUSSION. This is the largest lepturine in NCT. It shows variation in the degree of melanism on the elytral apices. On the basis of elytral costae and dense punctures on the pronotum, all examined *Leptura* specimens have been

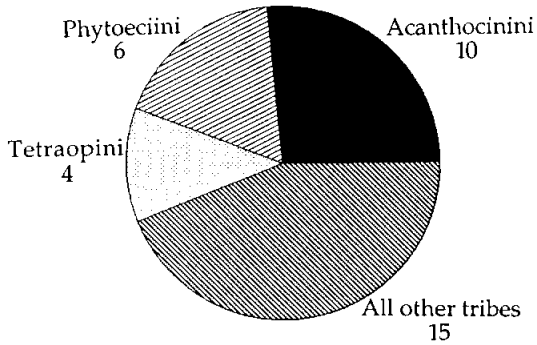

Fig. 7. Size relationships of the larger tribes of Lamiinae based on the number of species occurring in north-central Texas.

assigned to *L. gigas*. However, many of these have the elytral apices broadly margined in black, a characteristic of *L. emarginata*.

Linsley and Chemsak (1976) reported this species throughout Texas. Forty-eight specimens were examined, collected from May through July. Approximately 30 specimens had congregated at a tree (species undetermined) which was producing much sap and had attracted many other insects as well (DJK). Specimens of *L. gigas* have also been collected in syrup and sugar-bait traps (CW, TK). Collection attempts support claims by Hovore *et al.* (1987) that specimens are very alert and difficult to catch unless they are occupied with feeding.

Trigonarthris atrata (LeConte)

County Records. ARC, TAR, WIC.

Deposition of Specimens. CW, DJK, SWL.

Discussion. *Trigonarthris atrata* occurs in the southeastern United States and westward into Texas and Kansas (Linsley and Chemsak 1976). Three specimens were collected or examined. One specimen was beaten from *Ulmus* in northern Wichita County in May (SL), one was taken from the injured tree in May which had also attracted about 30 *Leptura gigas* (DJK), and the third was collected on a blossom of *Cornus drummondii* in April (CW). *Ulmus* and *Cornus drummondii* represent new adult association records.

Lamiinae

The Lamiinae are second only to the Cerambycinae in species representation in NCT. Thirty-five species in 15 tribes were recorded for the subfamily. Fig. 7 shows the size of the largest tribes based on the number of species occurring in NCT. The Acanthocinini, Phytoeciini, and Tetraopini together comprise more than half of the lamiines.

Like some of the Cerambycinae (particularly the Elaphidiini) and the Lepturinae, many species of Lamiinae (particularly Phytoeciini and Acanthocinini) show tremendous variation making identification difficult. Members of this subfamily occupy many niches and can be collected at lights, in sugar-bait traps, and on many types of vegetation.

Plectrodera scalator (Fabricius)

COUNTY RECORDS. DAL, DEN, KAU, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, DJK, MSU, SL, TAMU, TK, TTU, UNT.

DISCUSSION. *Plectodera scalator* occurs throughout the central United States, with some scattered sites in the eastern region (Linsley and Chemsak 1985). It is the largest and perhaps most striking lamiine in NCT. It is also one of several ubiquitous cerambycids encountered in this study. The species is so abundant in NCT that the number of examined specimens was not tabulated. Numerous specimens have been observed emerging from the bases of living *Salix babylonica* (SL), and others have been associated with other *Salix* species as well as *Populus*. Specimens have also been taken from *Platanus, Albizia,* and *Helianthus*. The species is common from late May through August in NCT. *Salix babylonica* may represent a newly recorded species of *Salix,* as Solomon (1980) only refers to *S. nigra* and *S. alba* in his guide to this beetle.

Dorcaschema alternatum (Say)

COUNTY RECORDS. DAL, DEN, ELL, ERA, GRA, JAC, PAR, TAR, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, SL, TAMU, TK, UNT.

DISCUSSION. This longhorn often has longer antennae, relative to the body length, than any other cerambycid observed in this study; some have antennae 2.5 times their body length. Linsley and Chemsak (1985) give the distribution of *D. alternatum* as the eastern United States west to South Dakota and Texas. Fifty-four specimens were examined in this study. Adults were common from April through June, although some specimens were also taken from July through November. Many were beaten from *Maclura pomifera* along the Red River in Wilbarger County in June (SL). Others were taken with light-traps, blacklights, or other light sources.

Adetus brousi (Horn)

COUNTY RECORDS. BAY, ERA, HAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, TAMU.

DISCUSSION. The distribution of *A. brousi* extends from Kansas to New Mexico and Texas (Linsley and Chemsak 1985). Six specimens were examined from NCT. An additional specimen was examined from Sweetwater, in Nolan County, just west of the survey region (TAMU). All specimens were collected in June and July, except the Erath County specimen which was collected in October. Most specimens were attracted to lights.

Dorcasta cinerea (Horn)

COUNTY RECORDS. BAY, CLA, DEN, ERA, KNO, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, SFASU, TAMU, TK.

DISCUSSION. *Dorcasta cinerea* occurs from Kansas south to Texas (Linsley and Chemsak 1985). A total of 20 specimens was examined. Additional specimens were recorded by Rogers (1977) who collected two specimens, one from Knox County and one from Hardeman or Jones County. This species has been collected from April through October and has been taken at lights, on vegetation, in malaise traps, and on *Medicago* (SL). *Medicago* represents a new adult association for this species.

Ataxia hubbardi Fisher

COUNTY RECORDS. ARC, BAY, DEN, ERA, HAR, HAS, TAR, WIC.
DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMU, TTU, UNT.
DISCUSSION. *Ataxia hubbardi* is shown in Linsley and Chemsak (1985) to occur throughout the central United States and west into Arizona. Fifty-two specimens examined from NCT were collected on grasses, flowers, in malaise traps, at blacklights, and other lights from March through July and September through October. Rogers (1977) reported 18 specimens which had emerged from *Helianthus* in Hardeman County.

Ataxia crypta (Say)

COUNTY RECORDS. ARC, CLA, COL, ERA, MON, TAR, THR, WIC.
DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMU.
DISCUSSION. The distribution of *A. crypta* extends from the eastern United States west to Texas and Kansas (Linsley and Chemsak 1985). The seventeen specimens examined in this study were taken on vegetation and at lights from March through May, July, and September through December. The Collin County specimen was noted by Tucker (1910). One specimen feigned death after capture by pulling its legs and antennae very close to the body and remaining motionless while being rolled in palm of hand (SL). Chemsak and Linsley (1970), in their paper on death-feigning, mentioned *Mecas inornata, Physocnemum brevilineum, Moneilema ulkei, Eburia ulkei* and *Eburia juanitae* feigning death. This is the first record for *A. crypta* to exhibit thanatosis.

Eupogonius pauper LeConte

COUNTY RECORDS. BAY.
DEPOSITION OF SPECIMENS. MSU.
DISCUSSION. This species occurs from the eastern United States into Kansas and Texas (Linsley and Chemsak 1985). The single specimen seen was collected at a blacklight in April in Baylor County (RP).

Psenocerus supernotatus (Say)

COUNTY RECORDS. COO.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. This species, which is apparently very common throughout the eastern United States, was not shown to occur in Texas in Linsley and Chemsak (1985). The specimen from NCT collected in Cooke County in April (CW) represents a range extension.

Ecyrus dasycerus dasycerus (Say)

COUNTY RECORDS. BAY, TAR, WIC.
DEPOSITION OF SPECIMENS. CW, MSU, TK.
DISCUSSION. This subspecies occurs throughout the eastern United States and into central Texas (Linsley and Chemsak 1985). Ten specimens were examined, all collected from May through October. One beetle was collected on a dead *Morus* limb (TK), another was attracted to a blacklight (SL).

Oncideres cingulata texana Horn

COUNTY RECORDS. BAY, CLA, COL, ERA, FOA, HAR, KAU, KNO, TAY, WIL.

DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMU, TK, TTU.

DISCUSSION. In summer and fall *O. cingulata* is quite common throughout NCT, particularly in the western half of the region. Linsley and Chemsak (1985) state that this subspecies occurs throughout Texas. In this study, 116 specimens were examined. Specimens were commonly attracted to fluorescent, incandescent, and blacklights from July through November. Specimens have also been taken on *Prosopis glandulosa* and in light-traps. The Collin County specimens were taken from girdled *Ulmus* (Tucker 1910).

Hippopsis lemniscata (Fabricius)

COUNTY RECORDS. BAY, KAU, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, TK, TTU.

DISCUSSION. This species is distributed from the eastern United States into Texas (Linsley and Chemsak 1985). It is not very common in NCT, as only eight specimens were recorded. Records show activity from May through August. Some specimens examined were attracted to lights.

Aegomorphus quadrigibbus (Say)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW, SFASU.

DISCUSSION. Linsley and Chemsak (1985) give the distribution as the eastern United States into Florida and west to Texas. In NCT, this species was uncommon as only two specimens were recorded. One was collected in May at lights (CW), and the other (SFASU) was taken in June.

Leptostylus transversus asperatus (Haldeman)

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. Dillon (1956) considered this beetle to be restricted to the central portion of Texas. There are only two records from NCT, both collected in April (CW). This is probably a nocturnal beetle, as Hovore *et al.* (1987) collected a specimen (probably of this subspecies) at a light in southeast Texas.

Astyleiopus variegatus Haldeman

COUNTY RECORDS. DAL, DEN, EAS, ERA, FAN, MON, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, SL, TAMU, TK, TTU, UNT.

DISCUSSION. Dillon (1956) notes that the distribution extends from the eastern United States into Texas. Hovore and Giesbert (1976) further extended the distribution to Arizona. In the present study, 19 specimens were examined from NCT. Additional records just outside the study area include three specimens from Delta County (TK). This species has been collected on cut logs, is attracted to lights (including blacklights), and is strongly attracted to sugar-bait traps (SL). Adults have been collected in NCT from April through September.

Graphisurus triangulifer (Haldeman)

COUNTY RECORDS. ERA.

DEPOSITION OF SPECIMENS. TAMU, TK.

DISCUSSION. This species occurs from the northeastern United States into Texas (Dillon 1956). The only NCT specimens seen were collected in October (TAMU). Two additional specimens were examined from east of the study region in Delta County in July (TK).

Hyperplatys maculata Haldeman

COUNTY RECORDS. TAR.

DEPOSITION OF SPECIMENS. CW.

DISCUSSION. This species occurs from the eastern United States and into eastern Texas (Dillon 1956). In this study, the only record was a specimen from Tarrant County collected in April (CW).

Hyperplatys aspersa (Say)

COUNTY RECORDS. DEN, WIC.

DEPOSITION OF SPECIMENS. SL, UNT.

DISCUSSION. Records of *H. aspersa* in NCT represent a considerable range extension as the species was previously known from southern Canada into the northern United States and New England (Dillon 1956). Rice and Enns (1981) further extended the known distribution into Missouri. Two specimens were examined, one from Wichita County collected in August (SL) and one from Denton County (month unknown).

Sternidius wiltii (Horn)

COUNTY RECORDS. ERA.

DEPOSITION OF SPECIMENS. TAMU.

DISCUSSION. This species is stated by Lewis (1986) to occur throughout southern Texas. Only one specimen was recorded in NCT. This specimen, from Erath County, was collected in August (TAMU) and thus extended the known distribution northward.

Sternidius mimeticus (Casey)

COUNTY RECORDS. ARC, DEN, WIC.

DEPOSITION OF SPECIMENS. MSU, SWL.

DISCUSSION. *Sternidius mimeticus* occurs through most of Texas (Lewis 1986). Twelve specimens were seen from NCT. Specimens are strongly attracted to lights (SL). Other specimens were taken by beating vegetation (SL). Adults are active in NCT from late May through September.

Sternidius floridanus (Hamilton)

COUNTY RECORDS. BAY.

DEPOSITION OF SPECIMENS. SWL.

DISCUSSION. This species occurs from the southeastern United States into Kansas and Texas (Lewis 1986). The only NCT specimen was collected at a blacklight in Baylor County in July (SL).

Sternidius fascicularis (Harris)

COUNTY RECORDS. DEN, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, SWL.

DISCUSSION. Lewis (1986) gives the distribution of *S. fascicularis* as the eastern margin of the United States westward through Texas and into New Mexico. In this study, 15 specimens were examined from NCT. Some of these specimens were attracted to blacklights (SL).

Lepturges angulatus canus Casey

COUNTY RECORDS. BAY, MON, PAR, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, TK.

DISCUSSION. Hovore *et al.* (1987) state that *L. a. canus* occurs to eastern and southern Texas. Seven specimens were seen from NCT. Three additional specimens were examined from outside the study region, two taken in Delta County in July, and one collected in Cotton County, Oklahoma in June (TK). All specimens from NCT were collected from May through August except the Montague County specimen which was taken in October. Most were attracted to lights and one was taken in a light-trap.

Oberea spp.

Six species in this genus are recorded from NCT. Due to the inadequacy of existing keys, confident discrimination among taxa is not possible. This genus will be treated in detail once specimens can be identified, and consequently, this group is not included in the data analysis (Figs. 3–7). The data below are a compilation of all NCT *Oberea* records.

COUNTY RECORDS. ARC, DEN, MON, TAR, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, DH, SL, UNT.

DISCUSSION. Nearly all the specimens from NCT were collected in the spring–summer transition from May through June with the exception of one specimen which was taken in October (CW). Many have been beaten from *Populus* (CW).

Mecas marginella LeConte

COUNTY RECORDS. ERA, WIC.

DEPOSITION OF SPECIMENS. MSU, SL, TAMU.

DISCUSSION. Chemsak and Linsley (1973) state that the distribution of *M. marginella* extends from the southeastern United States westward into New Mexico. Four specimens were examined, two taken while sweeping wildflowers and one taken from *Thelesperma* (all in May) (SL). The Erath County specimen was taken in April (TAMU). An additional specimen was seen from Bosque County, south of the study region, collected in April (TAMU). This species has been collected with other *Mecas* including *M. cana saturnina, M. pergrata,* and *M. cineracea* (SL).

Mecas confusa Chemsak and Linsley

COUNTY RECORDS. HAR, JON.

DEPOSITION OF SPECIMENS. CW, MSU.

DISCUSSION. This *Mecas* is morphologically very similar to *Mecas cineracea.* Both have immaculate grey coloration. Chemsak and Linsley (1973) separate them by size (*M. confusa* is larger) and structure of the tarsal claws (*M. confusa*

has both the inner and outer teeth of the tarsal claws nearly the same length). No specimens were available for measurement. Chemsak and Linsley (1973) give the size range as 10–14 mm.

This beetle is apparently common throughout Texas and occurs in Oklahoma and Kansas as well (Chemsak and Linsley 1973). None of the specimens examined or collected had all the characteristics of *M. confusa*. Several large (9 mm) *Mecas* were examined quite closely and were determined to be *M. cineracea*, not *M. confusa*. Rogers (1977) reported *Mecas inornata* (which, according to Chemsak and Linsley 1973, and Hovore *et al.* 1987, could apply to *M. confusa*, *M. cineracea*, or *M. cana saturnina*) to be abundant on *Helianthus* in Hardeman and Jones counties. The status of this species in NCT is questionable.

Mecas cineracea Casey

COUNTY RECORDS. DEN, KAU, MON, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, MSU, UNT.

DISCUSSION. This species is very similar to *M. confusa* but is distinguished by its smaller size and short inner tooth on the tarsal claws. As in *M. confusa*, coloration is immaculate grey. Specimens ranged in size from 6 to 9 mm. Those at the larger end of the size range are difficult to distinguish from *M. confusa*.

Hovore *et al.* (1987) give the distribution of *M. cineracea* as the southeastern United States, the Great Plains states, and the southern Rockies. In this study, 14 specimens were examined. Most specimens were collected by sweeping wildflowers and other vegetation from April through July. *Mecas cineracea* has been collected in association with other *Mecas* species including *M. cana saturnina*, *M. marginella*, and *M. pergrata* (SL).

Mecas pergrata (Say)

COUNTY RECORDS. CLA, DAL, DEN, ERA, TAR, WIC, WIL.

DEPOSITION OF SPECIMENS. CW, MSU, SL, TAMU, TK, UNT.

DISCUSSION. The distribution of this species is similar to that of *M. cineracea* from the Great Plains states to the southeastern United States (Chemsak and Linsley 1973, Hovore *et al.* 1987). A total of 17 specimens was examined. Specimens were collected mainly by sweeping wildflowers and other vegetation from April through June. Some specimens were taken in malaise traps (TAMU). This species is often collected with other *Mecas* including *M. cana saturnina*, *M. marginella* and *M. cineracea* (SL).

Mecas linsleyi Knull

COUNTY RECORDS. HAR.

DEPOSITION OF SPECIMENS. CW, SWL.

DISCUSSION. The distribution of this species, as defined by Hovore *et al.* (1987), extends throughout southern Texas. The only NCT specimens seen were five collected in July from Hardeman County (CW) which extend the previously known distribution northward.

Mecas cana saturnina (LeConte)

COUNTY RECORDS. CLA, DEN, HAR, MON, TAR, WIC.

DEPOSITION OF SPECIMENS. CW, MSU, SL, UNT.

DISCUSSION. Most common of the *Mecas* species in NCT, this subspecies occurs from the Great Plains north to South Dakota and east to Alabama

(Chemsak and Linsley 1973, Hovore *et al.* 1987). Twenty specimens were examined in this study. It has been collected from April through July in NCT, often with other species of *Mecas* including *M. marginella, M. cineracea,* and *M. pergrata* while sweeping wildflowers (SL).

Hemierana marginata (Fabricius)

COUNTY RECORDS. ARC, DEN, ERA, TAR, WIC.
DEPOSITION OF SPECIMENS. CW, DJK, TAMU, UNT.
DISCUSSION. The distribution of *H. marginata* extends from eastern North America to southern Texas (Hovore *et al.* 1987). Thirteen specimens were recorded. Specimens have most commonly been taken from weeds and other vegetation. Five specimens were taken in malaise traps in Erath County (TAMU).

Saperda calcarata Say

COUNTY RECORDS. DEN.
DEPOSITION OF SPECIMENS. UNT.
DISCUSSION. This striking species is very common in the northeastern United States and also occurs west to Washington and south to Texas (Felt and Joutel 1904). Only two specimens were recorded from NCT. These Denton County specimens were taken in April 1967 (UNT).

Saperda tridentata (Olivier)

COUNTY RECORDS. BAY, DEN, TAR.
DEPOSITION OF SPECIMENS. CW, MSU, UNT.
DISCUSSION. Another attractive member of the genus, *S. tridentata* is most common in the northeast United States and occurs southwestward into Texas (Felt and Joutel 1904). Eight specimens were recorded from NCT, collected from March through May. Specimens were taken on *Ulmus* (CW, RP) and at lights in Tarrant County (CW).

Tetraopes texanus Horn

COUNTY RECORDS. CLA, DAL, DEN, PAL, TAR.
DEPOSITION OF SPECIMENS. CW, TAMU, TK, UNT.
DISCUSSION. The distribution extends from Oklahoma through Texas (Chemsak 1963). Thirty-nine specimens were recorded from NCT. Specimens were taken from April through June.

Tetraopes discoideus LeConte

COUNTY RECORDS. COO, DAL, PAL.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. *Tetraopes discoideus* occurs from Colorado and Kansas south into Texas and Arizona (Chemsak 1963). Chemsak (1963) reported two specimens each from Cooke and Dallas counties in June and July. The Palo Pinto County specimen was collected in April on *Asclepias subverticillata* (CW).

Tetraopes mandibularis Chemsak

COUNTY RECORDS. FOA, HAR.
DEPOSITION OF SPECIMENS. CW.
DISCUSSION. This species is distributed in Oklahoma and Texas. The type specimens were collected in Childress County, west of the study region (Chem-

sak 1963). Eleven specimens were examined from NCT; all were collected in June on *Asclepias latifolia* (CW).

Tetraopes femoratus LeConte

COUNTY RECORDS. COL, TAY.

DEPOSITION OF SPECIMENS. Literature records (deposition unknown).

DISCUSSION. This is the most variable and most widespread species in the genus (Chemsak 1963). *Tetraopes femoratus* occurs throughout the central United States northeastward into Michigan and Ohio and southwestward into Arizona. The only specimens recorded from NCT are two from Abilene collected in 1944 (Chemsak 1963) and one from Collin County (Tucker 1910).

Questionable Records

The following taxa are shown to occur in NCT by various sources, although no specimens from the region have actually been examined.

Parandra (Archandra) polita Say: Near Dallas County (Linsley 1962*a*:6).

Tylonotus masoni (Knull): Near Dallas County (Linsley 1962*b*:79).

Purpuricenus humeralis (Fabricius): Near Cooke County (Linsley 1962*b*: 108).

Anelaphus pumilus (Newman): Near Dallas County (Linsley 1963:102)

Semanotus ligneus ligneus (Fabricius): Near Dallas County (Linsley 1964: 26).

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APPENDIX

Checklist of north-central Texas Cerambycidae

Prioninae
- Macrotomini
  - *Archodontes melanopus serrulatus*
  - *Stenodontes (Orthomallodon) dasytomus dasytomus*
- Prionini
  - *Derobrachus geminatus*
  - *Prionus (Neopolyarthron) imbricornis*
  - *Prionus (Antennalia) fissicornis*

Cerambycinae
- Smodicini
  - *Smodicium cucujiforme*
- Methiini
  - *Oeme rigida rigida*
  - *Tessaropa tenuipes*
- Graciliini
  - *Hypexilis pallida*
- Eburiini
  - *Eburia quadrigeminata*
  - *Eburia haldemani*
- Hesperophanini
  - *Haplidus laticeps*
  - *Tylonotus bimaculatus*
- Torneutini
  - *Knulliana cincta cincta*
- Trachyderini
  - *Taranomis bivittata bivittata*
  - *Tragidion coquus*
  - *Aethecerinus wilsonii*
  - *Batyle suturalis suturalis*
  - *Batyle suturalis cylindrella*
  - *Batyle ignicollis ignicollis*
  - *Plionoma suturalis*
  - *Crossidius pulchellus*
  - *Elytroleptus divisus*
- Elaphidiini
  - *Psyrassa unicolor*
  - *Stenosphenus notatus*
  - *Stenosphenus dolosus*
  - *Aneflus protensus*
  - *Aneflomorpha aculeata*
  - *Aneflomorpha tenuis*
  - *Aneflomorpha seminuda*
  - *Enaphalodes hispicornis*
  - *Enaphalodes atomarius*
  - *Enaphalodes taeniatus*
  - *Elaphidion mucronatum*
  - *Parelaphidion incertum*
  - *Parelaphidion aspersum*
  - *Anelaphus villosus/parallelus*
  - *Anelaphus spurcus*
  - *Anelaphus debilis*
  - *Anelaphus moestus moestus*
- Ibidionini
  - *Heterachthes ebenus*
- Obriini
  - *Obrium maculatum*
- Molorchini
  - *Molorchus bimaculatus bimaculatus*
- Stenopterini
  - *Callimoxys sanguinicollis sanguinicollis*
- Callichromatini
  - *Plinthocoelium suaveolens plicatum*
- Callidiini
  - *Phymatodes varius*
  - *Physocnemum brevilineum*
- Clytini
  - *Megacyllene caryae*
  - *Placosternus difficilis*

Xylotrechus colonus
Neoclytus horridus
Neoclytus scutellaris
Neoclytus mucronatus mucronatus
Neoclytus acuminatus acuminatus/ hesperus
Neoclytus caprea
Anaglyptini
Cyrtophorus verrucosus
Tillomorphini
Euderces reichei reichei
Euderces picipes occidentalis
Euderces pini
Rhopalophorini
Rhopalophora rugicollis
Rhopalophora longipes longipes
Lepturinae
Lepturini
Stenocorus cinnamopterus
Strangalia luteicornis
Strangalia virilis
Strangalia sexnotata
Typocerus octonotatus
Typocerus acuticauda standishi
Typocerus zebra
Typocerus sinuatus
Pseudostrangalia cruentata
Leptura (Stenura) gigas
Trigonarthris atrata
Lamiinae
Monochamini
Plectrodera scalator
Dorcaschematini
Dorcaschema alternatum
Adetini
Adetus brousi
Apomecynini
Dorcasta cinerea
Pteropliini
Ataxia hubbardi
Ataxia crypta
Apodasynini
Psenocerus supernotatus
Eupogonius pauper
Pogonocherini
Ecyrus dasycerus dasycerus
Onciderini
Oncideres cingulata texana
Agapanthiini
Hippopsis lemniscata
Acanthoderini
Aegomorphus quadrigibbus
Acanthocinini
Leptostylus transversus asperatus
Astyleiopus variegatus
Graphisurus triangulifer
Hyperplatys maculata
Hyperplatys aspersa
Sternidius wiltii
Sternidius mimeticus
Sternidius floridanus
Sternidius fascicularis
Lepturges angulatus canus
Phytoeciini
Oberea spp.
Mecas marginella
Mecas confusa
Mecas cineracea
Mecas pergrata
Mecas linsleyi
Mecas cana saturnina
Hemilophini
Hemierana marginata
Saperdini
Saperda calcarata
Saperda tridentata
Tetraopini
Tetraopes texanus
Tetraopes discoideus
Tetraopes mandibularis
Tetraopes femoratus

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