

THE FIREFLY

**Proceedings of the 2000 (Twenty-Seventh)
Annual Meeting of the
Tennessee Entomological Society**



**October 12-13, 2000
West Tennessee Experiment Station
Jackson, Tennessee**

Volume Fifteen

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RICHARD E. CARON

OUTSTANDING ENTOMOLOGIST AWARD

NOMINATION FORM

The Awards Committee of the Tennessee Entomological Society invites nominations from any TES member for the Richard E. Caron Outstanding Entomologist Award. The award is awarded periodically to TES members who have distinguished themselves by making outstanding contributions to entomology in Tennessee.

Name of Nominee _____

Brief Description of His/Her Qualifications for the Award

Name of Nominator _____

Phone Number of Nominee: Area Code () _____

Please submit your nomination by **August 1, 2001** to:

Dr. Steve Hamilton
Department of Biology
Austin Peay State University
Clarksville, TN 37044
FAX (931) 648-5996
hamiltonsw@apsu.edu

**PROCEEDINGS OF THE TWENTY-SEVENTH
ANNUAL MEETING
OCTOBER 12-13, 2000**

West Tennessee Experiment Station
Jackson, Tennessee 38301

**BRIDGING THE FUTURE AND LEARNING
FROM THE PRESENT AND PAST**

Dr. Carl Jones

Department of Entomology and Plant Pathology
The University of Tennessee, Knoxville TN 37901-1071

ABSTRACT NOT AVAILABLE

**OBSERVATIONS ON EARLY-SEASON THRIPS AND
SELECTED COTTON GROWTH PARAMETERS IN
BXN®COTTON FOR 1999 AND 2000**

Chris D. McAllister and Gary L. Lentz

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West Tennessee Experiment Station

The University of Tennessee, Jackson, TN 38301

This study was conducted during 1999 and 2000 at the West Tennessee Experiment Station, Jackson, Tennessee. The objectives of the study were to evaluate two herbicide programs (Buctril7 and Cotoran7+Prowl7+Dual7) and four insecticides on early-season thrips management and on several growth parameters. The experiment was conducted as a split-plot design, with herbicides as the main-plots and the insecticides as the sub-plots. Thrips damage was significantly lower in both years. Larval thrips were kept below economic threshold levels of one thrips/plant on the first sample date in 1999 and 2000. All treated plants had more leaf area than untreated plant in both years. Insecticide treated plants suffered less thrips feeding injury than untreated plants.

SUCCESSIONAL CHANGE IN WRACK AND ITS IMPLICATIONS FOR LOCAL FOOD DYNAMICS

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Coastal and island consumers may benefit from allochthonous input from the adjacent marine food web. In the Bahia de los Angeles region on the eastern coast of Baja California, subsidized detrital biomass can enter into these terrestrial food webs through shore drift, where animal carcasses and marine macrophytes (wrack masses) wash ashore and are subsequently colonized by a rich and heterogeneous community of intertidal arthropods. In order to determine if the factor of time (as measured in days since algal mass deposition) strongly affects wrack community structure and therefore food web connectance with the adjacent terrestrial community, the wrack community of Playa Pelon, a sandy exposed beach on the Baja peninsula, was sampled on three occasions from 1996 to 1998. Fresh patches of *Sargassum sinicola* (Phaeophyta) were laid out on the high shore in a single transect parallel to the shoreline and sampled using pitfall traps for seven days. Macroarthropod species richness (S), abundance (N), and biomass (B) all peaked within 24-48 hours after wrack deposition and showed strong decreases thereafter. Values for N and B showed catastrophic decreases by the third day after wrack deposition, with the dynamics of B strongly influenced by the presence of *Tylos punctatus* (Isopoda). Thus, coastal consumers who benefit from shore drift biomass (e.g. terrestrial arthropods, rodents, coyotes, lizards, and birds) have a narrow window of time to exploit these ephemeral resources. All three variables significantly decreased over time and the ANOVA model showed highly significant interaction terms for all three quantities, indicating the dynamics of S , N , and B significantly vary from one year to the next. However, only S showed significant among-group variation, while the among-group variation of N and B were non-significant. This means that while the mean number of species (types of food items available) can vary significantly from year to year, the number of food items and the overall amount of food in the intertidal zone is relatively stable. Therefore, periods of low intertidal species richness would be expected to harm rare coastal arthropod consumers and leave coastal vertebrate consumers unaffected.

CHROMOSOMAL ANALYSIS OF THE COTTON BOLL WEEVIL, *ANTHONOMUS GRANDIS*

Lacey McNally, Melvin Beck, and Charles Biggers
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The diploid chromosome number of the cotton boll weevil, *Anthonomus grandis* Boheman, was 44. Both C- and N-banding of mitotic chromosomes demonstrated constitutive heterochromatin in the p arm of the eight largest chromosomes, the p arm of the X chromosome, and the centromeric region of autosomal groups A-D. Neither the y nor the group E autosomes appeared to contain constitutive heterochromatin. Supernumerary chromosomes were not found in the boll weevil. Restriction endonuclease banding with Alu I allowed the identification of the homologues in each tetrad. Restriction endonuclease banding of primary spermatocytes revealed a rod-shaped Xy tetrad in which the X and y were terminally associated. The p arm of the large, submetacentric X was completely C-band positive. While two of the autosomal tetrads were typically ring-shaped in primary spermatocytes, the remaining 19 autosomal tetrads were rod-shaped.

NANTUCKET PINE TIP MOTH, *RHYACTIONIA FRUSTRANAE* (COMSTOCK), INSECTICIDE EVALUATION AND SPRAY TIMING

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The Nantucket pine tip moth (NPTM) is the most serious insect pest of Christmas trees in Tennessee. This pest attacks Virginia, loblolly, shortleaf and other pines with the exception of white pine (1). There are three generations per year in Tennessee (2). Within a few days of emerging, moths mate and begin laying eggs on needles, developing shoot tips, or on buds (1). After hatching, the larvae feed on the new shoots under small tent-like webs. Larvae feed on elongating shoots and will tunnel into buds and eventually bore down the center of the stem. The whorl of needles at the end of the infested stem will initially turn pale orange, darkening over time to brick red. In three to four weeks, larvae construct a webbed cell in the dying shoot where they pupate (2).

Pheromone traps are commercially available to catch the adult male moths. Trap catches coincide with mating and egg laying. When pheromone traps are used to detect moth flights, insecticide sprays should be applied 14 days after peak adult emergence for first-generation moths in early spring. In the warmer months, spray 5-10 days after peak emergence for both the second and third generations (2).

The Virginia pines at this Wilson county commercial Christmas tree farm were transplanted 3.25 years prior to the study in a 6 ft by 6 ft spacing. A NPTM pheromone trap was put out on May 23, 2000 to detect the second generation flight. An initial peak trap catch occurred on June 4 followed by a more sustained peak from June 8-12. On June 13, a water check versus the following commercial insecticide formulations were tested: Mimic 2LV (8 oz/acre), Mimic 2LV (4oz/acre) and Dimilin 25W (4 oz/acre). The sprays were made at a 50 gal/acre rate using a CO2 compression sprayer operating at 40 psi, equipped with two TXVS-18 hollow cone nozzles. Each treatment plot consisted of 6 trees (36 row ft). Each treatment was replicated 4 times in a randomized complete block experimental design. On July 7, whole tree inspections were made on all trees in the test. In each treatment, the number of trees with NPTM damage, the number of damaged shoots, the number of damaged terminal leader shoots, and the presence of larvae and pupae was recorded. The data were subjected to analysis of variance.

For percentage of trees with damage, number of damaged shoots per tree, number of damaged terminal leader shoots per tree and number of larvae per tree, insecticide treatments were significantly more effective than the water check ($P < 0.05$).

INTRODUCTION OF THE SMALL HIVE BEETLE (*AETHINA TUMIDA*) FROM SOUTH AFRICA INTO HONEY BEE COLONIES IN TENNESSEE

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Nashville, TN 37204

In 1998 the Small Hive Beetle (*Aethina tumida* Murray) were discovered destroying honey bee colonies in Florida and identified. This beetle is a member of the coleopteran family Nitidulidae commonly known as sap beetles. This beetle is native to tropical and subtropical regions of South Africa where it is a minor pest of honey bee colonies. Specimens submitted prior to 1998 in South Carolina were only identified to family.

The small hive beetle is brown to black, 5 to 7mm in length and infests honey bee colonies. The adult beetles and also the larvae feed on honey and pollen. Female beetles lay eggs in irregular clusters in crevices within the hive. The larvae damage the colony combs as they forage. Honey leaking from combs ferments and smells like fermenting oranges. The beetle larvae also defecate in the honey and produce a slime. If infestations are severe, the bees may abscond. From egg to adult can take from 38 to 81 days and 5 generations year are possible. Larvae leave the colony to pupate in the ground and may emerge after 3 to 4 weeks as adults. Females are capable of laying eggs 1 week after emergence.

Initial infestations of the small hive beetle were in Florida, Georgia, South Carolina, and North Carolina. Beetles have been spread through movement of colonies and package bees to several other states. This is the first report of the occurrence of the small hive beetle in Tennessee. Three apiaries have been found to contain the small hive beetle in a small area of Polk County near Copper Hill. Inspections to determine the extent of the infestation are ongoing. Treatments for the small hive beetle include coumaphos strips attached to cardboard placed on bottom boards of honey bee colonies; ground application of pesticides around colonies to kill pupating larvae; and lowering humidity and increasing air flow in honey houses to accomplish desiccation of small hive beetle eggs in stored supers.

LaCROSSE ENCEPHALITIS IN EASTERN TENNESSEE 2000

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A blinded cohort study was conducted in 2000 to better understand the emergence of La Crosse (LAC) virus infection in eastern Tennessee, with a special emphasis on the potential mosquito vector(s). Children with suspected central nervous system infection were enrolled at the time of clinical presentation at a large pediatric referral hospital and entomological data were collected prior to LAC confirmation. Sixteen of the 40 children included in the final analysis were confirmed to have LAC infection by a four-fold increase in antibody titers between acute and convalescent sera. Cases occurred between early June and late October with the majority of cases in August through October. Factors significantly associated with LAC infection included: average hours per day spent outdoors (5.9 hours for LAC cases vs. 4.0 for non-cases, $p = 0.048$); residences with one or more treeholes within 100m (RR = 3.96 vs. residences with no treeholes within 100m, $p = 0.028$); and the total burden of *Aedes albopictus*, which was more than three time greater around the residences of LAC cases compared to residences of non-cases ($p = 0.013$). Evidence is accumulating that the newly introduced mosquito species *Ae. albopictus* may be involved in the emergence of LAC in eastern Tennessee. LAC cases occurred in families of diverse economic means.

INSECT PATHOGENS FROM TENNESSEE

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ABSTRACT NOT AVAILABLE

ODOROUS HOUSE ANT CONTROL UPDATES

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ABSTRACT NOT AVAILABLE

EVALUATING HONEY BEE MITE TREATMENTS: COUMAPHOS STRIPS, APILIFE VAR[®] AND A NEW APPLICATION METHOD FOR FORMIC ACID

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Field trials were conducted in apiaries at the University's Plant Science Farm near Knoxville to determine the efficacy of several honey bee miticides including coumaphos strips (CheckMite+[®]), Apilife VAR[®] and formic acid. CheckMite+[®] became commercially available in early 1999 as an alternative to Apistan[®], previously the only available treatment for the parasitic

mite *Varroa destructor*. Although not on the market yet, Apilife VAR[®], which contains botanical oils as the active ingredients, has been registered for use in the USA. The purposes of these studies were to evaluate the efficacy of the newly available CheckMite+[®], determine Apilife VAR[®]'s efficacy under fall climactic conditions and to test a novel method for applying formic acid developed in Canada by chemist Scott Daniels.

In late September 1999, CheckMite+[®] and Apilife VAR[®] were applied to 10 honey bee colonies each. Treatments were maintained for 42 days with Apilife being replaced at 21 days. *Varroa* abundance was monitored continuously with bottom board sticky traps. Counts of bees, brood (immatures) and food stores (nectar, honey and pollen) were made before and after the treatment period. After treatments were removed, Apistan[®] was applied to colonies to kill surviving mites and, thus determine the proportion of mites surviving the treatment period.

In mid-March 2000, sealed latex bladders containing formic acid gel were evaluated. A bladder was placed across the top bars of frames in the top hive body of each of 10 colonies. Apistan[®] was included as a treatment. Bladder weights and formic acid vapor concentrations were recorded nine times during the 37-day treatment period. *Varroa* abundance was monitored continuously in all colonies, before and during treatment, with bottom board sticky traps. Bladder-treated colonies and untreated (control) colonies were weighed before and after the treatment period to determine whether formic acid vapors affected honey production. Honey samples were taken from bladder-treated colonies and subjected to ion chromatography at the University of Regina to detect possible formic acid residues.

Mean control of *Varroa* by CheckMite+[®] (95%) was significantly greater than that provided by Apilife (79%). There was significantly less brood after the treatment period for colonies in all treatments, but only Apilife-treated colonies had significantly fewer bees. (Reduction in amounts of brood normally occurs in the fall.) Food stores remained unchanged in all treatment groups.

Before treatment in spring 2000, numbers of *Varroa* collected on sticky boards were statistically similar for all treatment groups. During treatment, significantly more mites were collected from Apistan[®]-treated colonies, six times the amount collected from bladder-treated colonies. Approximately 150 grams of formic acid evaporated from bladders during the treatment period, however, only on one sampling date, 11 days after bladder placement, were vapors found to be in excess of 10 ppm, considered the minimum concentration to kill *Varroa*. There was no treatment effect on honey production. Although formic acid residues were detected in honey from bladder-treated colonies, levels were below tolerances set by the US Food and Drug Administration.

Although Apilife did not provide *Varroa* control similar to that of CheckMite+[®], it offers a non-chemical alternative to the pyrethroid- and organophosphate-based honey bee miticides currently available. And when used in combination with cultural mite control tactics such as mite-resistant stock or open bottom boards, it may maintain *Varroa* below economic thresholds.

Temperatures from mid-March to mid-April 2000 were cool. Mean daily temperatures recorded adjacent to bladders within hives ranged from 18 to 21° C. This apparently affected the evaporation of formic acid and release of vapors from the bladders, thus reducing efficacy against *Varroa*. A subsequent study showed that sufficient vapors are released from bladders at higher temperatures indicating that this device may provide a warm-weather treatment method for formic acid.

EVIDENCE OF RECEPTORS FOR INTERFERON--GAMMA IN *MANDUCA SEXTA* (TOBACCO HORNWORM) LARVAE

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Basic growth factor molecules drive many mitogenic activities, even in organisms low on the evolutionary scale. Therefore, basic growth factors stand out when searching for a model immunogen with pleiotropic or even universal activity across the evolutionary ladder. Among basic growth factors and mitogens, the interferon-gamma (IFN- γ) class displays a universal activity.

We have demonstrated the presence of two populations of receptors that specifically bind recombinant human IFN- γ in the hemolymph and protocerebral tissue of *Manduca sexta* larvae. We have also shown a small high-affinity binding of rat prolactin to particulates from these tissues. The binding of hIFN- γ to its receptors in *M. sexta* larvae was inhibited by polybasic amino acids, with the rank order of potency Lys > Arg > Orn. The receptors for hIFN- γ in *M. sexta* hemolymph were found to consist of molecular species ranging from 200-600 kDa. This binding of IFN- γ was sensitive to heparin and to Ca⁺⁺, but not to Na⁺. Treatment of the receptors with heparinase III, but not with heparinase I, inactivated a substantial portion of IFN- γ binding. The activity of *M. sexta* cAMP-dependent protein kinases was stimulated in a dose-dependent fashion by hIFN- γ .

Another discovery was that human IFN- γ may reduce the lethality of nuclear polyhedrosis virus (NPV) for *Manduca sexta* larvae.

These findings demonstrate specific binding of hIFN- γ in an insect system, and indicate a potential for interspecies cross-reactivity in invertebrate immunity. Coordination between defensins (or other immune molecules) and IFN- γ -like molecules in the insect could provide a link between innate and adaptive immunity. Elucidation of the mechanisms involved could be

important in controlling insect populations and in human medicine.

UPDATE ON INSECT PROBLEMS IN TENNESSEE FIELD CROPS

Charles R. Patrick

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The insect situation in Tennessee during the 2000 season had many problems that dealt with insects in corn, cotton, grain sorghum and stored grain. The southwestern corn borer did not cause as much damage to corn as in the previous season but care in planting susceptible varieties should be made by producers if problems were found in their crop previously. The Bt corn hybrids did very well in controlling the pests they were designed to control and other pest species will be added in time. What will be the outcome of insects during 2001 is anyone's guess and scouting of all crops will always be valuable in alerting our producers to impending insect problems in their crops.

UPDATE ON THE BOLL WEEVIL ERADICATION IN WEST TENNESSEE

Ron Seward

Southeastern Boll Weevil Foundation

ABSTRACT NOT AVAILABLE

**NATURAL ENEMIES OF JAPANESE BEETLES
IN EASTERN TENNESSEE**

Jerome F. Grant and Daniel Otto
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The University of Tennessee, Knoxville TN 37901-1071

ABSTRACT NOT AVAILABLE

could be winners at each of the three regional fairs. Hamilton noted that the critical need is for entomologists to serve as judges at these regional fairs.

Hamilton noted that Past-President Youmans did not get his presidential plaque yet!

The Prediction/Evaluation Committee stressed that the Firefly is still a good place to publish new finds and solicited contributions.

Snodderly presented the Publications/Editorial report on the publication of the Firefly. After discussion, Snodderly moved (Hamilton seconded) that Ms. Caldwell be paid \$200 again this year to help publish the Firefly. The motion passed.

The selection of the restaurant for the group dinner on October 12th following the first half day session was discussed. Proposals were the Old Country Store, Logan's, O'Charley's and Barnhill's. The board selected Logan's for the dinner site.

The Nominating Committee had no report.

Old Business was considered with the discussion centering on changing the names of some of the awards. One proposal was to name the 4-H award after Professor Harry Williams and the Regional Science Fair award after Mr. Howard Bruer. No decision was made by the board to change current awards.

Snodderly moved (Powell seconded) that the meeting be adjourned. The motion passed.

Gary L. Lentz
Secretary
Tennessee Entomological Society

**TENNESSEE ENTOMOLOGICAL SOCIETY
MINUTES OF THE PRE MEETING
BOARD OF DIRECTORS AND COMMITTEE CHAIRMEN
OCTOBER 12, 2000**

The meeting of the Board of Directors and Committee Chairmen held just prior to the Annual Meeting of the Tennessee Entomological Society was called to order at 11:15 a.m. at the West Tennessee Experiment Station by President-elect Haun. The first order of business was to discuss the program. There was a noted lack of student papers. The Firefly does include the Operating Procedures. President Mannion will not be here due to a position change. Haun went over the committees.

Awards Chairman Hamilton reported that he did pursue the idea of a science fair award. The difficulty is having TES members attend the science fairs and finding the projects which utilize insects. There may be as many as 7-9 regional fairs. There is a Junior Academy of Science and one fair in Knoxville. In any fair, it may be difficult to know ahead of time whether there is an insect project. We do have some members of TES active in some of the regional fairs. Haun suggested that it be brought up in the general meeting for discussion.

Constitution and Operating Procedures chair Burgess will not be at the meeting, but he did not see there would be any constitution changes. We do need to make some changes in the operating procedures, especially defining the time table for the various committee chairs and their activities. Local Arrangements chair Lentz indicated that the only problem may be the lack of sufficient rooms to meet the need for the gratis hospitality suite for the mixer. We needed 20 rooms, but there would be a maximum charge of \$50 for the room. The group discussed the contributions to support the hospitality room and the refreshments for the mixer. The previous monies were put into the general fund. Two years ago there was \$325 less \$138 that Grant spent and then \$100 that Hale spent, so there should be quite a bit left. Greer indicated that the meeting time and the instability in industry now made it difficult to raise funds for this meeting compared to TAPA.

Hale indicated that the Power Point system was ready for the meeting. Individuals need to load their presentations on the laptop. All should be loaded for the first session.

Nomination Committee chair Eisler will not be attending. The prospective nominees are Steve Hamilton for President-elect, Steve Powell for Treasurer and two Members-at-Large Greer and Keener. The Members-at-Large serve only one year.

Program Committee presented the program which Doris Caldwell did in Word Perfect. The program did not attract the Memphis, Arkansas State and Missouri individuals that we had hoped. When the date was set, there needs to be a general e-mail going to all interested persons concerning the TES meeting. Hamilton volunteered Austin Peay facilities for the next meeting,

but the new facilities may not be complete. In that case, TES may have to go to the Ed Jones

auditorium at Ellington in Nashville.

Grant reported the Membership Committee activities. Several packets were sent to new people in the state. Several people haven't attended and did not pay their dues. Individuals were to be asked to send their dues to the Treasurer if they are not able to attend the meeting. They could

then receive their copy of The Firefly. Grant mentioned that the web site will be maintained on the departmental web site.

Grant mentioned also Hamilton's work with the student award. The Awards Committee did make some guidelines for the Richard Caron Award. Haun suggested that the call for papers needs to go out earlier. In TAPA, there is no call for papers, just the poster session. This would not be as attractive in TES. Greer suggested using some invited papers to complete the program. EPA arbitrarily changed the tolerance fee from \$64,000 to \$285,000. On the other hand, EPA wants as much gratis from the universities and industry as is possible. Speakers who can present the problems that companies and universities deal with on a regular basis may be 'key' to the TES program.

Publicity Committee chair Murphree reported on the banner. There was newspaper release and other releases. The podium banner cost about \$70. Murphree will try to get a table banner made which will cost about \$175. The podium banner will be used for annual meetings, the table banner can go to meetings around the state.

Haun asked if the summer meeting can be held on the internet. Most think that that would not work. Would a conference call work? The publication of The Firefly was discussed. It would be good to publish sooner, but the drawback is getting the abstracts and summaries submitted.

The group dinner will be held at Logan's restaurant at 6:00 p.m. There was no further business and the meeting was adjourned by Haun.

Gary L. Lentz
Secretary, TES

**TENNESSEE ENTOMOLOGICAL SOCIETY
MINUTES OF THE ANNUAL BUSINESS MEETING
OCTOBER 13, 2000**

The Annual Business Meeting of the Tennessee Entomological Society was convened at 8:05 a.m. at the West Tennessee Experiment Station in Jackson, Tennessee by President-elect Gray Haun. President Catharine Mannion was unable to attend due to a move to Florida. President-elect Haun called for the reading of the minutes of the previous meeting. Secretary Lentz indicated the minutes were published in pp.19-26 of The Firefly. Gerhardt moved (Youmans seconded) that the minutes be approved as published. The motion passed.

Treasurer Powell presented the Treasurer's report. Hamilton moved (Murphree seconded) that the report be accepted. It is published in the most recent issue of The Firefly. Local Arrangements Committee chair Lentz reported that the local host hotel, AmeriHost Inn, had the necessary room quota (18 room nights) met to provide the complimentary mixer suite. Publicity chair Murphree reported that news releases went to the Jackson Sun and the local television station, WBBJ Channel 7. Members were asked to make comments to Murphree concerning the Banner which has been prepared.

Program Committee chair Haun indicated that there would be three papers this morning. There was a complete afternoon yesterday. The Power Point presentations have worked very well. The Membership Committee chair Grant indicated that TES had 45 paid members in 1999. There are 100 ESA members in Tennessee. The Membership Committee will work to get more past dues paid and recruit more members. The question was raised as to whether there should be an e-mail call for papers. Considerable discussion followed.

Awards Committee chair Hamilton presented Past-president Youmans with his Presidential Plaque. Hamilton recognized committee members and pointed out that he had John Skinner added because of his contact with the 4-H program. Hamilton also mentioned that there is consideration for making high school awards at science fairs across the state. Hamilton indicated there were no nominations for the Richard Caron Award. The winner of the Howard Bruer Award is Wade Black, a 4-H beekeeper, from Bolivar. Gary Rogers, 4-H extension agent in Hardeman County will make the presentation locally. Hamilton also indicated there would be an award given to President Mannion who was unable to attend the meeting. Judges for the student paper competition were Greer, Murphree, Grant and Skinner. The winner was Lacey McNally.

Publications/Editorial chair Snodderly indicated that Doris Caldwell reported that this was the easiest year for assembling The Firefly. When reports and other items are submitted in text files, this expedites publication. Prediction/Evaluation Committee chair Haun reported that the Tennessee Department of Agriculture previously published a 'new distribution report' which it no longer does and that the Tennessee Entomological Society and The Firefly presently serve this purpose.

Auditing Committee chair Hale indicated that the Treasurer's books were examined and all was found to be in order. Constitution/Operating Procedures chair Burgess indicated (in absentia) that the committee does not see any immediate changes in the Constitution, but, there, are, some revisions which need to be made in the Operating Procedures.

The Nominating Committee of Eisler, Vail and Burgess presented the following names for TES officers. For President-elect: Steve Hamilton. For Treasurer: Steve Powell. Members-at-Large: Lee Greer and Jim Keener (same as last year). The motion was moved and seconded and the motion passed and the individuals were elected. Murphree moved (Hale seconded) that the committee reports be accepted as presented. The motion passed.

President-elect Haun called for any further **OLD BUSINESS**. None was presented and the meeting moved to **NEW BUSINESS**. Treasurer Powell gave a report on the Certificate of Deposit which the TES currently owns. The Membership Committee reported it will actively recruit new members.

Awards Committee chair Hamilton proposed a new award for the TES to consider. The 4-H winner would receive the Harry Williams Award. The Howard Bruer Award would go to a high school winner in the Junior Tennessee Academy of Science. Regional winners in science fairs could submit papers/posters for the award at the annual meeting of the Tennessee Entomological Society. Lentz pointed out that it would be difficult for TES members to judge the numerous fairs around the state. Snodderly mentioned some competition is done through notebooks which students assemble and could be the basis of judging. Members were encouraged to attend local science fairs and provide e-mail input to Gray Haun. Grant suggested TES increase the amount of the award which was \$50 in 1994 and currently remains the same. Snodderly moved that the business meeting be adjourned. The motion was seconded and passed.

**TENNESSEE ENTOMOLOGICAL SOCIETY
MINUTES OF THE POST MEETING
BOARD OF DIRECTORS MEETING
OCTOBER 13, 2000**

The post meeting Board of Directors meeting was held at the West Tennessee Experiment Station immediately following the close of the annual Tennessee Entomological Society meeting. President Gray Haun chaired the meeting. In reviewing the volunteer list for the committees, it was noted that there were no volunteers for the Prediction/Evaluation committee. Names suggested for the chair of this committee were Powell, Hale or the incoming extension entomologist.

Discussion of the topic of next year's meeting was led by President-elect Hamilton, the new program chair. One topic suggested was an Environmental speaker. Haun suggested a lady from EPA who has a very broad background working with plum pox virus, fumigants, etc. Hale suggested a speaker from EPA to come and discuss the topic "Is the American public more healthy today due to regulation of pesticides?" Hamilton proposed someone to speak on environmental monitoring. Hale suggested that fire ant money from the USDA is to increase soon and the topic might draw a unique audience. The biological control of the fire ant may take a different course in the near future. Individuals introducing agents will be responsible for them in the future. Alien species was a topic suggested by Haun. Fire ant is on the hit list. Homer Collins is retiring soon, but Ann Marie may be an appropriate speaker. Haun mentioned this year's backup speaker, Ron Seward, speaking on the topic of boll weevil eradication. The Board and committee chairs were asked to forward topics for consideration to Steve Hamilton for his consideration for the keynote speaker.

Lentz indicated that the Society may have to cover part of the cost of the room for the hospitality suite.

It was suggested that the student award might be raised to \$75 and give the winner a certificate as well. Karen Vail was suggested as a possible chair for the Awards Committee. There was some discussion of maintaining a web site for TES. The meeting was adjourned shortly before noon.

Gary L. Lentz
Secretary, TES

TENNESSEE ENTOMOLOGICAL SOCIETY

Treasurer's Report October 1999 - October 2000

Books and Records audited by Auditing Committee (Frank Hale, Chair)

Balance on hand 10-21-99

Checking.....	\$1,904.49
Certificate of Deposit	\$2,800.00
Cash.....	\$ 220.00
TOTAL.....	\$4,924.49

Number of pins on hand 10-12-00 - 7 -

DISBURSEMENTS

Andrew Beld - Student Award	(\$ 50.00)
Dr. Jerome Grant - Firefly Publication.....	(\$368.27)
Dr. Frank Hale - Refreshments.....	(\$117.35)
Doris Caldwell - Honorarium.....	(\$200.00)
Sodexo Marriott Services	(\$145.20)
Plus Club Dues	(\$ 53.00)
TOTAL EXPENSES	(\$ 934.02)

INCOME

27 Registrations.....	\$540.00
28 Regular Dues	\$140.00
13 Student Dues.....	\$ 13.00
Cash Donation	\$ 5.00
1 Pin.....	\$ 10.00
Checking Account Interest.	\$ 12.91
TOTAL INCOME	\$720.91

BALANCE ON HAND 10-11-00

Checking Account	\$1,691.38
Certificate of Deposit	\$2,800.00
Cash.....	\$220.00
TOTAL ASSETS.....	\$4,711.38

NOTE: CD#5328641582, issued 3/12/99, will mature on 3/11/01. The current value is \$2,983.04. The interest rate is 4.23%. Interest payments are made quarterly.

Respectfully Submitted
Steve Powell, Treasurer

**ATTENDANCE ROSTER OF THE 2000 ANNUAL MEETING
OF THE TENNESSEE ENTOMOLOGICAL SOCIETY**

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Tennessee Entomological Society

Prediction and Evaluation

Committee Report

October 13, 2000

Ron Seward - Chair
Committee Members:
Russ Patrick

Predictions and Evaluations on Regulated Insects

Steve Powell, Gray Haun, Bruce Kauffman

Tennessee Department of Agriculture Regulatory Services
Nashville, TN 37204

Africanized Honey Bee – *Apis mellifera scutellata*

A total of 13 traps were placed in Shelby, Davidson, Hamilton, and Knox counties. All traps were negative for Africanized bees.

Asian Longhorned Beetle – *Anoplophora glabripennis*

A total of 43 sites in 22 counties were surveyed from May to September of 2000. The types of sites were: (1) Locations where USDA had made a previous exotic insect or bark interception (2) Other locations where solid wood packing material is received from abroad (3) Pallet recyclers (4) Landfill areas. Whenever possible, solid wood packing material from countries native to the Asian Longhorned Beetle was identified and inspected. Also, a survey of host trees in the vicinity was conducted, looking for this insect or damage. No Asian Longhorned Beetles or evidence of damage was found during the course of this survey.

Japanese Cedar Longhorned Beetle – *Callidiellum rufipenne*

A total of 100 traps were placed in 8 counties. All traps were negative.

Exotic Bark Beetle Survey - A total of 12 traps were placed in Shelby, Dickson, and Davidson counties. All traps were negative.

Pink Hibiscus Mealybug – *Maconellicoccus hirsutus*

All of the surveys were negative.

Chrysanthemum White Rust

All of the surveys were negative.

Japanese Beetle – *Popillia japonica*

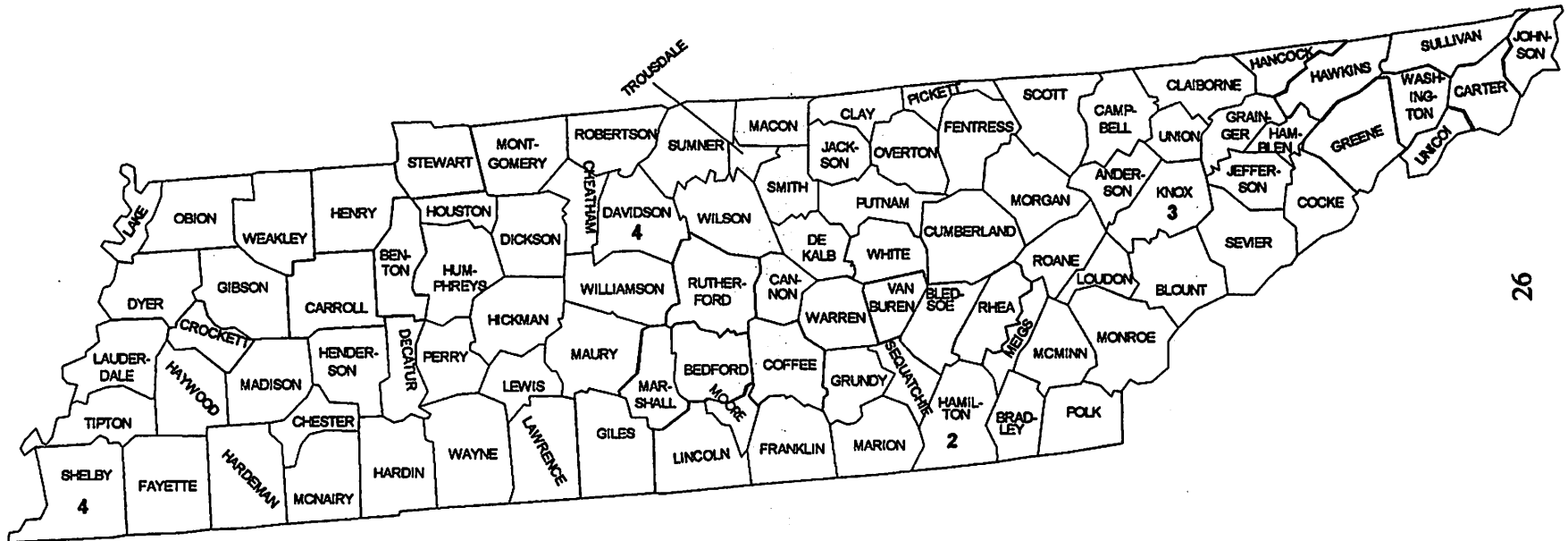
Sufficient numbers were found in Gibson and Lewis counties to be added to the generally infested area.

AFRICANIZED HONEY BEE SURVEY

FY 2000

TRAPS OPERATED

TENNESSEE



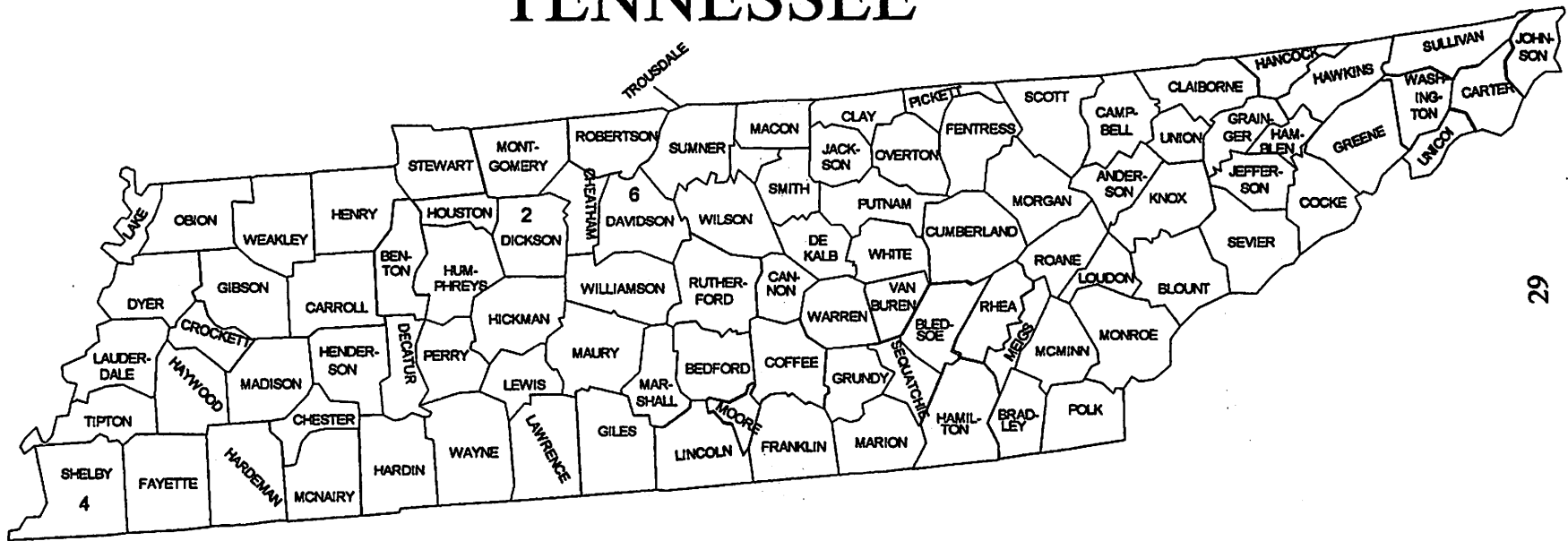
USDA-APHIS PPQ
placed and monitored AHB Traps

EXOTIC BARK BEETLE SURVEY

FY 2000

TRAPS PLACED

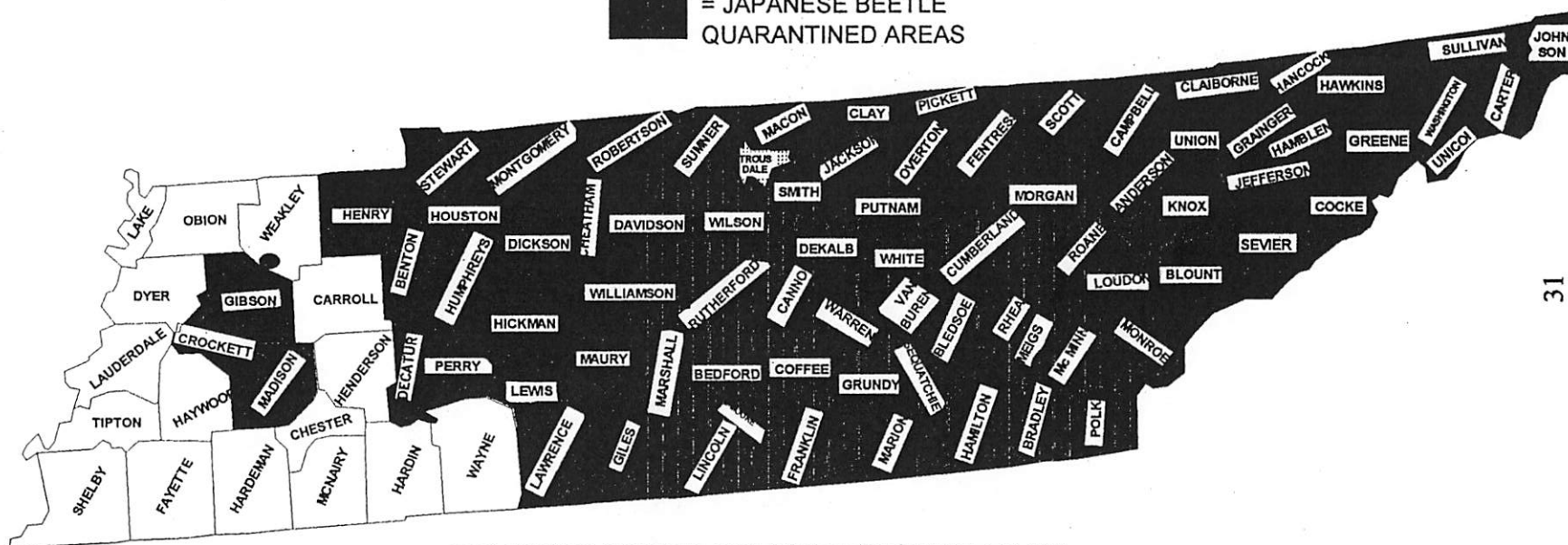
TENNESSEE



USDA-APHIS PPQ

TENNESSEE MAP INDICATING THE DISTRIBUTION OF JAPANESE BEETLE INFESTED AREA 2000

■ = JAPANESE BEETLE
QUARANTINED AREAS



31

COUNTIES LISTED BELOW ARE GENERALLY INFESTED WITH JAPANESE BEETLE

ANDERSON	CARTER	DECATUR	GRUNDY	JACKSON	MADISON	OVERTON	SCOTT	UNICOI
BEDFORD	CHEATHAM	DEKALB	HAMBLÉN	JEFFERSON	MARION	PERRY	SEQUATCHIE	UNION
BENTON	CLAIBORNE	DICKSON	HAMILTON	JOHNSON	MARSHALL	PICKETT	SEVIER	VAN BUREN
BLED SOE	CLAY	FENTRESS	HANCOCK	KNOX	MAURY	POLK	SMITH	WARREN
BLOUNT	COCKE	FRANKLIN	HAWKINS	LAWRENCE	MEIGS	PUTNAM	STEWART	WASHINGTON
BRADLEY	COFFEE	GIBSON	HENRY	LINCOLN	MONROE	RHEA	SULLIVAN	WHITE
CAMPBELL	CROCKETT	GILES	HICKMAN	LOUDON	MONTGOMERY	ROANE	SUMNER	WILLIAMSON
CANNON	CUMBERLAND	GRAINGER	HOUSTON	McMINN	MOORE	ROBERTSON	TROUSDALE	WILSON
DAVIDSON	DAVIDSON	GREENE	HUMPHREYS	MACON	MORGAN	RUTHERFORD		

A Portion of - Weakley County - the city limits of Greenfield

Tennessee Cooperative Gypsy Moth Program

2000

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Executive Summary

Traps

A total of 16,038 traps were placed in Tennessee for gypsy moth in 2000, including 2,347 eradication, 12,500 detection and 1,191 delimiting traps.

Moths

A total of 127 moths were caught in 2000 in 22 counties (see attached map). This total reflected a decrease in the number of moths caught in comparison to 1999 (159 moths).

Table 1. Gypsy Moth Trap Catches - 1992 through 2000

	Total Catch Areas	New Catch Areas	# Moths	#Moths/Area	#Traps	Program Costs
1992	36	23	227	6.3	8,376	\$287,520
1993	53	41	4,654	87.8	9,662	\$235,240
1994	63	44	1,304	20.7	13,101	\$662,000
1995	75	56	295	3.9	19,366	\$815,486
1996	49	45	2,549	52.0	18,279	\$324,558
1997	53	40	221	4.0	18,369	\$431,901
1998	60	44	397	6.6	19,406	\$286,904
1999	41	33	159	3.9	19,755	\$530,845
2000	51	40	127	2.5	16,038	\$372,000

Eradication Sites

Of the three areas that were infested in the State in April, 2000, two locations had ground treatments. A mist blower sprayer treated one acre with diflubenzuron twice and one acre twice with Btk in Cumberland County (Elmore Road). Following treatment, one moth was caught in a previous location (37 moths in 1999). A mist blower sprayed one location twice in Sevier County (near Pigeon Forge) with diflubenzuron on one acre. Three moths were caught following treatment (28 in 1999). In Scott County, one year after an aerial treatment of two applications of Btk on 1,941 acres in five locations, fewer moths (5) were caught (11 in 1999). Increasing moth catches occurred in Monroe County (42 near Tellico Plains) and Campbell County (10 moths north of LaFollette), but no additional life stages have been found as of November 1, 2000. A mist blower will be used to treat one acre twice with diflubenzuron in May, 2001 in Monroe County around a high moth catch site. Only four moths were caught in Anderson County in Oak Ridge this year representing a decrease in comparison to 1999 (17 moths). These locations will be intensively trapped in May, 2001.

Egg Mass Surveys

Egg mass surveys were carried out at six locations in four counties during the winter of 1999-2000 (Anderson, Cumberland (2), Monroe, and Sevier (2)). One egg mass was found in Sevier County (near Pigeon Forge) and treated with soybean oil.

Eradication Sites

A total of 2,347 traps were placed in three eradication sites in 2000, totaling 210 square miles. These traps caught 9 moths (48 moths in 1999). Two ground spray locations were conducted in May, 2000. Burlap banding was placed in two areas. Mass trapping occurred on three sites.

Following aerial treatments in 1999, mass trapping was conducted around the two largest moth concentrations in 1999 along Wolf Creek Road and the New River near Huntsville. A total of five moths in five traps were caught in the Huntsville spray block in the mass trapping area. Similar trap coverage to 2001 will be done on 195 square miles using 1,781 traps (1 - 36 traps/square mile plus mass trapping).

A diflubenzuron ground treatment was applied twice using a mist blower on one acre and twice on one acre with Btk in May, 2000 in Cumberland County (Elmore Road). Burlap banding of 10 trees detected no larvae in the treated areas. No moths were caught in the two treated locations, but one moth was found less than one mile east. Grid trapping will be similar to 2000 (352 traps) over 12 square miles (16-36 traps/square mile plus mass trapping). Trapping will also include a portion of Fentress County.

A mist blower sprayed one acre with diflubenzuron twice in Sevier County (near Pigeon Forge) in May, 2000. One egg mass was found in November, 1999 and treated with soybean oil in this

time-share housing area. Burlap banding of ten trees caught no larvae. Three moths in three traps were caught following treatment (28 moths in 1999). Grid trapping will be conducted (36 traps/square mile) over one square mile next in addition to mass trapping.

Trapping

TDA Regulatory Services (TDARS) and USDA APHIS PPQ provided assistance with two ground treatment locations. TDA Forestry (TDAF) hired 23 individuals to trap two existing infestations (Cumberland and Sevier Counties) and urban areas (1 trap/square mile), campgrounds, mobile home sites and sawmills (selective trapping rates) statewide. In addition, they delimited 37 sites covering 51 square miles. TDAF hired an additional seven persons under an agreement with the USDA Forest Service (USDAFS) to delimit existing infestations in Scott County. An additional ten persons were to be hired by TDAF with state money to do detection trapping. TDAF under a cooperative agreement with USDA APHIS PPQ trapped one half of each of 65 counties in the state at the rate of one trap per four square miles. USDA APHIS PPQ personnel trapped half of Davidson and Shelby Counties exclusively in addition to some campgrounds in Davidson County (344 traps). Other cooperating trapping agencies include USDA Forest Service, USDI National Park Service, Tennessee Valley Authority, US Corps of Engineers, US Army, USDI Fish and Wildlife Service, US Air Force and US Department of Energy. They placed 462 traps of the state detection trap total.

Detection Site Trapping

A total of 12,500 traps were placed in 2000 to discover introductions of the gypsy moth into the State. These traps caught 65 moths, a total greater than 1999 (40 moths). The state had more introduction sites (39) this year than last (33). Over two-thirds (65) of the 95 counties in the State had at least one moth trapped in them since the first moths were caught in 1972 in Cocke (1 moth) and Sevier (1 moth) Counties. This year one moth was caught in Perry County for the first time.

Seven sites caught multiple moths per trap (25 moths). Two locations (Coffee and Hamilton Counties) were in an urban grid (1 trap/square mile), and four (Campbell (3) and Sevier Counties) were in a rural grid (1 trap/4 square miles). Three neighboring rural sites north of LaFollette (Campbell County) caught a total of ten moths and are of great concern because of the potential for spread into the adjacent oak/hickory forests. There were two multiple catches in one campground this year (Sevier County).

Delimiting Site Trapping

A total of 1,191 traps were placed in 37 delimiting sites in 2000 (16 traps/square mile). These locations evaluate sites where the gypsy moth was found in 1999 but was not established (no other

life stages were found). Eight (8) areas were positive with 52 moths caught in a total of 13 square miles (6 sites/71 moths in 1999).

In Oak Ridge (Anderson County), four moths were trapped in three square miles (17 moths in 1999). In a rural residential area near Tellico Plains (Monroe County), 42 moths were detected over four square miles (18 moths in 1999). A mist blower will be used to treat one acre twice with diflubenzuron in May, 2001 around a high moth catch site in Monroe County. There were no other multiple catch sites.

In 2001, 48 sites are proposed for delimiting trapping. One area in each of two counties (Campbell and Monroe) will have egg mass surveys during the fall and winter of 2000-2001.

Eradication Site Trapping

Three sites will be trapped in 2001 involving 208 square miles where gypsy moths were caught since 1996 (Scott County only), and the insect was established (two or more life stages of the gypsy moth present). Additional sites may be added, pending the results of the egg mass surveys.

Forest Insect and Disease Highlights - 2000

An **April frost** defoliated ten (10) percent of hackberry saplings and mature trees, involving over half of their crowns in low-lying areas of northern Middle Tennessee (Davidson & Williamson Counties). Early **October frost** followed by warm weather through November caused leaves to remain on some hardwoods through the end of December. **Rainfall** in mid-November stimulated some young trees to flush out with new growth that was killed by the cold December temperatures. A **tornado** damaged 500 acres of red and white oaks and yellow poplar on one north central state forest in Stewart County.

Black turpentine beetle populations were up on droughty sites and recently logged areas statewide. **Nantucket pine tip moths** increased in southwestern Tennessee (McNairy & Shelby Counties), Cumberland Plateau (Cumberland County) and southeastern Tennessee Valley (Rhea County) on two to four year old loblolly pine. **Ips beetles** were at higher levels in late fall in West and Middle Tennessee and Cumberland Plateau.

Southern pine beetle populations were the highest since 1975 with more counties infested during one year than any time of recorded beetle history. Over 9000 spots and more than \$16 million loss to landowners occurred. One county in the upper Cumberland Plateau has lost over 50 percent of its southern yellow pine (loblolly/shortleaf) component (Morgan County). Southern pine beetles killed one third of a shortleaf pine orchard in Pickett State Forest, all the shortleaf orchard in Norris and four loblolly pines in the Pinson orchard. Loblolly pine progeny tests (all 20 years of age or less) in other locations (Bledsoe, Chuck Swan, Lone Mountain and Prentice Cooper State Forests and Norris) had beetle spots as well as Virginia pine progeny tests at Prentice Cooper, Lone Mountain and Chickasaw State Forests. The white pine orchard at Lone Mountain State Forest had 12 trees killed.

Three known infested counties have **gypsy moth** ground eradication projects in progress (Scott, Sevier and Cumberland Counties). Two counties have increased moth catches (Monroe and Campbell Counties) triggering heavier trapping densities in 2001. All these locations were in East Tennessee and the Cumberland Plateau. There were increased catches of hitch-hiking moths in northeastern Tennessee - a result of the southern transport of higher Virginia populations.

Very few white oaks were infested with **jumping oak gall** statewide. No **oak wilt** was present in flights over White, Cumberland and Putnam Counties in June.

Fire damaged over 35,000 acres of forest land in the northern half of East Tennessee in the fall of 2000 from October 28 to November 7. Over 64,000 acres were burned statewide in the fall fire season.

Drought was less intense than the previous two summers. However, the cumulative effect of reduced water tables caused continued oak/hickory mortality in scattered counties statewide. Often suppressed or older oaks died first (1 to 5 trees per acre) on southern and western facing slopes or sites with shallow soil depths. Some yellow poplar decline and mortality was observed in Middle and West Tennessee (Carroll & Bedford Counties). Four and six year old loblolly pine had terminal needle browning (less than 5 percent of the trees) in Cumberland and Morgan County possibly due to drought. Fewer sapling redcedars were killed in Rutherford and Wilson Counties than in 1999 (Middle Tennessee). White pine mortality was also reduced from 1999 in Middle Tennessee.

Hypoxylon canker increased on all oak species in West Tennessee (Haywood and McNairy Counties), Middle Tennessee (Bedford, Dickson, Lewis, and Stewart Counties) and upper East Tennessee (Anderson, Claiborne, Knox, and Sevier Counties). **Sycamore anthracnose** infected fewer trees statewide with the mild spring temperatures and drier weather, but **dogwood anthracnose** mortality continued in the eastern third of the State on the high hazard sites. **Procerum root disease** continued to kill scattered white pines in the urban areas of East and Middle Tennessee.

Aphids on yellow poplar and other hardwoods and **Phylloxera** populations on hickory and pecan were up this spring. **Walkingsticks** were at low levels in Pickett County, while **bagworms** populations remained static statewide.

Loblolly pine sawflies continued at lower levels in scattered locations in Middle and West Tennessee (Cheatham, Davidson, Dickson, Haywood, Putnam, Rutherford, Shelby, and Wilson Counties). **Redheaded pine sawfly** defoliation increased in Virginia pine Christmas trees in north central Tennessee (Wilson) and in loblolly pines in West Tennessee (McNairy and Carroll Counties). **White pine weevil** damage was reduced on the Cumberland Plateau compared to 1999. However, **pales weevil** feeding on pines adjacent to southern pine beetle-harvested areas increased in East Tennessee and the Cumberland Plateau.

Fall webworm and eastern tent caterpillars were generally at low levels statewide. However, **locust leaf miners** caused widespread heavy defoliation in East Tennessee and portions of Middle Tennessee. **Variable oakleaf caterpillars** heavily defoliated over 900 acres of oak/hickory and oak/pine types in southwestern Tennessee (Fayette, Hardeman, Haywood and Shelby Counties). **Orange-striped oakworms** in Claiborne, Putnam and Sevier Counties defoliated urban pin oaks (1/4 of lower crown). **Yellow necked caterpillars** defoliated more oaks in northern Middle Tennessee than last year. **Grasshoppers** were abundant through mid-summer in Wilson and Monroe Counties. **Fall cankerworm** populations were down in an oak/hickory stand in northeastern Tennessee (Sullivan County).

HISTORICAL NOTES

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Don Clements	'75 - '76	Cook's Pest Control
Gary Lentz	'76 - '77	University of Tennessee
Chester Gordon	'77 - '78	TN Dept. of Agriculture
Gene Burgess	'78 - '79	University of Tennessee
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Paris Lambdin	'95 - '96	University of Tennessee
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Clete Youmans	'98 - '99	American Cyanamid
Catherion Mannion	'99 - '00	TN Nursery Crop Res. Cnt.

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Lyle Klostermeyer	'79 - '82	University of Tennessee
Bill Shamiyeh	'82 - '85	University of Tennessee
Richard Caron	'85 - '91	University of Tennessee

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Gary Lentz	'93 - '00	University of Tennessee

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Harvey Barton	'94 - '97	Arkansas State University
Steve Powell	'97 - '00	TN Dept. of Agriculture

**Editors of the Tennessee
Entomological Society (1991 - present)**

<u>Editor</u>	<u>Term</u>	<u>Affiliation</u>
Gray Haun	'91 - '99	TN Dept. of Agriculture
Lynn Snodderly	'99 - '00	TN Dept. of Agriculture

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- '00 Russ Patrick
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russ1212@utk.edu
- '99 Daniel Otto
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- '00 Roberto Pereira
Research Entomologist
USDA-ARS, CMAVE
1600 SW 23rd Drive
Gainesville, FL 32604
- '00 Steve D. Powell ✓
TN Dept. of Agri.

	<p>Div. of Regulatory Serv. P.O. Box 40627, Melrose Station Nashville, TN 37204 (615) 837-5139 Fax (615) 837-5246 spowell@mail.state.tn.us</p>		<p>TN Dept. of Agri. Div. of Regulatory Services 3211 Alcoa Hwy Knoxville, TN 37920 (865) 594-6098 Fax (865) 594-8900 bluedot@vsit.net</p>
'99	<p>Amanda Ramsey 1128 N. Graycroft Ave. Madison, TN 37115 (615) 868-3952 amanda.carole@worldnet.att.net</p>	H	<p>Mendell E. Snodgrass, Sr. 228 Pat Road Knoxville, TN 37922 (423) 966-7259</p>
'99	<p>Joseph R. Schiller Dept. of Biology. Austin Peay St. University Clarksville, TN 37044 (931) 221-7249 schillerj@apsu.edu</p>	'00	<p>William F. Stone 195 McAfee Road Rossville, GA 30741-2901 (706) 866-7526</p>
'99	<p>Alycia E. Schweiger Ent. & Plant Pathology Univ. of TN, P.O. Box 1071 Knoxville, TN 37901-1071 (865) 974-3632 aschweig@utk.edu</p>	'99	<p>Christof Stumpf Dept. Ent. & Pl. Sci. UT Knoxville, PO Box 1071 Knoxville, TN. 37901 (865) 974-3632 Fax (865)974-8682 cstumpf@utk.edu</p>
'99	<p>Ron Seward 605 Airways Blvd. Jackson, TN 38301 (901) 425-4718 rwseward@extl.ag.utk.edu</p>	'99	<p>Don Sudbrink Delta Research and Extension Ctr. Stoneville Research Quarantine Fac. P.O.Box 225 Stoneville, MS 38776-0225 (662) 686-9311 sudbrink@drec.msstate.edu</p>
'00	<p>John Skinner Ent. & Plant Path. Univ. of TN, P.O. Box 1071 Knoxville, TN 37901-1071 (865) 974-7138 Fax (865) 974-8868 Jskinner@utk.edu</p>	'00	<p>Karen Vail Ent. & Plant Pathology Univ. of TN, P.O. Box 1071 Knoxville, TN 37901-1071 (865) 974-7955 Fax (865) 974-4744 kvail@utk.edu</p>
'00	<p>Lynn Snodderly</p>	'00	<p>Nancy VanTol 427 Arlington Ave.</p>

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(865) 974-7135
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H Harry E. Williams
1005 Francis Road
Knoxville, TN 37909
(865) 690-3069

H Jimmy R. White
Rt. 5, Box 300
Brownsville, TN 38012
(901) 772-1919

Sustaining Members ('00)

Clete Youmans
American Cyanamid
White Columns Drive
Kathleen, GA
(912) 218-9305
youmansc@pt.cyanamid.com

**Application for Membership in the
TENNESSEE ENTOMOLOGICAL SOCIETY**

I (we), herewith, submit this application for membership in the Tennessee Entomological Society.
Society pins are available to members for \$10.00.

PLEASE PRINT

Name of Prospective Member _____

Affiliation _____

Address _____ Zip Code _____

Phone Number _____ Area Code () _____

FAX Number _____ Area Code () _____

email address _____

Occupation _____

Please Check

___ Annual Dues \$5.00

___ Society Pin \$10.00

___ Annual Due for Students \$1.00

Sustaining Member Dues \$25.00

Amount Enclosed _____

Please Remit to:

Dr. Gary Lentz
Dept. Entomology and Plant Pathology
605 Airways Blvd.
West Tennessee Experiment Station
Jackson, TN 38301

CONSTITUTION
of the
TENNESSEE ENTOMOLOGICAL SOCIETY
(as of October 1991)

Article 1. Name

This Society is formed in the name and style of the "Tennessee Entomological Society", as an educational institution, not contemplating financial gain or profit. It is herein and after called the Society.

Article 2. Purpose

The purpose and object of the Society is to foster entomological accomplishment among its members and to promote the welfare of all of the State of Tennessee through the encouragement of: (1) the preparation, reading, and/or publication of papers, (2) association and free discussion among all members, (3) the dissemination of entomological information to the general public, and (4) cooperative efforts in statewide insect surveys.

Article 3. Membership

Section 1. Original Members: Any person designated at the organizational meeting of the Society to occupy the status of "Member" shall be considered as and be a Charter Member. Thereafter, the organizational membership shall have no authority to name or appoint members of the Society.

Section 2. Membership: Membership shall be open to all persons interested in Entomology.

Section 3. Sustaining Membership: Sustaining Membership is open to commercial or industrial organizations upon meeting approval and requirements of the Board of Directors.

Section 4. Honorary Membership: Honorary Members may be selected from time to time by a majority vote of the Board of Directors.

Section 5. Student Membership: Student Membership is open to students enrolled in any education institution and meeting the requirements of the Board of Directors.

Section 6. Procedure to Obtain Membership: Any person desiring to become a member of the Society shall do so by application and payment of dues to the Treasurer. After approval of the majority of the Board of Directors, said applicant shall become a duly constituted member.

Section 7. Members in Good Standing: A member who is current in payment of dues.

Article 4. Membership Rights

Section 1. Voting: Each member in good standing shall be entitled to one vote at any regular or special meeting or by mail. Voting by proxy shall not be allowed.

Section 2. Privileges: All members in good standing shall have equal privileges in the presentation of papers and discussions at meetings.

Article 5. Membership Certificates

Section 1. Certificates: The Board of Directors shall decide upon what evidence of membership each member in good standing shall be entitled to receive.

Section 2. Transfer: Evidence of membership in the Society will not be transferable or assignable.

Article 6. Dues

Section 1. Annual Dues: The amount of the annual dues for membership in the Society will be established by the Board of Directors from time to time. The use or uses of dues collected shall also be determined by the Board.

Section 2. Time of Payment: The Board of Directors shall set such times during each year as it deems advisable for the payment of annual dues by members. Generally, annual dues shall be paid during registration at the annual meetings. However, a member may mail dues to the Treasurer of the Society if the member cannot attend a given annual meeting. If a member fails to pay dues two (2) years in a row, such member shall be dropped from the rolls.

Section 3. Honorary Members: There shall be no dues required for Honorary Members or others specially designated by the Board of Directors.

Article 7. Meetings of the Society

Section 1. Annual Meetings: The Society shall hold annual meetings at such times and places as may be designated by the Board of Directors and specified in the notice thereof, for the election of officers and any other business as may be properly brought before the meeting.

Section 2. Registration Fee: A registration fee, in the amount to be determined by the Board of Directors, shall be paid at each annual meeting by all members and non-members who attend. The Board of Directors will determine the use of these fees.

Section 3. Special Meetings: Special meetings of the Society shall be held at any time and place as specified in the notice thereof whenever called by the President or any two (2) or more members of the Board of Directors.

Section 4. Notice: Notice of all meetings of the Society, annual or special, stating time, place, and agenda shall be mailed to each member by the President, Secretary, Treasurer, or Directors calling the meeting not less than seven (7) days prior to the meeting.

Article 8. Officers

Section 1. Officers: The officers of the Society shall consist of a President, President-elect, Secretary, Treasurer, Editor, and Historian, all of whom, except the President, shall be elected by and from the membership by a majority vote of members or by mail. The first President of the Society shall be elected by and from the membership at the organizational meeting for a term extending to the beginning of the first annual meeting. Thenceforth, the President-Elect shall automatically accede to the office of President at each annual meeting, or when the President is unable or unwilling to act for any reason. Nominees for each elective office of the Society shall be selected by a nominating committee of three (3) members appointed at the annual meeting by the President. Nominations may also be presented from the floor. The President and President-Elect shall hold office from the date of election at the annual meeting until the election of their successors at the next annual meeting, and shall not be eligible for re-election to the same office for a successive term. The Secretary, Treasurer, and Editor shall hold office from the date of election at the annual meeting until the election of a successor at the third following annual meeting and shall be eligible for re-election. The Historian shall hold office from the date of election at the annual meeting until the election of a successor at the fifth following annual meeting and shall be eligible for re-election. No member shall occupy more than one office at any one time.

Section 2. Duties and Powers of the President: The President shall be the Chief Executive Officer of the Society and shall preside at all meetings of the Society and the Board of Directors, have and exercise general and active management of the Society, execute and enforce all orders and resolutions and regulations duly adopted by the Board of Directors, execute all contracts in the name of the Society, and perform such other duties as assigned by the Board of Directors.

Section 3. Duties and Powers of the President-Elect: In the absence of the President, or in the case of failure to act, the President-Elect shall have all the powers of the President and shall perform such other duties as shall be imposed by the Board of Directors from time to time.

Section 4. Duties and Powers of the Secretary: The Secretary shall attend and keep the minutes of all meetings of the Board of Directors and the Society, shall have charge of the records and seal of the Society, and shall, in general, perform all the duties incident to the office of Secretary of the Society.

Section 5. Duties and Powers of the Treasurer: The Treasurer shall keep full and accurate accounts of the books of the Society and shall deposit all monies and the valuable properties and effects in the name of and to the credit of the Society in such depository or depositories as may be designated by the Board of Directors. The Treasurer shall disperse funds as may be ordered by the Board, getting proper receipts for such disbursements; and shall render to the Board of Directors whenever required by it, an accounting of all transactions as Treasurer. During each annual meeting, the Treasurer shall give a report on the annual financial condition of the Society. The Treasurer shall, in general, perform all the duties incident to the office of Treasurer of the Society.

Section 6. Duties and Powers of the Editor: The Editor shall be a member of the Board of Directors and Chair of the Publication and Editorial Committee and be responsible for editing and publishing such publications as directed by the Board of Directors and passed by the majority of the voting membership at a called meeting.

Section 7. Duties and Powers of the Historian: The Historian shall maintain and be responsible for keeping a complete and accurate history of the activities of the Society from year to year.

Section 8. Vacancies in Office: Any vacancy in the office of President-Elect, Secretary, Treasurer, Editor, or Historian, however occasioned, may be filled, pending the election of a successor by the Society, by a majority vote of the remaining Directors. Should an office be filled by vote of the Board of Directors, the person so elected shall not become the officer upon the next annual meeting unless elected as such by the Society according to the procedures set forth for the election of officers of the Society in Article 8, Section 1, of this Constitution.

Article 9. Board of Directors

Section 1. Makeup and Responsibilities: The Board of Directors shall consist of the immediate past-President, the President, President-Elect, Secretary, Treasurer, Editor, and Historian of the Society and two members-at-large. The members-at-large shall be elected at the Annual Meeting of the Society and shall serve a term of one year. Any three (3) Directors shall constitute a quorum for the transaction of business. All properties, property rights, objects and purposes of the Society shall be managed, promoted, and regulated generally by the Board of Directors.

Section 2. Installation and Term of Office: The members of the Board of Directors shall be installed after their election as officers of the Society as set forth in Article 8, Section 1, of this Constitution, at the annual meeting of the Society, or at any adjourned meeting, or at any special meeting called for that purpose. All installed Directors shall serve for a term corresponding to that of the office in the Society to which each was elected by the members and thereafter until their successors are elected, accept office, and are installed.

Section 3. Annual Meetings: The Board of Directors shall meet immediately after the adjournment of the annual meeting of the members for the transaction of such business as may come before the Board. No notice of such meeting shall be required, and should a majority of the

newly-elected Directors fail to be present, those present may adjourn, without further notice to a specified future time.

Section 4. Other Meetings: The Board of Directors shall not be required by this Constitution to hold regular meetings but may, by resolution or otherwise, establish such order of meetings as it deems desirable. Special meetings of the Board shall be held at any time at such places as may be specified in the notice thereof, whenever called by the President or any two (2) or more Directors.

Section 5. Notice: Notice of all meetings of the Board of Directors, other than the annual meeting, starting time, place, and agenda for which the meeting was called, shall be given to each Director by the President or Directors calling the meeting not less than three (3) days prior to the meeting.

Section 6. Vacancies in Board of Directors: Any vacancy in the office of any Director, however occasioned, may be filled, pending the election of a successor by the Society, by a majority vote of the remaining Directors.

Article 10. Miscellaneous Provisions

Section 1. All checks and drafts shall be signed in such manner as the Board of Directors may from time to time determine.

Section 2. At all duly constituted meetings of the Society or Board of Directors of the Society, 10% of the eligible members, or 3 Directors, respectively, present shall constitute a quorum for the transaction of any business presented at such meetings.

Section 3. All notices required to be given by this Constitution relative to any regular or special meeting of the Society or the Board of Directors may be waived by the Directors or members entitled to such notice, either before or on the date of the meeting and shall be deemed equivalent thereto. Attendance at any meeting of the Society or the Board of Directors shall be deemed a waiver of notice thereof.

Section 4. General Prohibitions: Notwithstanding any provision of this Constitution and By-Laws which might be susceptible to a contrary construction. A. No part of the activities of the Society shall consist of carrying on propaganda, or otherwise attempting to influence legislation. B. This Society shall not participate in, or intervene in, (including the publishing or distribution of statements), any political campaign on behalf of a candidate for public office.

Article 11. Amendments

Section 1. This Constitution may be altered or amended or By-Laws adopted by a majority vote of the quorum present at any annual or special meeting of the Society membership, provided that

notice of such proposed amendment or By-Laws shall have been given to the membership prior to the meeting.

1. Dates ('99), ('00) refer to last meeting attendance or last dues payment.
(\$5.00 Regular, \$1.00 Student, \$25.00 Sustaining/Corporate).

2. H = Honorary Member

TENNESSEE ENTOMOLOGICAL SOCIETY

MEMBERSHIP LIST

OCTOBER 2000

'00	Harold Bancroft Dept. of Biology University of Memphis Memphis, TN 38152 (901) 678-2592 Fax (901) 678-2592 bancroft@memphis.edu	'99	Cindy Bilbrey ✓ 303 Kent Road Nashville, TN 37214 (615) 316-0543
'00	Melvin Beck Dept. of Biology University of Memphis Memphis, TN 38152 (901) 678-2970 Fax (901) 678-4746 mbeck@memphis.edu	'00	James B. Bogard 3965 Keeley Drive Nashville, TN 37211 (615) 832-6759
'00	Andrew (Drew) Beld Dept. of Biology Vanderbilt University Nashville, TN 37212 (615) 321-3167 andrew.m.beld@vanderbilt.edu	H	Carl D. Brown Dept. of Biology University of Memphis Memphis, TN 38152 (901) 678-2963 Fax (901) 678-4746
'00	Charles J. Biggers Dept. of Biology University of Memphis Memphis, TN 38152 (901) 678-4468 Fax (901) 678-4746 cbiggers@memphis.edu	'99	Edward E. (Gene) Burgess Ent. and Plant Pathology P.O. Box 1071 Knoxville, TN 37901-1071 (865) 974-7138 gburgess1@utk.edu
		'00	Katrina C. Burns 3640 Pleasant Hollow Dr. Apt 012 Memphis, TN 38115 (901) 365-1761 Fax (901) 544-0375 bk1trina@yahoo.com

**Board of Directors
Members at Large**

<u>Member</u>	<u>Term</u>	<u>Affiliation</u>
Gary Lentz	'87 - '88	University of Tennessee
Blake Bevill	'87 - '88	Arkansas State University
Michael E. Cooper	'88 - '89	TN Dept. Agriculture
Jay P. Avery	'88 - '89	University of Tennessee
Joe Dunn	'89 - '90	American Cyanamid Company
Charles Pless	'89 - '90	University of Tennessee
Paris Lambdin	'90 - '91	University of Tennessee
Jim Keener	'90 - '91	TN Dept. of Agriculture
Steve Powell	'91 - '92	TN Dept. of Agriculture
Lee Greer	'91 - '92	Valent
Alan Hopkins	'92 - '93	Miles, Inc.
Donald Ourth	'92 - '93	University of Memphis
Mark Carder	'93 - '94	University of Tennessee
Rich Emerson	'93 - '94	TN Dept. of Agriculture
Ray Nabors	'94 - '95	Univ. of MO
Alan Hopkins	'94 - '95	Miles, Inc.
Steve Powell	'95 - '96	TN Dept. of Agriculture
Jim Bogard	'95 - '96	TN Dept of Agriculture (Retired)
Hans Chaudhary	'96 - '97	TN Dept. of Agriculture
Cletus Youmans	'96 - '97	American Cyanamid
Larry Latson	'97 - '98	David Lipscomb University
Catharine Mannion	'97 - '98	TN State University
Karen Vail	'98 - '99	University of Tennessee
Roberto Pereira	'98 - '99	University of Tennessee
Jim Keener	'99 - '00	TN Dept. of Agriculture
Lee Greer	'99 - '00	Valent

**Historians of the Tennessee
Entomological Society (1973 - Present)**

<u>Historian</u>	<u>Term</u>	<u>Affiliation</u>
Charles Pless	'73 - '76	University of Tennessee
Herb Morgan	'76 - '79	USDA
Mendell Snodgrass	'79 - '82	USDA
Russ Patrick	'82 - '87	University of Tennessee
Russ Patrick	'87 - '92	University of Tennessee
Harry Williams	'92 - '00	University of Tennessee

**Honorary Members of the Tennessee
Entomological Society (1982 - Present)**

<u>Honorary Member</u>	<u>Year</u>	<u>Affiliation</u>
Jimmy White	1982	TN Dept. of Agric.
Mendell Snodgrass	1983	USDA
Carl Brown	1985	Memphis State
Myrtice Snodgrass	1985	Knoxville, TN
John A. Hammett	1987	TN Dept. of Agric.
Joe C. Dunn	1990	American Cyanamid
Harry Williams	1997	University of Tennessee (retired)

**Howard Bruer Award (est. 1975)
Recipients of the Tennessee Entomological Society (1975 - Present)**

<u>Recipient</u>	<u>Year</u>	<u>Location</u>
Whitney Eckler	1975	Memphis, TN
Joe Martin	1976	Bolivar, TN
Bryan Peters	1977	College Grove, TN
Tidus Pollard	1978	Huron, TN
John Bentley	1979	??
Melissa Hart	1980	Watertown, TN
Gary Miller	1981	Knoxville, TN
Harold Glass	1982	Knoxville, TN
----	1983	(No award given)
----	1984	(No award given)
Penny Thompson	1985	Davidson County
Matthew Fumich	1986	Munford, TN

Christie Greer	1987	Greene Co.
Dottie Hodges	1988	Hamblen Co.
-----	1989	(No award given)
Tim Gentry	1990	Woodbury, TN
Jennifer Hartsell	1991	Hamblen Co.
Jessica Taylor	1992	Lincoln Co.
Jennifer Lenter	1993	Fayetteville Co.
Jeremy Smith	1994	Savannah Co.
George Carroll	1995	Anderson Co.
Stacy Milhahn	1996	Lincoln Co.
Nancy Warden	1997	Marshall Co.
Denise Byrum	1998	Moore Co.
James Johnson	1999	Shelby Co.
Wade Black	2000	Bolivar, TN

**Outstanding Entomologist (Tennessee Entomologist of the Year)
Award (est. 1981) Recipients of the Tennessee
Entomological Society (1981 - Present)**

<u>Recipient</u>	<u>Year</u>	<u>Affiliation</u>
Myron Smith	1981	Hill Smith Pest Control
Harry Williams	1985	University of Tennessee
John A. Hammett	1987	TN Dept. of Agric.
Joe C. Dunn	1991	American Cyanamid

Richard E. Caron Outstanding Entomologist Award

<u>Recipient</u>	<u>Year</u>	<u>Affiliation</u>
Harry Williams	1995	University of Tennessee (Retired)
Harvey Barton	1996	Arkansas State Univ. (Retired)
Carroll Southards	1997	University of Tennessee (Retired)
-----	1998	

Graduate Student Award (est. 1986) Recipients of the Tennessee Entomological Society (1986 - Present)

<u>Recipient</u>	<u>Year</u>	<u>Location</u>
Jay Avery	1986	Knoxville, TN
Laura Rogers	1987	Knoxville, TN
Jason Oliver	1988	Knoxville, TN
Steve D. Powell	1989	Knoxville, TN
Robert C. Brown	1990	Knoxville, TN
Donald L. Sudbrink, Jr.	1991	Knoxville, TN
Deborah Landau	1992	Knoxville, TN
Deanna Colby	1993	Knoxville, TN
Lee Holt	1994	Knoxville, TN
Kenneth Copley	1995	Knoxville, TN
Dina Roberts	1996	Memphis, TN
Bryan Hed	1997	Knoxville, TN
Gary Moughler	1998	Knoxville, TN
Andrew Beld	1999	Nashville, TN
Lacey McNally	2000	Baton, Rouge, LA