



# Newsletter of the Michigan Entomological Society

Vol. 64, No. 2

September 2020

MES Website: <http://michentsoc.org>

Facebook: <https://www.facebook.com/michentsoc/>

## In This Issue

Report on the MES annual meeting

Abstracts from the 2020 Annual Meeting

Asian Longhorned Beetle: A 2020 Update

2020 MES election results

## 66<sup>th</sup> Annual MES Meeting

June 6, 2020, ONLINE!

For the first time in the history of the Michigan Entomological Society the annual meeting was conducted in an online format, utilizing the services of Zoom Video Communications, Inc. Members and speakers were able to participate in the meeting without leaving their homes or offices, incurring no costs for travel, lodging, meals or registration. The MES incurred no meeting expenses, thanks to our treasurer Angie Pytel allowing us to utilize her paid Zoom plan.

President-Elect Duke Elsner presided over the meeting from his home office in Traverse City. The session included eight speakers and the annual MES business meeting. Close to 30 participants participated by Zoom. The meeting was recorded and once some editing is done, it is hoped that it can be made available for members to view.

## Abstracts from the 66<sup>th</sup> Annual Meeting of the Michigan Entomological Society (part one)

**Where have all the Pine Shoot Beetles gone, long time passing? The 1992 PSB federal quarantine is coming to an end**

**Robert A. Haack**, USDA Forest Service, Northern Research Station & Michigan State University, Department of Entomology, Emeritus  
([robert.haack@usda.gov](mailto:robert.haack@usda.gov) or [haack@msu.edu](mailto:haack@msu.edu))

The pine shoot beetle (PSB), *Tomicus piniperda* (L) (Coleoptera, Curculionidae, Scolytinae), a Eurasian bark beetle species, was the first exotic forest insect that I studied. This began in 1992, when a Christmas tree grower near Cleveland, Ohio, brought some unknown beetles that were infesting his pine trees to Dr. David Nielsen at The Ohio State University, who subsequently sent them to Dr. Stephen Wood at Brigham Young University, a world authority on bark and ambrosia beetles. Dr. Wood's reply letter of 16 July 1992 made a huge impact on USDA APHIS and state plant health regulators around the country, especially this sentence: "This species is the notorious *Tomicus piniperda*, the second most destructive bark beetle in Europe and the most destructive in pine."

USDA APHIS was notified of this discovery on 22 July 1992 and by the next day APHIS had established a 'New Pest Advisory Group' to evaluate its potential pest status and soon thereafter started training sessions in Ohio on how to identify and survey for PSB. This response paid



*Tomicus piniperda* adult by Udo Schmidt

off and within a month, PSB was found in five nearby states (listed in order of discovery): IN, PA, MI, NY, and IL. The infested states imposed internal quarantines on themselves, and then in September and October 1992, other US states (FL, GA, KS, LA, NC, OR, WV) started imposing quarantines on the infested states, given that millions of Christmas trees would soon be shipped out of the infested states. These state-level regulations varied widely, which prompted APHIS to impose a federal quarantine in November 1992 that provided a uniform set of rules for the entire country.

At first, the PSB federal quarantine covered pine products such as logs and lumber with bark, nursery stock, and Christmas trees. Pine stumps and bark/chips were added in 1993, and pine Christmas wreaths and garlands were added in 1995. The rules to move these pine products to areas outside the quarantine zone varied from product to product, but generally required some level of inspection and treatment. The economic impacts on many pine industries were huge. Initially, logs had to be debarked or fumigated prior to movement and Christmas trees had to pass a zero-tolerance inspection. Finding just one PSB adult stopped the shipment of all pine trees from a field.

Over the next few years many modifications were made to the quarantine. For the logging industry, an open season for log movement was allowed in summer (July - October). And for the pine Christmas tree and nursery industries, a

“Compliance Management Program” was developed (primarily through research conducted at Michigan State University and Purdue University) that established a series of Best Management Practices (BMPs) for growers to follow and thereby gave growers more confidence that if they followed the BMPs they would be able to ship their trees outside the quarantine zone.

PSB completes one generation per year. It overwinters at the base of pine trees in the outer bark, and flies in search of breeding sites in late winter or early spring when temperatures start to exceed just 10-12°C. PSB is monogamous, constructing an egg gallery at the bark-sapwood interface that follows the grain of the wood. The new generation of adults emerges in late May or early June but instead of having a second generation, they fly to the crowns of pine trees and feed inside current-year and 1-year-old shoots until autumn by making short tunnels that average about an inch long. A single adult can make 4-6 tunnels during the summer. Sometimes adults make multiple tunnels in the same shoot, and sometimes they select new shoots for each tunnel. So why was there such concern? Because infested shoots usually die, and when shoot-feeding is severe on forest trees, tree growth is reduced, and such trees can be infested and killed by breeding PSB or other insects in future years (which has happened in Europe).

When PSB was discovered in 1992, it was anticipated that PSB outbreaks would soon happen in the US and be widespread. So, what has happened? County-level surveys were conducted in many states, and the number of infested states grew year by year, with about 20 states quarantined by 2016, mostly in the Midwest and Northeast. Spread has been very slow during the past decade. Although high PSB populations were found in some Christmas tree fields and nurseries in the 1990s, PSB levels have dramatically fallen in recent years, especially since growers started following the Compliance Management Program BMPs. In natural and planted pine forests in the US, PSB has never become a major pest and no PSB outbreaks have ever been reported, perhaps in part due to harvesting practices in North



PSB adult in its feeding tunnel in a pine twig

America that utilize most pine slash from logging sites.

As a result of PSB not becoming a major pest in the United States, APHIS considered “deregulation” of PSB a few times over the past two decades. However, such efforts were often met with strong concerns from US states in the West and South (which are the major pine growing regions of the country), and deregulation never happened. But in September 2019, APHIS again announced in the US Federal Register a “proposed rule” to deregulate PSB (= rescind the quarantine). So, after nearly 28 years, will the PSB federal quarantine come to an end? The answer is Yes, and on 30 September 2020, APHIS announced that their final rule to deregulate will be published on 1 October 2020 and become effective on 2 November 2020 (USDA APHIS 2020).

### Selected references

- Haack RA and Poland TM. 2001. Evolving management strategies for a recently discovered exotic forest pest: the pine shoot beetle, *Tomicus piniperda* (Coleoptera). *Biological Invasions* 3: 307–322.
- Haack RA, Lawrence RK, Heaton G. 1993. The pine shoot beetle: a new exotic pest. *Newsletter of the Michigan Entomological Society* 38 (1): 1–2.
- Haack RA, Lawrence RK, Heaton GC. 2000. Seasonal shoot-feeding by *Tomicus piniperda* (Coleoptera: Scolytidae) in Michigan. *The Great Lakes Entomologist* 33: 1–8.
- Haack RA, Lawrence RK, Heaton GC. 2001. *Tomicus piniperda* (Coleoptera: Scolytidae) shoot-feeding characteristics and overwintering behavior in Scotch pine Christmas trees. *Journal of Economic Entomology* 94: 422–429.
- McCullough DG and Sadof CS. 1996. Pine shoot beetle compliance program for Christmas trees: a manual for Christmas tree growers. Michigan State University Extension, East Lansing, Michigan, USA. Extension Bulletin E-2615, 15 pp.
- McCullough DG and Sadof CS. 1998. Evaluation of an integrated management and compliance program for *Tomicus piniperda* (Coleoptera: Scolytidae) in pine Christmas tree fields. *Journal of Economic Entomology* 91: 785–795.
- Petrice TR, Haack RA, Poland TM. 2002. Selection of overwintering sites by *Tomicus piniperda* (Coleoptera: Scolytidae) during fall shoot departure. *Journal of Entomological Science* 37: 48–59.
- Poland TM, Haack RA, Petrice TR. 2002. *Tomicus piniperda* (Coleoptera: Scolytidae) initial flight and shoot departure along a north-south gradient. *Journal of Economic Entomology* 95: 1195–1204.
- USDA APHIS (US Department of Agriculture, Animal and Plant Health Inspection Service). 1992. 7 CFR Part 301 – pine shoot beetle. *Federal Register*, 19 November 1992, 57(224): 54492–54499.
- USDA APHIS. 1996. Pine shoot beetle compliance management program. USDA APHIS, Plant Protection and Quarantine, Domestic and Emergency Programs, Riverdale, Maryland, 24 pp.
- USDA APHIS. 2019. 7 CFR Part 301 and 319 – Deregulation of pine shoot beetle. *Federal Register*, 23 September 2019, 84(184): 49680–49681.
- USDA APHIS. 2020. APHIS removes federal domestic quarantine for pine shoot beetle. [https://www.aphis.usda.gov/aphis/newsroom/stakeholder-info/sa\\_by\\_date/sa-2020/sa-09/psb-quarantine-removal](https://www.aphis.usda.gov/aphis/newsroom/stakeholder-info/sa_by_date/sa-2020/sa-09/psb-quarantine-removal)