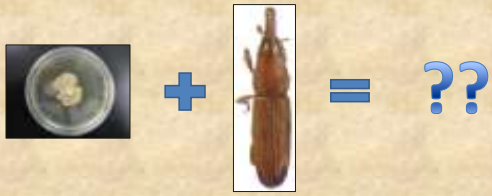
What are the implications of the discovery of *Geosmithia morbida* on *Stenomimus pallidus*?



Geosmithia morbida and associated cankers can occur in the absence of the walnut twig beetle or beetle-colonized bark.

North Carolina
Fungus was isolated from small bark cankers on "TCD-symptomatic" walnut but not associated with WTB or WTB damage.

Ohio
Fungus was isolated from small areas of discolored phloem tissue of branches from TCD-symptomatic walnut but "not clearly associated with beetle holes or galleries."

Indiana

A bark-colonizing weevil species can acquire *Geosmithia morbida*, but this is likely a "casual" relationship.

Lateral transmission of *G. morbida* by such weevils was suspected.

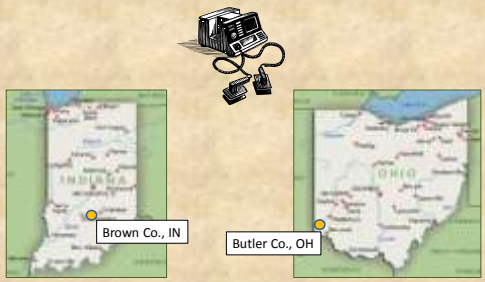
The low frequency of *G. morbida* occurrence on *S. pallidus* suggests "casual" relationship.

Himatium errans

Stenomimus pallidus is likely a "minor factor" in the epidemiology of TCD.

S. pallidus	*Pityophthorus juglandis*
• Widely distributed in Indiana, • Low population density, • Does not "mass attack" ??, • Low frequency of *G. morbida* occurrence on the species ("casual"), and • Not likely capable of the mass inoculation needed for TCD development.	• Foci of occurrences in the eastern USA, • Populations can build-up to high densities, • Mass attacks / aggressive behavior, • *G. morbida* consistently associated with species ("symbiont"), and • Capable of mass inoculation of black walnut.

Survey and research responses to recent Midwestern finds of *G. morbida* / TCD



Indiana DNR Response

Quarantined plantation
Yellowwood State Forest

"Bait bolts" added to 6 traps

Indiana DNR Response

State-wide and along southeast border with Ohio

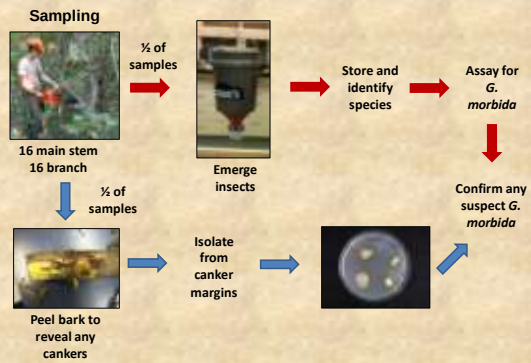
- Windshield surveys of black walnut being conducted in numerous cities,
- Gypsy moth trap tenders inspecting walnut near moth traps, and
- WTB lure-baited and small walnut bolt baited traps along lower IN – OH border.

Research and Development Response

Trap tree studies in Indiana and Ohio

Potential insect vectors from TCD trees in Hamilton, OH

Lab processing of samples from trap trees and TCD symptomatic trees



Research and Development Response

Evaluate virulence of Indiana *G. morbida* isolates on non-stressed black walnut in the quarantined plantation.

Summary

- The 2011 trap tree study in Indiana and Missouri yielded a wealth of useful information,
- The detection of *G. morbida* in Indiana raises important questions about our current understanding of the TCD complex, and
- Indiana DNR surveys and cooperative FS - university research have responded to the situation in Indiana and Ohio.

Acknowledgements

Indiana
- Matt Paschen
- Gary Frazier
- Lenny Farlee
- Brian Beheler
- Jim McKenna

Minnesota
- Melanie Moore, Paul Castillo (USFS)
- Meg McDermott (UMn)

Missouri
- Jerry VanSambeek (USFS)
- Simeon Wright (MDC) and MDC Forestry Division
- Harlan Palm (Walnut Council)
- Joe Amelon (USFS)
- Will Sammons (UMo)
- Megan Shawgo (UMo)
- Kevin Brown (UMo)
- Jim Lidlicker (UMo)

Walnut Council members