

Visit to South Carroll High School

On Tuesday morning, January 20, 2004, five members of the Maryland Chapter of TACF had a fascinating visit to South Carroll High School (SCHS), near Sykesville, MD, at the invitation of Brad Yohe, Supervisor of Science for Carroll County Public Schools. The purpose of the visit was to show us the facilities and demonstrate the competence of these young researchers. The County has developed a curriculum for 8th through 12th grades with American chestnuts as a theme -- from genetics to ecology and plant science. Mr. Yohe and his science faculty want their students to support TACF and its Maryland chapter with hands-on help in the American chestnut restoration process.

The school property includes thirty acres of woods containing a large number of American chestnut sprouts. Several years ago, this school got thirty American chestnut seedlings from ThorpeWood to plant. Last November, 300 seedlings from the Sugarloaf Mountain nursery were given to Brad Yohe who distributed them among County schools with thirty of them going to SCHS.

SCHS converted a maintenance building to be a Science Research Center under the direction of Robert Foor-Hogue. Two courses, Science Research I and II, are offered to juniors and seniors who meet a grade point threshold and who have completed the basic science courses of chemistry, physics and biology. There are 135 such students at SCHS now. Seven of the eight high schools in Carroll County offer Science Research courses.

The group met Mr. Foor-Hogue and heard brief presentations by eight of his students on their current research projects. All of these students spoke knowledgeably about their experiments and showed both confidence and enthusiasm. Their presentation materials, PowerPoint slides, lab reports, and photos were clear, informative and well done.

Most of the lab was devoted to aquaculture with tanks of fish used in experiments and plants grown from wastewater and hydroponically. One very interesting presentation was about restoring trout streams. The students studied the effects of different forms of blockages to determine which ones created the sort of pools that trout need to thrive. They made models of stream bed segments and put them in a tank with clear sides and sand and used water to simulate stream flow, showing how the structures promoted eddies and pools. Digital photos captured the action.

According to Bob Foor-Hogue, he got interested in centering the science research around aquaculture years ago to circumvent state restrictions on research using animals. So he uses fish for physiology and dissection -- and then eats them, making it OK! All the lab facilities had been designed and built by students, and students are responsible for maintaining the health of each tank and its contents.

Research is by no means limited to fish, however. Mr. Foor-Hogue has these students writing grant proposals -- and winning. Last year some of the students designed and built a torpedo in a partnership with the Applied Physics Laboratory that went 100 mph in a farm pond! Other students used computer CAD/CAM software to design and build a wind tunnel.

One of the student presenters had chosen to do a project on American chestnut blight and had sampled cankers from their own American chestnut trees and then cultured the fungus in agar. She was trying to get a sample of chestnut blight fungus to compare with her cultures. We hadn't known that any of the students was actually doing something with chestnuts, but sampling and identification of the blight strains present in a given orchard sounds like something that high school students could do.

Bob Foor-Hogue has discussed with The Chesapeake Bay Foundation the possibility of using American chestnuts as part of erosion control, especially on steep slopes. He believes that the Foundation has grant money available for such a demonstration project if the Maryland Chapter of

TACF could provide the seedlings.

Mr. Foor-Hogue is willing to share his materials with others and said he would put all of it on a CD that could be circulated to other interested teachers.

The vitality and energy of these students and the range of their interests was evident. Bob Foor-Hogue is an exceptional teacher by initiating a truly interdisciplinary course, leading the students to do it all themselves-- and then assess their errors. The group members were very impressed.

Visit the school website at www.carr.lib.md.us/schs/.