



PEDOLOGUE

• Fall 05—Winter06

Newsletter of:
Mid-Atlantic Association of Professional Soil Scientists
Edited by Del Fanning

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Editor's Comments

This issue of Pedologue is again available from the MAPSS Web Site, <http://sawgal.umd.edu/mapss/>. Hard copies are not sent unless the editor, dsf@umd.edu or 301-405-1308, is informed of someone who needs one.

This issue was started as the Fall 05 issue, but since it is now being completed in late-January 06, the coverage has been extended to Winter 06 as well. My original intention of having 4 issues each year wasn't fulfilled in 05.

Diane Shields has been very good about submitting further information and pictures pertaining to the MAPSS monolith collection and display efforts for the Delaware Agricultural Museum and the DE NRCS State Office. New MAPSS President Dr. Brian Needelman and I have decided that there should be a special issue of Pedologue totally devoted to the DE Monoliths Collection and Display activities and we are working to get this done. We hope to include some of the many additional pictures that Diane has given us in the special issue. Brian says that he plans to keep this special issue up on the web site for some time and that it can run concurrently with the current issue that will be up on the site at any given time, such as this new issue. Note that the next MAPSS meeting, on Feb. 11, 06 (see calendar of coming events), will take place at the DE Ag. Museum, so all who attend will have an opportunity to see the Monoliths Display at that time or be able to renew their appreciation of the display and those who developed it for those who have already been there to see it.

A matter of concern to me that may be considered at the MAPSS meeting is -- what should we do about storing back Pedologue issues. Should that be of concern to the

organization. I think I have hard copies of all of the back issues since I have taken over as the editor, since which time the issues have been placed on the MAPSS web site and no longer sent out routinely as hard copies, although my copies may not be totally identical to the ones that went up on the web site. I probably also have them all as MS-Word files, although I am not positive about that. In my opinion the back issues probably should be kept in an organized way by someone for MAPSS if for no reason other than that they are a kind of historical record of the activities of the organization. Does anyone have a complete set of the hard copy issues of Pedologue from the time that Pedologue was started -- and when was the newsletter started -- I ask anyone who knows? Was George Demas the only other editor before my time?

Most of my professional time for the last few months has been devoted to preparing for the WCSS acid sulfate soils field trip, to take place July 6 (evening) through July 8, 2006, as described on the World Congress web site www.18wcoss.org and in the brochure on the Congress, page 21. I have received considerable help from some MAPSS members (especially Jim Brewer, Phil King, Charlie Hanner, Dan Wagner, Martin Rabenhorst, Philip Zurheide, and Cary Coppock so far), and also from NRCS, the University of Maryland, SSSA, and some folks at Virginia Tech (Lee Daniels and Zenah Orndorff) and from Leigh Sullivan (Chair of the International Acid Sulfate Soils Working Group) and from others I am sure that I have forgotten to mention. I need much more help in the coming days, weeks, months. I will have some requests for needed help from MAPSS at the Feb. 11 meeting. A major job that has only just begun is to prepare a well documented and illustrated Guidebook for the field trip. I would like this to include information on the soils, geology, geography, and perhaps some background of the history of the human habitation, of our region. Does anyone know of some good, ideally already prepared, information that we could use. Would someone like to volunteer to prepare some parts of this information? I particularly need help with some maps. It is likely that such information will be useful as well for field trips in the future that MAPSS or other organizations may want to do.

I continue to need subject matter for future Pedologue issues. I ask that members or anyone please send me stuff that may be of interest and announcements of coming events of interest to MAPSS members etc.

State Land Judging Contest

Jim Brewer, on October 25, submitted the following story and great picture of Carl Robinette, see next page, instructing high school students to prepare them for the contest.



Jim's message was: "Last Saturday Carl Robinette, Joe Kraft and I conducted the State Land Judging Contest for 2005. We had 27 students from 7 high schools. MAPSS awarded \$100 to Ben Murphy from Urbana HS, \$75 to Katrina Hendershot from Clear Springs HS, and \$50 to Emily Gowin from Urbana HS. The contest went very well considering the wet weather. It was held on a dairy farm in Carroll County owned by the Roach family."

Jim added in a separate message "Clear Springs High School from Washington County won 1st place, Walkersville High School from Frederick County won 2nd place, Fort Hill High School from Cumberland County won 3rd place honors."

The Fall, 05, Northeast Soil Judging Contest.

The following story was developed by slightly modifying one sent to the editor by Dr. Martin Rabenhorst shortly after the contest took place.

On October 14 and 15, the Northeast Regional Soil Judging contest, hosted by the University of New Hampshire, was held near Durham, NH. Among a field of eleven teams from seven universities, the University of Maryland had yet another strong finish this year with their "A Team" placing second and their "B Team" placing fourth. The practice and contest pits featured an interesting assortment of soils on glaciated landscapes, including Eutrudepts and Endoaquepts formed in glaciomarine sediments, Dystrudepts formed in dense till and Udipsamments and Duraquods formed in outwash deposits.

Individual honors for the 3 pits judged on Friday went to the following individuals: Joe Ringler (1) Ohio State University (OSU); Nate Socha (2) University of Rhode Island (URI); Sarah Shoppell (3) URI; Jason Martin (4) UMD; Jesse Dotterer (5) OSU; Laura Pallandre (6) UMD; Elizabeth Kulp (7) Delaware Valley College (DVC); Pedro Mayorga (8) UMD; Jackie Cozens (9) DVC; Julie Hill (10) UMD. Due to serious local flooding, contestants could only access one of the two "group judge" pits on Saturday morning. Notwithstanding the rain, the UMD A and B teams finished 1st and 2nd in the group judging! Overall (combined) team rankings put Ohio State University in 1st place

followed by the University of Maryland (A Team) in 2nd and the University of Rhode Island in 3rd. Other participating teams included Delaware Valley College, Pennsylvania State University, University of Maine, and Wilmington College of Ohio. The top three schools look forward to participating in the 41st National Soil Judging Contest next March to be hosted by California Polytechnic University in San Luis Obispo, CA.

The regional contest was primarily organized and run by NRCS soil scientists Steve Hundley and Don Keirstead. See the accompanying photo (below) of the University of Maryland team provided by Dr. Rabenhorst.

Caption for photo (below) of the Maryland team taken in the field in New Hampshire: Front row: Jennifer Stewart; Julie Hill (10th place individual); Jason Martin (4th place individual); Rebecca Blank (Asst. Coach); Back Row: Martin Rabenhorst (Coach); Laura Pallandre (6th place individual); Shawn Smith; Pedro Mayorga (8th place individual); Rob Norris.



The team needs financial support to go to California for the National Contest in March. MAPSS will be helping, but support from individuals, and other organizations, is being sought as well. Send checks made out to The University of Maryland Soil Judging Team to Dr. Martin C. Rabenhorst, Dept. of Natural Resource Sciences and Landscape Architecture, University of Maryland, College Park, MD 20742-4452.

A post-active acid sulfate soil re-visited -- and to be visited again on July 7, 06.

This fall I (the editor) decided that I wanted to find again a soil profile that Dan Wagner and I examined and photographed in the spring of 1978. A couple of Dan's pictures of the profile were published (Wagner et al. 1982) as color plates in the SSSA Special Publication No. 10, entitled Acid Sulfate Weathering -- which publication has now been out of print for several years. The profile was discovered in 1976 as a cut on a steep slope (about 25%) behind a building at SERC (Smithsonian Environmental Research Center) headquarters and was then used in 76 as a practice pit for the Northeast Regional Collegiate Soil Judging Contest that the University of Maryland hosted on lands of the Smithsonian facility -- in Anne Arundel County that year. The pit was already excavated into the hill for a recently constructed, at that time, small cement block building. The hole behind the building (now building 30A at SERC) was not filled after the construction of the building was completed and it was a nice large pit -- into which a number of student judges could fit at one time, thus a good, already-dug, soil judging practice pit. We considered the soil, forested at the time, to have previously been cultivated, and we thought of it as a severely eroded Collington soil (may now be Annapolis). That the soil was not forested in the 1930's was confirmed when we graded papers for the 76 contest in a building there at SERC. There was an air-photo from about 1938 on one wall of the room where we graded contest papers that showed that the hillside was probably a pasture for farm animals when the photo was taken.

In 76 we soils people at the University were only just beginning to learn about acid sulfate soils. Dan had started to examine and recognize them as a side aspect of his M.S. thesis work. By 1978 Dan was starting his Ph.D research on upland acid sulfate soils and he and I visited the profile again at that time and found by augering in the floor of the excavation in front of the profile that the un-oxidized zone, *sulfidic materials*, were at a considerable depth below the floor of the pit. We started to realize that the soil was a post-active acid sulfate soil by the terminology that we use today. At that time we may have called the soil a pseudo acid sulfate soil using terminology that we picked up from the Dutch acid sulfate soils workers of that time.

Now in 2005 I wanted to find the profile again because I wanted to use it, or one like it nearby, as an example of a post-active acid sulfate soil for the WCSS (World Congress of Soil Science) acid sulfate soils trip, July 6-8, 06. That trip is scheduled to visit to this site on the afternoon of Friday, July 7, 2006. I was so confident that I could find such a soil here that I had already contacted Patrick Megonigal at SERC for permission to bring the tour to SERC next summer on that date.

On Friday, Oct. 28, I went to SERC with some digging tools. Patrick walked with me across the draw behind the SERC headquarters to the buildings on the other side, several of which buildings are new since 1978. I wanted to explore the steep slope where I thought I might find soils of the kind I was looking for, with jarosite near the base of their argillic horizons, on the steep slope that leads up toward the fire tower there on top of the hill. We turned to the left after crossing the draw and followed the small road that leads across the slope with buildings into the hill up-slope to the right of the road -- that is not paved beyond the last of the buildings. As we got to the last of the cement block

buildings, 30A and 30B, I thought I recognized them as looking like the building where the profile of 76-78 occurred and when we looked behind them the excavations into the hill were still there, although now grown over with some brush and covered with an accumulation of leaves. The best excavation is now behind building 30B, which I now think didn't exist in 78. When I dug through the litter/leaves at a depth of about one meter from the surface of the soil at the left end of 30B, the further-most building, I was thrilled to find some jarosite concentrations right away

Patrick and I had some discussions about jarosite and glauconite and other aspects of acid sulfate soils as we augered a couple of holes with a bucket auger up-slope from the top of the excavations as we found more jarosite beneath the thin argillic horizon. We talked about how we could make an excavation so that trip participants next summer could photograph the profile (it will be difficult in July with foliage on the trees and the buildings in the way too).

I told Patrick that I wasn't expecting to dig a pit on this day and after an hour or so we walked back to his office and split to eat lunch etc. I told him I would be back another day to do some more digging and possibly also auger to try to find the depth to underlying *sulfidic materials* etc. However, after I ate my lunch on the tailgate of my truck, I went back to building 30B and collected a couple of samples with jarosite in them to check on the pH (it turned out to be about 3.9 for both samples).

On subsequent days I communicated with Dan Wagner to see if he had a description of the soil we photographed 1978. He found the old soil judging sheets on the soil from 76. We made plans to go together to the soil on Nov. 11, which turned out to be Veteran's Day. When we did go on that day, fortunately some SERC professionals were at work. They helped us to get permission from the SERC police force to let us go again to the soil as Patrick was out of town – although he had provided me with an e-mail message that I had printed to show that he had given us his permission to dig.

When Dan and I got to the buildings in front of the soil that we wanted to look at, we decided that the profile that we examined years ago must be behind Building 30A, as Building 30B was newer. Unfortunately the excavation behind 30A is no longer as good as the one behind 30B as it has been partially filled in -- either naturally or by filling from when the excavation behind 30A was made. We found a tree behind the back left corner (looking up slope) of 30A that we thought might be the one that appeared (much younger then) in some of our photos of the soil profile from back in 78, so we started digging and augering there. We decided to auger to find the depth to the un-oxidized zone as we had forgotten how deep that was from our examinations in 78. Fortunately Dan had his auger extensions for his bucket auger so we could go down several meters and we could start at the base of the already exposed profile. Jarosite was present both in the exposed profile beginning at a depth of about 70cm and it continued to be present in most of the samples we extracted with the auger. We hadn't gone far down beneath the bottom of the pit when we had to stop and admire the jarosite as it appeared in the auger when we extracted one bucket full. It was absolutely beautiful to our beholding eyes, so good that we stopped and took the pictures that appear on the following page. We augered deeper

and found the un-oxidized zone at a depth of about 4.5 meters from the soil surface, very close to the depth where Dan predicted, from where we were on the slope, that we would find it. We wondered how long ago the jarosite in the profile formed – many millennia ago we think, perhaps even millions of years ago. Will it be possible to date the time when it formed by Argon isotope methods as an Australian soil scientist at the University of Queensland claims to have done for some upland soils in Australia? To do that we will need to purify the jarosite away from the glauconite in the soil materials. The glauconite presumably would date back to the time that the sediments in which this soil has developed were deposited in Eocene or late Cretaceous time – many tens of millions of years before present. We hope we have excited your interest in this soil. For continuation and elaboration of this story, come on the WCSS acid sulfate soils field trip next summer and/or attend the paper that we will present on post-active acid sulfate soil at the WCSS in Philadelphia.



Soil Beauty. Dan Wagner displays jarosite (pale yellow) occurring with iron (hydr)oxides in glauconitic (green color) soil materials extracted from a post-active acid sulfate soil behind Building 30A at the Smithsonian Environmental Research Center in Anne Arundel County, MD – a soil to be visited on the WCSS acid sulfate soils field trip on the afternoon of July 7, 2006 and to be talked about in a paper that he and I and other co-authors will present at WCSS in Philadelphia.

Reference:

Wagner, D. P., D. S. Fanning, J. E. Foss, M. S. Patterson, and P. A. Snow. 1982. Morphological and mineralogical features related to sulfide oxidation under natural and disturbed land surfaces in Maryland. Chapter 7 (pages 109-125) in Acid Sulfate Weathering, Soil Sci. Soc. Am. Special Publication No. 10, J. A. Kittrick, D. S. Fanning and L. R. Hossner (Eds.), SSSA, Madison, WI.

Old Time Soil Scientist, Frank Z. Hutton, Sr., Who Worked in Soil Survey (including on Maryland's Eastern Shore)

Editor's Comment on this story. Frank Z. Hutton Senior was one of the early soil survey soil scientists. I met him on a soil survey field review in Worcester County, MD, in 1964 if my memory serves me correctly, my first year at the University of Maryland. Dick Hall was in charge of that Worcester Co. survey and he invited old Mr. Hutton, who Dick worked with, to participate in the review and he came along one day or so and may have come to a dinner on one of the nights of the review that Dick and his wife hosted at their house in Snow Hill. Other participants in the review as I recall were Merle Hershberger, State Soil Scientist at the time and Dr. Earle Matthews who was Hershey's Assistant and who was the senior author of a lot of the county soil survey reports in those days, although he mainly worked in Hershberger's office as a writer. Also Jim Pomerening, my colleague and old friend (we were fellow students at the Cornell and we still exchange Christmas letters – he now lives in Las Vegas, NV) was on the review as the Maryland Agricultural Experiment Station soil survey representative. Jim left MD in 1965 to take a position at Pomona State Polytechnic University in Pomona CA.

This story was developed (put into MS-Word form) by Fred Gilbert, former State Soil Scientist of New York, who is retired from USDA SCS- NRCS. Fred has also written stories of two other elderly soil scientists (now in their 90's, but still going), Frank Z. Hutton, Jr. (who was a main source of information on his father) and Marlin G. Cline (Emeritus Professor at Cornell, who was one of my favorite professors at Cornell when I was a student there in the 1950's). These stories were forwarded on to me by Jim Brewer and Phil King. I expect to put the stories about Hutton, Jr. and Cline in subsequent Pedologie issues.

FRANK Z. HUTTON, SR., AN AUTOBIOGRAPHY

Tyrone Goddard and Fred Gilbert interviewed Frank Z. Hutton, Jr. at his home in Bluefield Manor, Auburn, New York on August 11, 2005. Frank is 90 years old and his memory is excellent. We took notes and attempted to record our conversation in hopes that we could share his story with others. Frank's father, Frank Z. Hutton, Sr. was one of our earlier field soil scientists. Before his death according to Frank Jr., he wrote the following autobiography. The following is that text.

Frank Z. Hutton Sr. studied to become a school teacher under James Gosnold at Lewisburg, York Co, Pa. After passing the county examination, he taught school two years in the schools of Fairview Township, York Co., Pa. Then he decided to study Agriculture. In order to enter the Pennsylvania State College, he took the preparatory

Course which was given at the College at that time. He entered College with the class of 1912.

After graduating in 1912, he took the civil service examination for a soil scientist in The Bureau of Soils and Chemistry (*Pedologue editor's note – I believe the word order should be reversed here – Chemistry and Soils, or more likely it was just the Bureau of Soils when Hutton Sr. was first hired*). He received his appointment to map soils at Springfield, Missouri with Henry Krusekoff, the State man. He worked for the Bureau of Soils and Chemistry in the North during the summer, and in the south during the winter. In the spring of 1914, he married Carrie May Sloat and took her with him to Lamure Co., North Dakota. He worked there until October, then was sent to Cohoma Co., Mississippi. Frank Hutton, Jr. was born April 23, 1915. In June, the family moved to Ripley Co., Missouri to work with Krusekoff during the summer. From Ripley Co. he was transferred to Arkansas to finish a county that was started the year before, but not finished because the soil scientist resigned. I was then sent to North Dakota, with headquarters at Forman where Alvadee was born June 15, 1917. We finished the county and wrote the report at Grand Forks, North Dakota. I was then transferred to Mendenhall, Mississippi for the winter. The following summer, I transferred to map soils in the Red River Valley. I finished that report late in the autumn after the area wintered up. I transferred back to Mendenhall to finish the county and write the report on the soils and agriculture of the county. From Mendenhall, I was sent to Toledo, Ohio to finish the county there that was started the year previous. After finishing mapping the soils and writing the report on the county at Toledo I resigned from the Bureau of Soils and Chemistry to go into the coal and feed business with my father-in-law.¹ I remained in the coal and feed business and later added lumber and a planing mill to the business. Later my partner quit the lumber and feed business to go into the Concrete Burial Vault Business with his son, Paul Sloat of Philadelphia, Pa.

In the years of the depression, 1929-1930. During the depression years, my lumber yard was under water from the highest flood of the Susquehanna River ever known at New Cumberland, Pa. (1931). About one year after the flood, the lumber yard caught fire and burned to the ground except the office, scale shed and my 6 ton truck. I was then out of business. I got a job at the Army Depot at New Cumberland and hauled coal from the mines as I had time.

I started working at the Army Depot as a packer. Later I was transferred to a checker. When I became a checker, I got my Civil Service rating back. Not long after that, the Depot received a request from the Soil Conservation Service that I be transferred to the S.C.S. and ordered to Sutton, West Virginia to map soils. Now I was back at my job as a Soil Scientist.

I worked in West Virginia about a year and a half, when the request came through to transfer me to the Eastern Shore of Maryland. Such poor work was being done in mapping soils that an older man was to take charge there. I transferred to Salisbury, Maryland, where I worked until I was automatically retired at age 70 years. But there was still so much work to do, and no one trained to take my place, so the State of

¹ "Dad also worked in South Carolina with Bill Latimer who later was the soil inspector here in the North East part of (the) U.S."--Frank Z. Hutton, Jr August 2005.

Maryland asked me to work for it. I transferred and worked five years for the State of Maryland under Social Security. Working under Social Security helped me out financially, as my civil service retirement was not enough for me to live on.

My other children, Alene, was born Nov. 14, 1925; Paul S. Hutton was born Sept. 23, 1927; William H. Hutton was born April 8, 1934—all at 413 Eutaw St., New Cumberland, Pa.

Frank Z. Hutton, Jr. is a Soil Scientist employed by the S.C.S. in the State of New York. Alvadea married John Adams. She and her husband publish the U.S. Lady, a magazine designed for the armed forces of the United States. They live in Washington, D.C. Alene and her husband Enos B. Sage live on a dairy farm near Bradford, Pa. They raise purebred Ayrshire dairy cattle. There are a number of oil wells on their farm. Paul H. Hutton is an attorney, located at Republic, Washington. Paul also operates a range of beef cattle. William H. Hutton lives at Plainfield, New Jersey and is employed by the U. S. Post Office as a mail carrier.

Now that I retired, I live with my children. My main headquarters is here at Bradford, Pa. with Alene and Enos B. Gates. During the summer months, I visit my other children.

Alene's note: Except for 1 or 2 corrections, this is just the way Dad wrote it—probably around 1968. He became ill with pancreatic cancer the summer of 1968 and died Feb. 12, 1969.

(Entered into MS-Word by Fred Gilbert August 12, 2005 from a copy obtained from Frank Hutton Jr. August 11, edited by Frank Jr.)

Calendar of Coming Events

Feb. 11, 2006. MAPSS membership meeting and election of new officers, Delaware Agricultural Museum, Dover, DE. The meeting is scheduled to start at 10:30am, however the room where the meeting will take place will be available at 10am. It seems that lunch from Where Pigs can Fly will be available at \$5 per person and free to student members with MAPSS picking up the remainder of the costs. In addition to the business meeting and election of new officers, it appears that there will be some short presentations by certain MAPSS members – this is still being worked out.

Directions to DE Agricultural Museum and Village:

Coming into Dover from the West, on Rt. 8:

- At second stop light coming into Dover, turn left onto Kenton Rd. (you'll see a WaWa store and a McDonald's on the right just before the intersection)
- At second stop light on Kenton Rd., turn right onto College Rd. (you'll pass the fire house on the right)
- Go through first stop light, and stay on College Rd around the back side of Delaware State University.

- At the next stop light, at the Rt. 13 intersection, turn right (going South) onto Rt. 13.
- The first building on the right is the Agriculture museum.

Coming into Dover from the North, on Rt. 13 Southbound:

- You'll pass Dover Downs on the left, Delaware State University on the right, and the stoplight at College Rd. (there is a small shopping center with an Acme store on the left). On the right, the first building after the stop light is the Agriculture museum.

Coming into Dover from the South, on Rt. 13 Northbound:

- Come North past State Street. On the right, see a McDonald's, Shucker's Pier 13 restaurant, Pep Boys.
- Get in the far left lane and make a U turn at the stop light at College Rd. That puts you on Rt. 13 Southbound, and the Agriculture museum is the first building on the right.

July 6-8. WCSS acid sulfate soils field trip in the Mid-Atlantic/Chesapeake Bay region, see www.18wcss.org page 21. **(Editor's Plea – please, as many as possible, sign up for this trip. The deadline for signing up has been extended to Feb. 1, 2006, to try to get to the minimum number for running the trip, which has been set at 30. It is now possible to sign up for the trip without registering for the Congress, but those who register for the Congress will have preference to go on the trip if the maximum number for the trip, 45, is exceeded -- regardless of when you sign up for the trip).** The trip starts on the evening of July 6 at the Philadelphia Airport Holiday Inn, just off I-95 in Essex, PA. As of Jan. 17, only 11 (from the whole world including Gary Jellick of MAPSS) have signed up. If you have questions, contact Del Fanning who is leading the trip. Others have indicated that they plan to sign up. One problem is the need to pay at the time one signs up. This is a problem for those who are having their organization pay for their trip. Del is trying to get something worked out on this.

July 9-15, 2006. World Congress of Soil Science. Philadelphia, PA. www.18wcss.org