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Editor: Del Fanning, DelvinDel@aol.com or dsf@umd.edu

Assistant Editor: Barret Wessel, wesselba@msu.edu

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This document is the second issue of Volume 33, 2022.

In this issue:

- **Calendar of coming events, Future Articles** **Page 1**
- **MAPSS Officers 2022, beginning of 2023** **Page 2**
- **Editor's Comments** **Pages 2-3**
- **ASSISTANT EDITOR FLEES TO MICHIGAN** **Page 3**
- **UM and DU at 2022 National Soil Judging Contest in Ohio** **Pages 4-7**
- **MAPSS FIELD DAY & MEMBER MEETING, AUG. 16, 2022** **Pages 8-12**
- **UM Soil Monolith 22, Anthill on Beltsville silt loam, plus** **Pages 13-21**

Calendar of some coming events

Oct. 14, 2022. Northeast Regional Collegiate Soil Judging Contest, hosted by Bloomsburg University, Columbia County, PA.

Nov. 6-9, 2022. ASA-CSSA-SSSA 2022 Annual Meeting, Baltimore, MD. [About | ASA, CSSA & SSSA International Annual Meetings \(acsmeetings.org\)](#)

March 26-30, 2023. 9th International Acid Sulfate Soils Conference, University of Adelaide, Adelaide, Australia. <https://set.adelaide.edu.au/acid-sulfate-soils-centre/9th-international-acid-sulfate-soils-conference>

Future articles etc.,

Pedologue needs articles, pictures, poems, cartoons, letters to the editor or other things soil scientists and/or other readers may be inspired to submit. Please submit such items to the editor (preferably to DelvinDel@aol.com, alternatively dsf@umd.edu). Be an author, support your newsletter! It's a way to promote your work, our community, and things we all need to know about soils and the environment.

<p><u>2022 MAPSS Officers:</u> President: Ben Marshall Past President: Susan Lamb President Elect: David Ruppert Vice President: Josh Stallings Treasurer: Sarah Roberts Secretary: Jenwei Tsai Member at Large to serve 2 years: Evan Park Member at Large to serve 1 year: Gary Jellick Ex officio Member Phil King</p>	<p><u>Board of Directors</u> John Wah to serve 1 year Jim Brewer to serve 2 years Diane Shields to serve 3 years <u>Chairs of Standing Committees</u> Finance: Vacant Constitution and By-Laws: Gary Jellick Membership and Ethics: Nominations: Susan Lamb Education and Public Relations Delvin Fanning Certification Vacant</p>
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Editor’s Comments: It was decided at the Membership Meeting on 8/16/22 that the present set of officers as listed above will remain in office until the next membership meeting, likely to be in March, 2023.

Although attendance/participation was a little less than what was hoped for, in part perhaps because parking at the farm where the field part of the event took place, was advertised as limited, it was great for those who did attend to see each other again and to see the soil profiles exposed at the site on the farm where the planted hemp crop was growing as displayed in the report on the meeting, see pages 8-12 later in this issue.

Note that Assistant Editor Barret Wessel has a new e-mail address as a result of his taking a new, tenure-track position as pedologist at Michigan State University where he is busy full filling his duties of his new position. We, his fellow MAPSS-members, hope that he remains active in MAPSS and continues to be Pedologue Assistant Editor, but we suppose that he may want to become involved as a professional soil scientist with other organizations in Michigan and/or the Mid-West or elsewhere. We are very thankful for all he has done for MAPSS, helping to get all Pedologue issues, including those from the last century that were previously not electronically available, on the MAPSS web site and in getting Pedologue recognized by the Library of Congress – wonderful achievements. Thank you Barret! Michigan State University is very fortunate to have you on their staff. We sympathize with Mary Washington University for losing you, perhaps another MAPSS member may take up the reins that Barret left there. Although Barret’s appointment there was temporary, I’m sure they would like to have him back.

I report here about a new book, of which I received a hard copy, as a gift for supplying information about, among other things, Dr. C. C. Nikiforoff, Niki, to the author of the book, Dr. Alfred Hartemink, presently Professor and Chair of the Soils Department at the University of Wisconsin in Madison, Wisconsin, the Department of which I was a sometimes graduate assistant when I worked for my Ph.D. there, prior to my coming to UMD in 1964, long before Hartemink, originally from the Netherlands, came to Wisconsin. The book is entitled “Soil Science Americana, Chronicles and Progressions 1860-1960”, published in 2021 by Springer Verlag. 623 pages.

The book emphasizes the pedology branch of soil science, but from a practical, mainly agricultural, point of view, and covers the development of soil science internationally, but from an American perspective. The development of the International Soil Science Society, now the International Union of Soil Science, and its meetings from the first in Washington, DC in 1927 thru its 7th Congress at the University of Wisconsin in 1960 receives much attention in the book, as does the interference of world political events, many associated with the first and second World Wars. Many of the earlier chapters are about very influential American soil scientists, two in particular, Emil Truog of Wisconsin and Charles Kellogg, who headed the USDA soil survey program for many years following Marbut (who also gets much attention), who died in China in 1935 after crossing Russia. Another whole chapter (Chapter 5) is devoted to Roy

Simonson, MAPSS first honorary member and for whom our annually given scholarship to an outstanding undergraduate soil science student is named. Roy is mentioned in many other places in the book as well, with recognition of his authoring and editing role in the publication of the 1938 Yearbook of Agriculture entitled Soils and Men.

I hope that many MAPSS members will read this book to learn more about the history of soil science. The book was especially interesting to me because I knew many of the individuals whose contributions are described, as well as their upbringing, many starting as farm boys. Almost all of the soil scientists mentioned or described are men, although in many cases the families from whom the men were descended as well as their spouses and their children receive attention too, and some of these related individuals were employed by Hartemink as sources of information in the book about the soil scientists written about.

The book is available thru internet sources, Amazon and Springer Verlag. I am not a good internet shopper and I suppose many who would like to read the book will would like an electronic copy.

Hartemink sent me the following regarding the acquisition of the book.

The book is available from Amazon (both hard copy and online) and from the Springer site:

<https://link.springer.com/book/10.1007/978-3-030-71135-1>

ASSISTANT EDITOR FLEES TO MICHIGAN, by Barret Wessel

Pedologue Assistant Editor Barret Wessel has moved to his fourth state in as many years, reportedly to escape the high Mid-Atlantic cost of living (but also to start a tenure track job). He earned his PhD in mid-2020, jumping into the pandemic job market, and faced job loss due to budget cut after budget cut over the past few years. This recent move is likely to be long-term, and returns Barret to the state he spent his childhood in. He will be working as Assistant Professor of Soil Science in the Department of Plant, Soil and Microbial Sciences at Michigan State University (MSU), the position previously held by Jim Crum and Henry Foth before him. Barret's teaching includes Fundamentals of Soil Science (~400 students annually) and an upper-level course in Soil Resources (~40 students annually). Additionally, Barret intends to launch a Soil Judging team at MSU, bringing the activity back to campus for the first time in decades. His research program is still developing but will focus heavily on the management of wetland and coastal environments, as well as the science of teaching and learning about soils. These tasks are likely to occupy Barret's time and while he may still occasionally submit something to Pedologue, this will be his last issue as Assistant Editor (barring the formation of MAMAPSS, the Michigan and Mid-Atlantic Association of Professional Soil Scientists).

Additional Editor's Comment, 9/9/22 – Note for those who want to communicate with Barret by e-mail, that his new e-address is given in the masthead at top of this Pedologue issue, probably the last issue of which he will be listed as Assistant Editor.

I had hoped to provide the list of the fall semester soils research reports at UM in this issue, but I have found that the list has been supplied by the organizer, Dr. Rabenhorst, to MAPSS members. Those reports, available by Zoom, take place on Fridays, 11 am-Noon, of the Fall semester except for the weeks of the NE soil judging contest, the ASA-SSSA meeting in Baltimore in November and the Friday of Thanksgiving week. On Nov. 18, Ed Landa and I will report on the anthill monolith and other ant hills as we describe in our report in this issue.

Strong Finish for UMD and UD Soil Judgers at 2022 National Collegiate Soils Contest in Ohio April 26, 2022 – Martin Rabenhorst (mrabenho@umd.edu) and Jocelyn Wardrup (wardrup@umd.edu)

The University of Maryland (UMD) Terrapins had another “Final Four appearance” at the 60th National Collegiate Soils Competition held on April 23 and 24, in Marysville, Ohio where it was hosted by The Ohio State University. Additionally, the University of Delaware (UD) followed closely behind taking 5th place – a notable performance for the newly created team at their first appearance ever at a national soil judging contest. The competition was stiff among twentyone universities representing seven regions from around the country. The practice pits included an interesting variety of soils that were mostly Alfisols, Mollisols and Inceptisols, many of which were wet soils with plenty of redoximorphic features. Most of the practice sites were on the private lands of farmer-cooperators. The individual portion of the competition was held on the grounds of the Myeerah Nature Preserve, near Bellefontaine, OH, (pronounced “Belle-Fountain”), where students examined Argiudolls formed in outwash and also in pedisediment over lacustrine deposits, and also an Epiaquept formed in alluvial deposits. The group portion of the contest held on Saturday was on the grounds of Camp Shiffer, where students examined a Hapludalf formed in outwash and an Endoaquoll on a floodplain formed in alluvium over lacustrine materials. In the group judging portion of the contest, UMD placed 6th. The group scores combined with the individual scores for the overall team rankings had UMD in 4th place, behind Virginia Tech (1st), NC State (2nd) and Univ. of Wisconsin, Platteville (3rd). UD came in a close 5th place! All three of the UD soil judgers placed in the top 20 individual finishers out of 84 participants for the individual portion. Duke Williams, a UD senior was the team’s highest scoring judger coming in 11th overall. For UMD, Madelyn Haines was the highest individual scorer coming in 13th overall. The performance of the Terrapin soil judgers was especially remarkable, given that this was a rebuilding year after graduation of all the 2019 team followed by 2 years without soils competitions due to COVID. UMD will have some of these soil judgers returning next year for the regional hosted by Bloomsburg University. We are very proud of our Mid-Atlantic Maryland Terrapins and Delaware Blue Hens.



2022 UMD Soil Judging , see lower portion of previous page, (L to R): Jordan Kim (Asst. Coach), Ashlyn Hill, Mariano Dessardo, Sonya Matlack, Prof. Martin Rabenhorst (Coach), Hayley Welzant, Jack Murphy, Madelyn Haines, Isabelle Dallam, Jocelyn Wardrup (Asst. Coach).



2022 UD Soil Judging Team, see above, (L to R): Zoe Bara, Katie Mina, Morgan "Duke" Williams, Phillip King (coach), Jenwei Tsai (coach).

See next page for more picture of the UD and UM teams.



UMD and UD soil judging teams getting ready to review notes after practicing together at a site near Marysville, OH.



UD at a practice pit weathered in glacial till, L to R: Phillip King (coach), Jenwei Tsai (coach), Katie Mina, Zoe Bara, and Morgan "Duke" Williams.



UMD going over a practice team judging pit formed in outwash. Shortly thereafter the domestic livestock became very interested in the soil judging gear...

MAPSS (in person!) FIELD DAY AND MEMBERSHIP MEETING, TUESDAY, AUGUST 16, 2022, report by Del Fanning

For the first time since the beginning of the pandemic (when was that?), courtesy of MAPSS President Ben Marshall and multiple assistants, an in-person field day followed by a dinner and a membership meeting was held on the afternoon and evening of Tuesday, August 16, 2022 at Fingerboard Hemp Farm with Dinner/Business Meeting at Whiskey Creek Gold Club on their golf course in the area of Ijamsville, Frederick County, MD. The weather was almost perfect for being outside in August in Maryland and about 25 MAPSS members and associated presenters and friends showed up to enjoy the day as white clouds floated by in an otherwise clear blue sky during the afternoon and early evening.



At the farmstead, Dawn Gordon (farm owner) discussed how she started her hemp farming and what she grows. Darryl Glotfelty, Western Maryland farmer, discussed hemp farming experience and issues, and MAPSS member and NRCS soil scientist Valerie Cohen discussed some issues dealing with heavy metals and other matters.

After dinner Dr. Nicole Fiorelino, Extension Specialist of the UM Department of Plant Science and Landscape Architecture, talked about research programs at the University (some federally supported) dealing with hemp and programs to minimize the levels of active psycho-affecting ingredients in hemp as affected by the hemp variety and harvest time etc. There apparently are problems in growing hemp containing levels below a federally approved upper content limit for marketing.

One can educate one's self about hemp/cannabis from the Wikipedia web site,

[https://en.wikipedia.org/wiki/Cannabis_\(drug\)#Hash_oil](https://en.wikipedia.org/wiki/Cannabis_(drug)#Hash_oil)

A few pictures from the Aug. 16 event are presented in this article. Figure 1 is a picture of the soil profile called Linganore (soil series) exposed in a pit at the top of the slope showing the planted hemp plants growing on the soil of a back field of the farm on the afternoon of the event in Figure 2 on the following page. A close-up of one of the plants at the top of the slope is shown in Figure 3. According to the official description of the Linganore soil series, Linganore soils are Loamy-skeletal, mixed, active, mesic Ultic Hapludalfs. This profile did not appear skeletal. The following is a quote from the official series

description. “The Linganore series consists of soils that are moderately deep to a paralithic contact or to schist or phyllite bedrock. They are well drained soils on uplands. They formed in residuum from hard micaceous schists and phyllites. Slopes range from 0 to 55 percent. Mean annual temperature is 51 degrees F. and mean annual precipitation is 40 inches.”



Fig.2 shows carefully planted and cared for hemp plants available for tour participants to examine on the day of the event. Most of these plants were about 2 feet tall.

This article continues on the next page.



Figure 3 shows the top of one of the plants shown in Fig.2. The fingers of the hand in the photo are a little over 1 cm, about half an inch, wide.



Figure 4, photo by Dr. Rabenhorst, shows MAPSS member Tim Gerber examining the soil profile exposed at the bottom of the slope on which the hemp plants are shown growing in Figure 2. This soil is shown in more detail in Fig. 5, below.

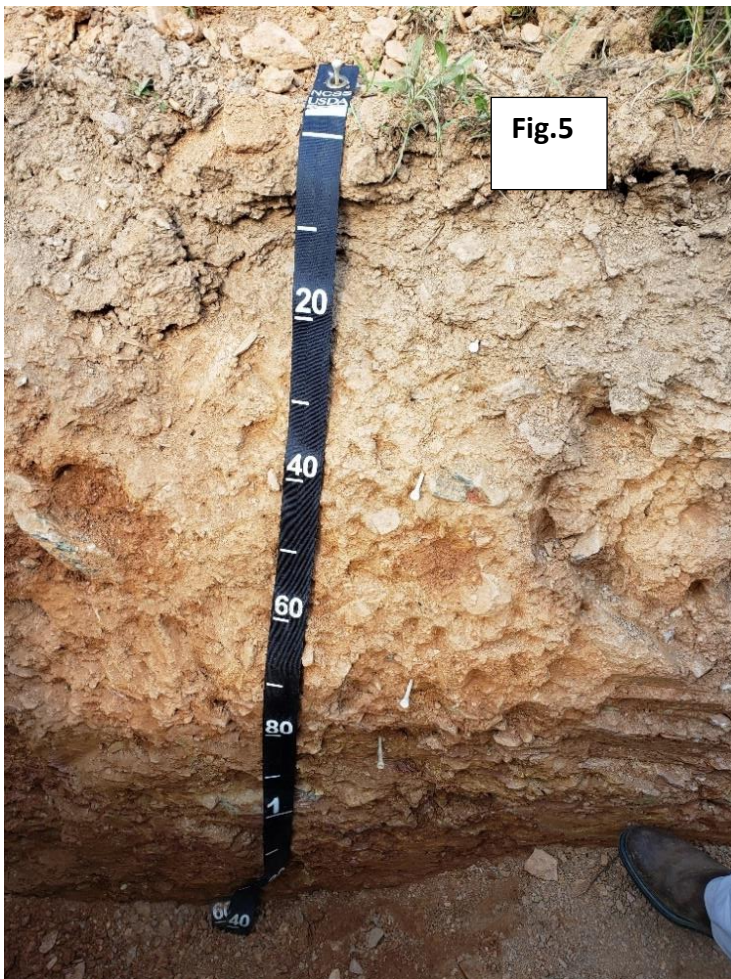


Figure 5, (also from Dr. Rabenhorst) This profile had a much yellow, less red, hue than the profile near the top of the slope, shown in Figure 1. The horizon boundary near the bottom of the profile shown in Figure 5, at about 80 cm, may represent a paralithic contact. Depth scale in cm.

For Fig. 6, the last of this article, see the next page.



Fig. 6

Figure 6 was taken by Barry Glotfelty, a MAPSS former President (what year?) of Del Fanning (right) and Marty Rabenhorst (left) looking at a picture on Fanning’s smart phone taken by Marty, probably the one in Figure 1. Del appreciated his ride to the event with Marty. On the way we discussed how we met in the summer of 1972 when Marty (as an undergraduate employee of UM soil survey lab of Dr. Foss) went with Del (who had recently returned from a one-year sabbatical leave in Germany) , shortly after Hurricane Agnes that summer, to fill out a soil judging card for a judging practice pit of a Manor soil in a borrow pit along Rt. 29 in preparation for training the UM soil judging team for the contest that fall at Delaware Valley College in Bucks County, PA, a contest in which UM finished in first place with Marty as the first-place individual in the contest. Behind Marty in the picture is Carl Robinette, MAPSS honorary member and another former MAPSS President, who probably helped coach the first UM team to be a National Champion in the national contest at Virginia Tech in the spring of 1972, fifty years ago, a team coached by another MAPSS honorary member, John Foss, who now lives back in MD after retiring from being Chair of the Department of Agronomy at the University of Tennessee.

UM SOIL MONOLITH NO. 22

Anthill on Beltsville silt loam

By D. S. (Del) Fanning and E. R. Landa

INTRODUCTION: One of the narrow processes of soil formation considered in soil morphology, genesis and classification courses is pedoturbation (Fanning and Fanning, 1989, Chapter 8), soil mixing, which tends to make soils more uniform with depth and works against the formation of distinct horizons by other processes that form horizons by eluviation (e.g. E horizons) and illuviation (e.g. Bt horizons) or other horizon formation processes, although soil mixing can form distinct horizons -- such as Ap horizons, plow layers, by tillage by humans. The term pedoturbation was introduced by University of Wisconsin soil scientist, pedologist Francis Hole (1961), for soil mixing phenomena, and he recognized various forms of pedoturbation, depending upon the agent doing the mixing of the soil, such as faunalpedoturbation for mixing by animals, floralpedoturbation for mixing by plants, such as by tree throw of soil material clinging to roots of trees that are thrown over, roots and all, that can create a microrelief sometimes referred to as cradle knolls, and argillipedoturbation, mixing by the shrinking and swelling and stirring action of clay, as takes place in Vertisols, that can also produce a microrelief called gilgai. Such processes and phenomena were popular term paper topics for the soil morphology and genesis and classification course I taught at UM and I used to get many term papers about earthworms, ants and other topics related to pedoturbation. The one about the anthill monolith was special because it resulted in one of our more popular monoliths that has been displayed in the monolith display cabinet in the basement old wing of H. J. Patterson Hall since this monolith was constructed in 1973.

MONOLITH CONSTRUCTED BY: Wilber W. Newcomb and Calvin T. High (1973) as undergraduate students for a term paper project at the time they took AGRO 414 during the 1973 Spring Semester at the University of Maryland when I was the course instructor. The board on which the monolith is mounted has been repainted to black color and the labels on the monolith have been redone in recent years with the horizon nomenclature updated to current U.S. soil survey standards.

PICTURES/FIGURES: Fig. 1 is a picture of the anthill monolith taken by Ed Landa with his cell phone camera with the monolith



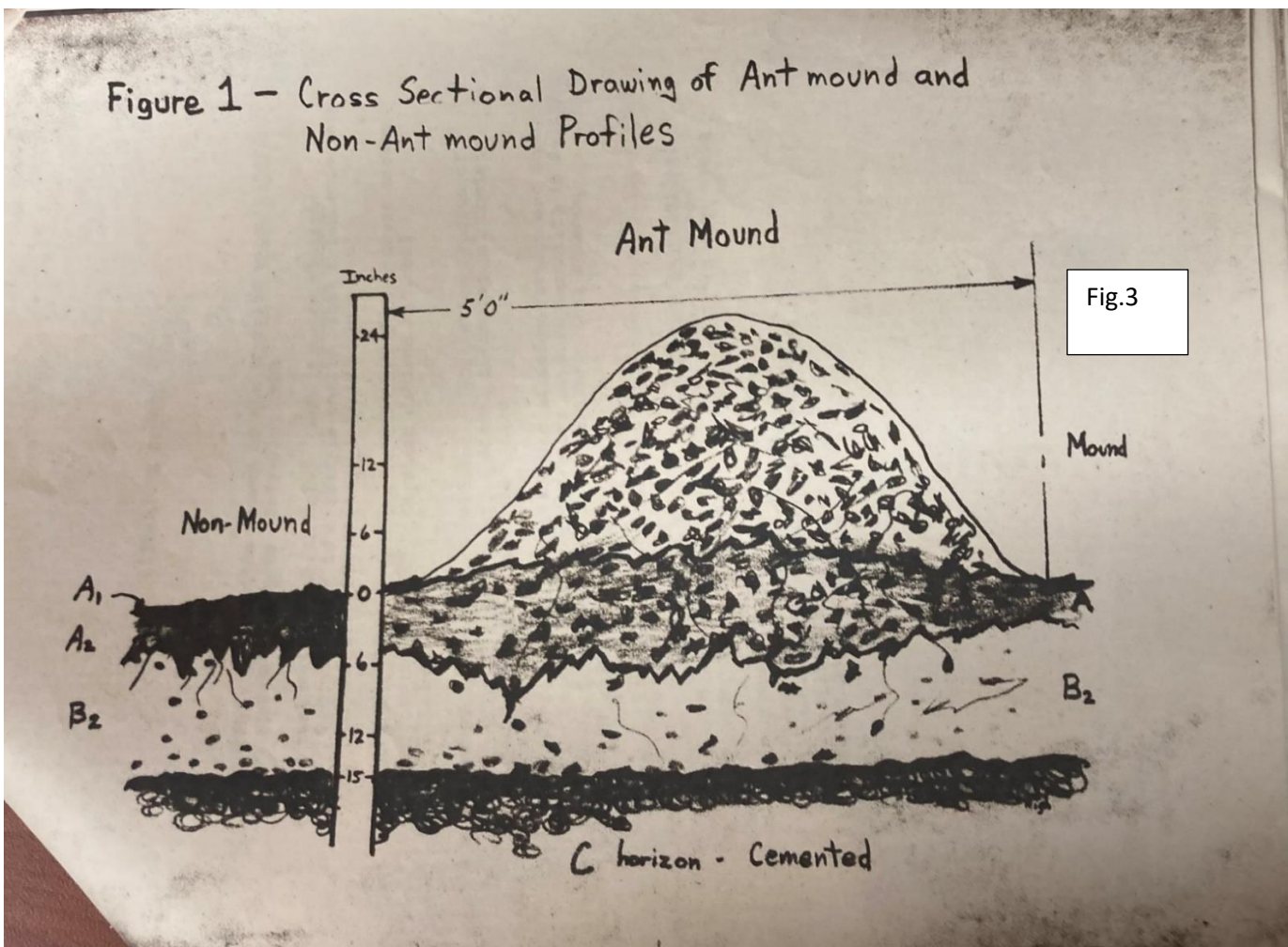
leaned against the basement wall of the hall in the old wing of H. J. Patterson Hall, across the hall from the monolith storage cabinet in which Monolith 22 is currently stored. The Fig. 1 picture resulted after an original image was cropped to show mainly the monolith and labeling on the display board after the image of the surrounding wall and floor was cropped away, but some of the wall and floor still appear in lower left of Fig. 1.

Figure 2, see below. This picture is a close-up of the top horizons of the monolith. Note the higher color chroma of the A1 horizon compared to the A2 (label for this horizon is hidden behind the finger that points to ant tunnel/channel) and A3 horizons below, which indicate that the A1 is probably more recently deposited material, probably brought to the top of the hill by ants the year the monolith was made from the E or B horizons beneath the hill, see Fig. 1 for colors of those horizons. The nail of the finger pointing to the ant tunnel /channel at the boundary between the A1 and A2 horizons is 12 mm across, showing that the bulk of the tunnels displayed are less than 1 cm across. The tunnels appear to be most well-formed in the A2 horizon. Beneath this horizon the tunnels appear somewhat collapsed compared to those in the A2.



A drawing of the cross-section of the anthill from which the monolith was taken is presented as Figure 3 (which was Figure 1 of the original term paper) on the following page.

Figure 3. This figure, presented below, was figure 1, drawn by the authors, Newcomb and High (1973) for their term paper about the anthill monolith. It is presented here as Figure 3 of this current paper. It is produced here from a photograph by Ed Landa of a Xerox copy of the page of the term paper showing the drawing. Note that the horizon nomenclature in the drawing is that used by the term paper authors. The horizon nomenclature on the monolith as currently displayed and shown in Figure 1 in this paper was assigned by Fanning by current U.S. soil survey standards. This figure shows the size of the anthill from which the monolith profile was taken as about 5 feet in diameter and about 2 feet high in the center of the hill -- above the original, pre-mound, soil surface. Pictures of the of the mound from which the monolith was taken are presented in Figures 8.2 (page 55) and 8.3 (page 56) of Fanning and Fanning (1989). The crude black marks within the mound and below it in the drawing apparently were mostly, if not all, intended to show the open channels/tunnels made and used by the ants. Most of these channels were about one cm in diameter. The channels do not appear to enter what the term paper authors recognized as the C horizon, which Fanning and others recognized as the fragipan, Btx horizon, of the soil as shown in the monolith labels of Fig. 1. This horizon was not chemically cemented as the statement on the horizon in the figure implies, but was dense and difficult to excavate, which was apparently recognized by the ants as well as by humans. Because this horizon could cause perched water above it, channels/tunnels within it would flood with water when the soil became saturated, not good for ants that might try to live within it.



ADDITIONAL INFORMATION:

Newcomb and High (1973) reported in their term paper, based on information they found, that the ants that constructed the anthill monolith were Allegheny mound building ants, *Formica exsectoides*. The following current 2022 quote below is from the web, Wikopedia.

“Like other field ants, the Allegheny mound ant builds **large mounds**, however this species tends to build some of the largest. Aside from the mounds, the ants also act as pests by killing vegetation within 40 to 50 feet (12 to 15 m) of their mounds. The ants inject formic acid into surrounding plants, killing small trees and shrubs.”

The term paper cited some other studies of mound building ants, Andrews (1925), Baxter and Hole (1967), and Salem and Hole (1968). The killing of vegetation as noted in the quote from Wikopedia was not noted at the site where the monolith was collected, which was in an old small clearing in a forested area, perhaps once cultivated, but with no obvious Ap horizon.

Fanning likes to mention, that in 1960's he took a soil genesis course from Francis Hole, at about the time he was developing pedoturbation, concepts and names, when he, Fanning, was a fellow graduate student with some of Hole's graduate students, including Paul Baxter who studied ant pedoturbation, and Stan Buol. Buol went on to become the pedologist at NC State University in Raleigh, NC. He was involved as a student with Hole, back in the 1960's, in starting the Soil Horizons (also called Soil Survey Horizons) publication that was taken over by SSSA, which unfortunately, in the opinion of many soil scientists, is no longer being published. Buol and Hole became co-authors (Buol et al., 1980) of a soil genesis and classification textbook that could be considered a competitor to the one by Fanning and Fanning (1989).

ED LANDA'S ADDITIONAL AMUSING ANTHILL STORIES –see following pages

As an occupant of the basement of HJ Patterson Hall, and as Del Fanning’s officemate, the ant hill monolith has long been a point of interest, both as I, Ed, routinely traversed the hallway and in June of this year, when we shot Figs. 1-3. Early in August, 2022, I visited the headquarters of the United States Coast Guard, at the St. Elizabeth’s federal campus in Southeast, Washington, DC, a site offering a



panoramic view of the city (Fig. 4). The parking lot had a UPS box (Fig. 5), and following the directions to “lift for shipping supplies” — more than I bargained for. A low-form, indurated-soil, ant mound was perched above the labels in the box (Fig. 6). No current ant activity was observed. The large-diameter tunnels were reminiscent of those seen in the monolith. It seems likely that the tunnels serve as ventilation ducts, as well as passageways. Cooling would indeed be an issue in this unshaded metal box (think the hotbox scene with Sir Alec Guinness in the film *The Bridge on the River Kwai*).

But there was more synchronicity at play. The Beltsville silt loam monolith was collected by Newcomb and High in 1973. In 1977, I was a post doc in the Soils Department at Oregon State University, Corvallis, OR. While hiking at the William L.



Finlay National Wildlife Refuge south of the campus in April of that year, I came upon a large number of cylindrical, indurated-soil ant nests in the tall grass. These structures were up to 50 cm high and 130 cm in circumference. The nests were more apparent on the landscape in areas that had been burned as a refuge management measure, as seen in Fig. 7, taken from the entomology journal paper that I published later that year on this unusual occurrence.

The Oregon Agricultural Experiment Station put out a press release on the paper, and featured it in the Fall 1977 issue of its magazine. That got picked up by newspapers in Corvallis and Eugene, and several local TV stations. Among the people who wrote me with their ant experiences was Bill Bowerman, legendary track & field coach at the University of Oregon and co-founder of Nike. The press release also caught the attention of some editor at *The New Yorker* magazine, where it served as a column filler on p. 72 of the December 5, 1977, issue, sandwiched by ads for Brooks Brothers Clothing, Steuben Glass, and Kodak Carousel

slide projectors (See Figs. 8a & b on the subsequent page).

Fig. 6, below, Ant Nest (Hill?) in the mailbox.



As one can see from Fig. 4, the box was on a wide sidewalk adjacent to the visitors parking lot. The ants would have to traverse a considerable distance from any exposed or vegetated soil area to reach the box. This distance has implications for their food gathering, and for the transport of the soil particles to build the initial structure. It was not possible to determine a point of entry for ants into the interior of the box.

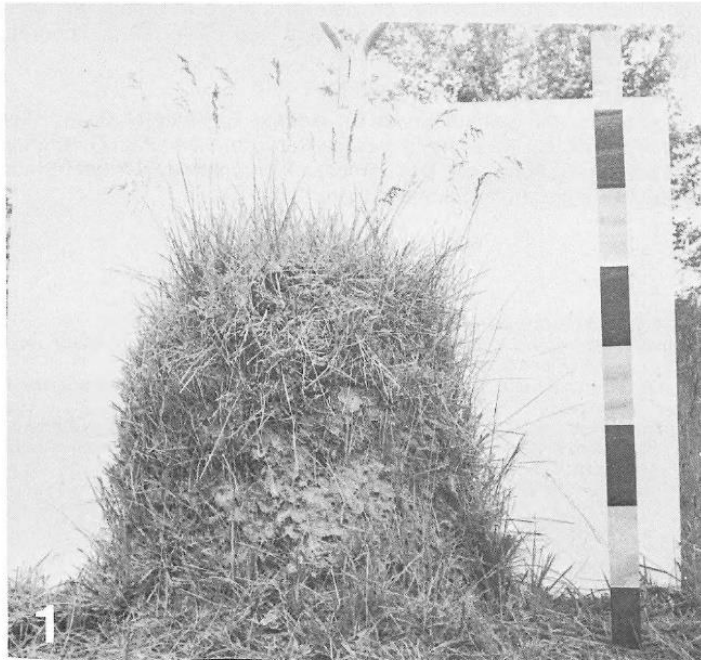


Fig. 1. Ant nest (each unit on scale is 10 cm). Vegetation on side-walls has been trimmed to show nest structure. Fig. 2. Distribution of nests on the landscape.

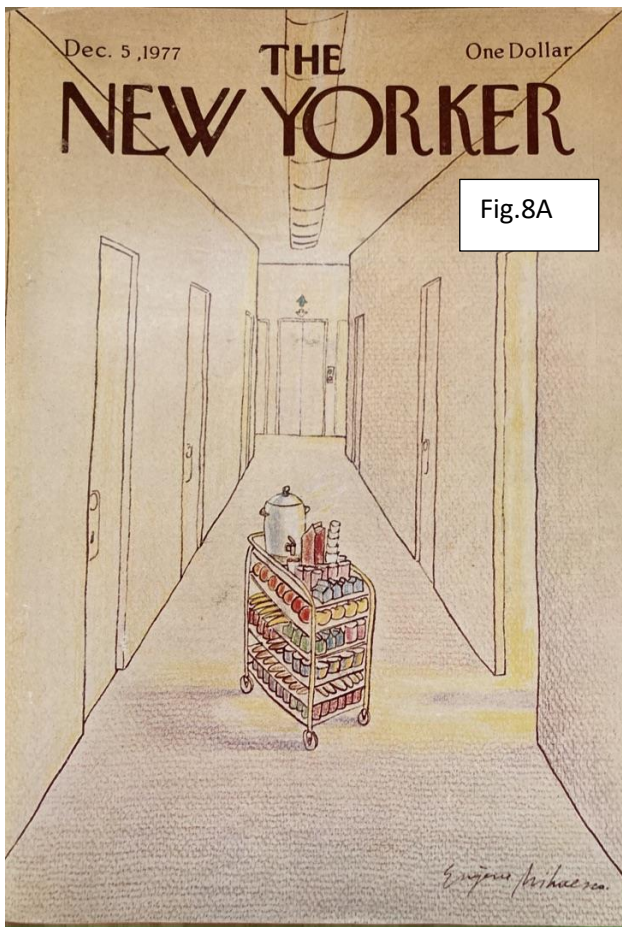


Fig.8A

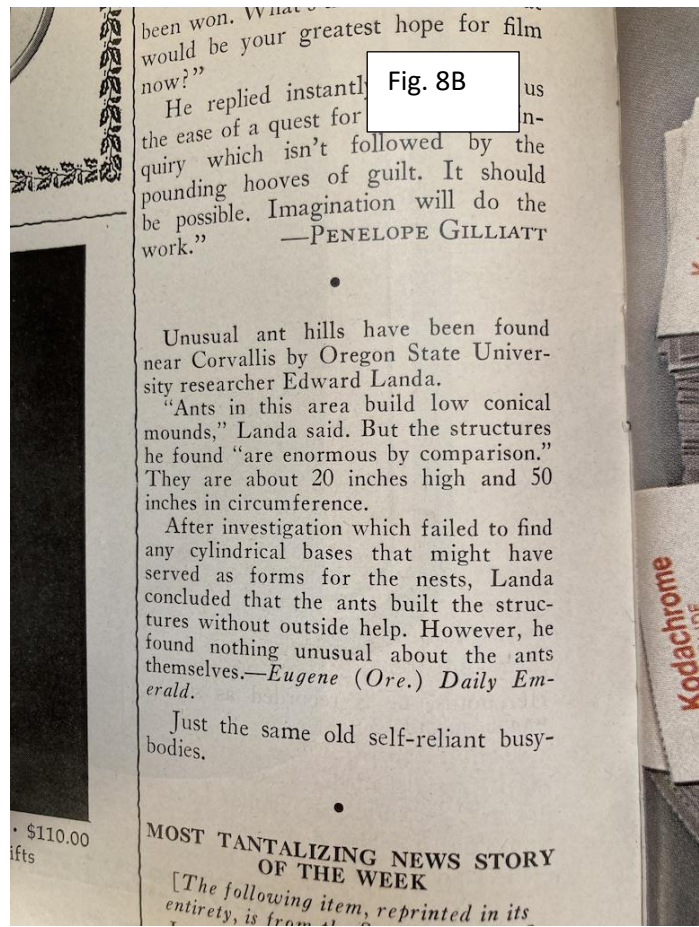


Fig. 8B

Figures 8A and 8B, above, are reproduced from the Dec. 5 issue of the New Yorker magazine that reported on Ed Landa’s Oregon ant hills story.

Wildlife conservationists have their charismatic mammals—tigers, lions, elephants, pandas and the like. Soil scientists might consider featuring ants, as well as earthworms, in such a role, as part of our efforts at reaching the broad audience of potential soil enthusiasts.

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Newcomb, Wilber W. and Calvin T. High. 1973. Pedoturbation by ants in a forest in Maryland. 1973. Unpublished term paper for UM course AGRO 414, an old Xerox copy of this paper is in term paper files held by Fanning. The paper contains 10 pages of text plus one table and one figure and one page of references.

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