

Conversations With Francis D. Hole¹

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In April, 1988, the Association of American Geographers (AAG) is honoring Francis D. Hole for his lifelong contributions to soil science and geography with two special symposia. The following interview, conducted some time ago, is published here to coincide with the planned AAG honors.

This interview dovetails with the interview of James Thorp (Tandarich et al., 1985) in which he discussed the contributions that the faculty and students of Earlham College have made to soil science, geography, and geology. It was Dr. Thorp's opening words which made us aware of this "Earlham Connection": "Dr. Allen Hole was professor of geology at Earlham College, and he trained Mark Baldwin. . . Earl Fowler. . . and [me]. . ." (Tandarich et al., 1985, p.5). James Thorp informed us that Allen Hole was Francis Hole's father. Tandarich et al. (1986) described the Earlham Connection in the larger context of a history of soil science. Portraits of some of the Earlham faculty and students who have contributed to soil science are presented in Fig. 1 through 9, and will be discussed further in a future article.

This brief introduction puts the remarks by Dr. Hole in historical perspective. We are grateful to have had the opportunity to interview Dr. Hole and appreciate the frankness and candor of his responses to our questions.

Tandarich: Francis, could you tell us how you became interested in soil science. I know that your father [Allen David Hole (1866–1940), Fig. 1] is largely responsible for that.

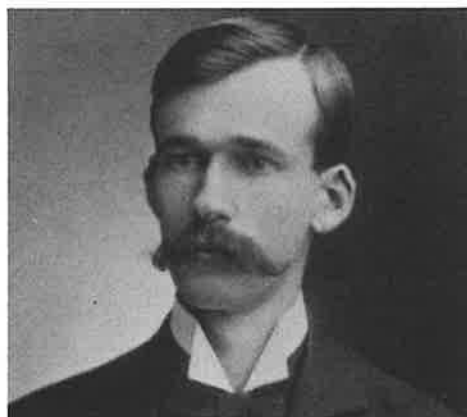


Fig. 1. Allen D. Hole (ca. 1905). Courtesy of F.D. Hole.

¹ On June 4, 1986, John Tandarich and Randall Schaetzl interviewed Francis D. Hole at the Univ. of Illinois at Urbana-Champaign during the American Quaternary Association meetings. Brackets [] indicate editorial comments and additions.

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Fig. 2. Allen D. Hole in a field camp (Wyoming ca. 1912) similar to those pitched in Indiana. Courtesy of F.D. Hole.

Hole: My father was a refugee, because of his asthma, from the farm. He became a school teacher and then ultimately to his surprise, anyway, a Ph.D. in geology from the Univ. of Chicago [1910]. But in the summer times he had worked for the State of Indiana on soil surveys. They had summer jobs that they advertised. He would, in that program, set up tents on local rural schoolgrounds, and had permission to use the schoolgrounds, and then operate out of there, making soil surveys [Fig. 2]. The maps were black-and-white line maps and they



Fig. 3. Allen D. Hole (ca. 1940). Courtesy of F.D. Hole.

were published in some Indiana Geological Survey proceedings [A.D. Hole, 1912, 1915]. He was a glacial geologist; he worked under [William Clinton] Alden of the Univ. of Chicago, and participated with some of Alden's other students in the mapping of drumlins in southeastern Wisconsin. There is a U.S. Geological Survey monograph on that [Alden, 1918], and my father's name is listed in there. He taught at Earlham College for 40 yr in the Geology Department [Fig. 3], where there were no formal courses in soils, except that anybody who wanted to get experience in soil survey, could, through my father, be assigned to a U.S. Department of Agriculture soil scientist, and work as his assistant for [the] summer, and a lot of people did that over the years, [but] not very many at any one time. So that is where I got my interest. Of course, he enthused people. He was a dedicated teacher. He trained, in that sense, James Thorp, O.C. Rogers, Earl Fowler, John Metcalf, and Mark Baldwin [Fig. 4 and 5]. These were the ones that come to mind. There was [also] a man by the name of Fred Heller. Then I myself. Before I entered the Univ. of Wisconsin [in 1939] to pursue the Ph.D. program under Thwaites, in glacial geology, with a minor in soils under Truog and Muckenhirn, my father placed me with a group of students in Franklin County, IN, two counties down from Wayne County, where Earlham is located. The survey there was being done by O.C. Rogers; Jim Thorp was the correlator. That was my baptism in soil survey [in the summer of 1938]. [Franklin County] is very interesting because the northern part is Tazewell, as you used to call it, glacial drift, with the Russell soil catena, instead of the Miami. Miami was in the next county. We had the Tazewell and then we had the Illinoian Cincinnati catena—Claremont on the flats, on top, with the crayfish there in the corn fields. That was a very good county to be trained in because there is such a contrast. People on the Tazewell drift had good farms, prosperous farms. Those farms on the Illinoian were poor. The houses weren't kept up so well. Productivity was not so good.

Schaetzl: Were your interests in soils enhanced by mapping in this county, or were they strong before?

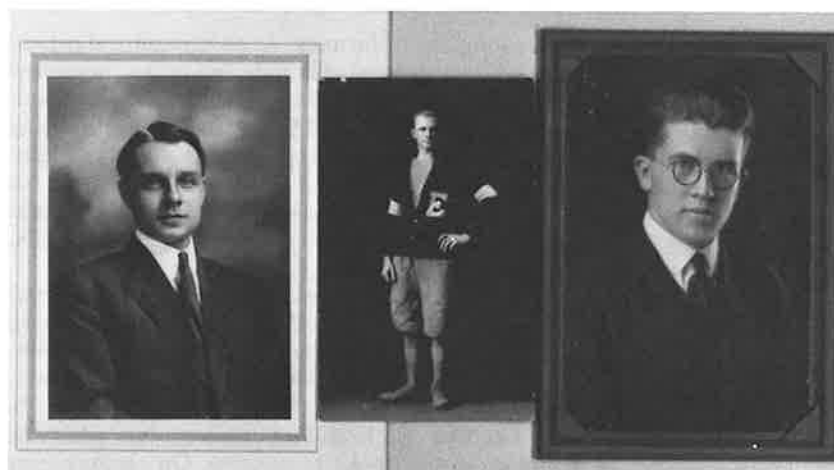


Fig. 4. Three Earlham College graduates who were students of Allen D. Hole. *Left to right:* Mark Baldwin (1912), Earl D. Fowler (1915), and James Thorp (1921). Graduation photographs courtesy of Mrs. Mark Baldwin, Robert Fowler, and the Cyril Harvey family.

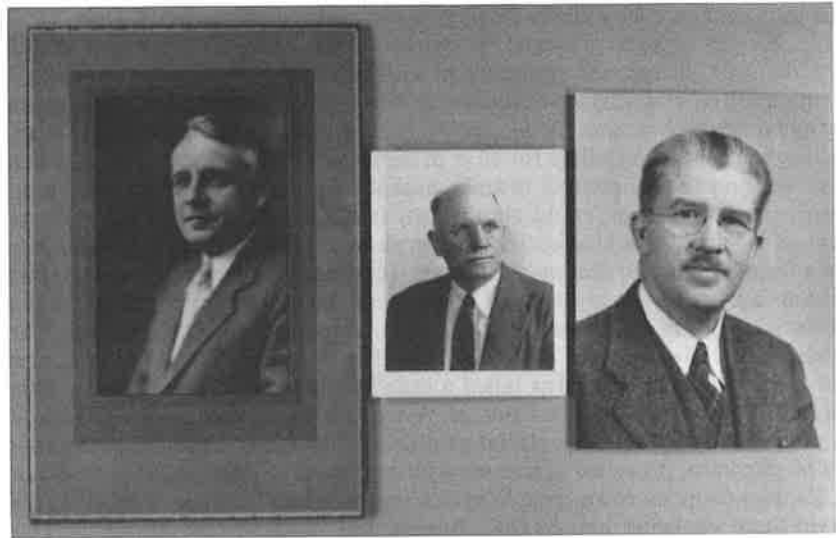


Fig. 5. The three Earlham graduates later in time during their careers. *Left to right:* Mark Baldwin (1938), Earl D. Fowler (ca. 1945), and James Thorp (1949). Courtesy of Mrs. Mark Baldwin, Robert Fowler, and the Cyril Harvey family.

Hole: I was interested in becoming a glacial geologist and a soil scientist, like my dad. I had the motivation but I had no experience. What the county experience did for me, you just can't put a figure on. We were paying for our own room and board and tuition—see, we were getting credit at the college and had a deal worked out so you could do this work and yet you didn't get paid a salary. You paid your own expenses and tuition and you were getting summer credit at Earlham College. It just opened my eyes.

Tandarich: Did your father ever talk about how he became interested in soils?

Hole: Well, he came from a long line of farmers. As an agricultural person from an agricultural background, he was interested in soils, but he was interested as a scholar in the science of soil. He was fascinated by Marbut, who was about the same age and who was in charge of the U.S. Soil Survey and was translating Glinka's work into English [1914–1917], and was laying out the way you look at a soil profile, how you look at the horizons. All this was kind of new. So he [A.D. Hole] would send people out to work in that system and then they would feed back information to him. He himself didn't go out anymore to map soils, but he certainly kept track of the development.

Tandarich: Do you know if he personally met or corresponded with Marbut?

Hole: No, he didn't. It was just through his students. He knew that Thorp and Baldwin were employed and worked with Marbut. So it was through them. He didn't himself. See, . . . it was this little college, with low salaries and all that. He didn't have any extra money for traveling around. There were no funds to encourage faculty to do things like that. So he did his job teaching, which he loved. Most summers we would go to the Rocky Mountains. On geology trips we got credit. He would go on all those, and lead them. The northern trip went to Yellowstone and Glacier Parks, and would alternate with a southern trip in the San Juan Mountains, Grand Canyon, Meteor Crater [and] Petrified Forest.

Whenever possible, if one of his students in soil survey was enroute, we stopped. For example, we stopped one summer [1923] in the Bighorn Mountains on the northern trip to visit with James Thorp. That was Jim Thorp's first, as I recall, soil survey assignment in the Bighorn Mountains to map a large county there. Sheridan, WY was his headquarters. We spent several days with Jim. He took us on hikes up in the mountains, and showed us different kinds of soils.

Tandarich: Your father was at Earlham College until he passed away in 1940. Were there other people there at that time who were fostering interest in soils and glacial geology?

Hole: No, it was a one man department. When I went to Earlham, in the early depression, the student body numbered only 500 in the college. I never heard anybody say that the college might go bankrupt and quit. I know they didn't pay my father [or] any of the faculty for one whole summer. They had three quarters of a year's salary that year. The faculty all took it cheerfully. They had gardens and whatnot because it was the depression—to have a job was something. They knew it was tough times. But I know it was a one man department and my father was also looked upon as the man with a key to the observatory, to look at the stars. You get spread pretty thin in a situation like that. So he was a paleontologist, and a lithologist, and taught the general courses in geology and ran these summer courses. But there was a good feeling among the faculty there. The botanists appreciated that the plants were growing in something that the geologists looked at. The only time that there was real inter[disciplinary] cooperation on soils was [through] the Kettering Foundation, in years later when Jim Thorp had retired in his middle 50s, as you could, from his post as chief correlator on the Great Plains, and came to Earlham to be on the faculty.

Tandarich: When was that?

Hole: I would say in the middle 50s? Then they applied to the Kettering Foundation, in Battle Creek, MI. They asked for funding of the science faculty: chemists, physicists, zoologists, [and] a botanist. The science faculty would concentrate in geology . . . on a soils project. Each specialist would take some part of it. And the Kettering Foundation funded them for about 10 yr. And you can see some papers appeared at that time in the *Proceedings of the Soil Science Society of America*, with Jim Thorp as one of the authors, and Erling Gamble [an] advanced student there [Thorp et al., 1957, 1959]³. Now he [Gamble] is a career person in the Soil Conservation Service. So then the science faculty were all concentrated on: What is this soil, the Miami? How does it function? Where do the plant roots go? What kind of animals? Worms? Ants? The chemists would run the chemical analyses; the physicists would run the particle size distribution and all that. That is really nice to look back on. That was, you might say, the heyday of soil science, that would incorporate all of the sciences. I have often thought that, and I have written the college to that effect, that they should have the humanities involved too. All freshman would have to take, among other things, a course in understanding the land. You'd go out in teams. Half the team would be scientists and half the team would be humanities people—artists, musician, and writers. Part of the team would be writing poems. If you went out and dug a pit in Lewis woods [near the Earlham campus] and looked at a soil profile and described it, the poet, musician, and artist would be painting, getting motifs, or making designs. All the scientists would be doing their stuff. Then they would look at the literature: Where does Shakespeare use the word soil? When does Shakespeare use the word ground? It would be a comprehensive,

³Some of the research was published through Earlham College, e.g., Thorp and Gamble (1972).

interdisciplinary look at how soils relate to people and people relate to soils. They haven't done that. That to me would be the next step. It was nice what Kettering would permit. It stopped only because Mr. Kettering died, and the Kettering Foundation had new personnel. It stopped that funding and went on to something else.

Tandarich: What about the period between 1940 and the middle 50s? What was happening at Earlham then, in terms of people who were teaching there in either soils, or glacial geology and soils.

Hole: I succeeded my father and taught there 2 yr. Then I was drafted as a conscientious objector, [and] went to camps where I worked, among other things, at a soil and water conservation research station. They tried to put us conscientious objectors in work that was short of personnel, because of the war. They [Earlham College] brought [in] various other people. Ansel Gooding was brought in before Thorp was, I believe.

Tandarich: Was he a geologist?

Hole: He was a geologist, but because of their own tradition in soils, Ansel Gooding was interested in, for instance, the clayskins going way down into the tills, down into joints in the tills. Ansel Gooding got out some pretty good papers on the stratigraphy of the Pleistocene and the soil structure in them [Gooding et al., 1959; Gooding and Gamble, 1960]. Ansel was a good man. He would always come to the AMQUA meetings and field trips.

Tandarich: Was he an Earlham person?

Hole: No, he came from somewhere else. I can't for the moment remember. He's not living anymore. It was a great loss. He died in his 50s. It was a heart attack or something. He was just a terrific person.

Tandarich: Now, earlier you mentioned James Thorp. When did you first meet Jim Thorp at Earlham?

Hole: Well you see, Jim Thorp was a graduate of Westtown Friends [Boarding] School, near Westchester, PA. His father was a carpenter and a farmer, and for a while his father taught manual training near Westtown. When he was a senior at Westtown he fell in love with Eleanor Ballard, a girl from the Midwest. When she graduated from Westtown, she wanted to go to Earlham, so, by golly, he went to Earlham, and Eleanor Ballard babysat for me. Goodness, in other words, he graduated in 1921 so that means he entered in 1917. I was born in 1913; so that makes sense. I was four-yr old when she came as a freshman to Earlham College, and then if my folks needed a babysitter, they'd call up, "Eleanor, would you come over and take care of Francis?" Ha, Ha. And wherever Eleanor went, I imagine Jim went. Now I remember Eleanor. I wasn't aware of Jim until later. The first 2 yr at Earlham, he didn't know what he'd ever do. Nothing but Eleanor really got his attention. But then he took a course in geology under my father in his 3rd yr. He said, "This is it. THIS IS IT!!" And he went right after it and majored in it just as hard, and hot and heavy as he could. That's the way he'd talk. I imagine he did quite well. That's the way he experienced it. He wasn't really taken by any particular discipline until he got into geology. Then when he got his degree, my father would say, "Well, why don't you apply to the Bureau of Soils?" He did, and got a job. He set out to Sheridan, WY. Eleanor had a tuberculosis problem. People had TB in those days and what they said was, "Go out to Colorado. Go out somewhere where the air is pure." And that was taken into account when they were making the assignment for Jim, so they went out to Sheridan, WY. That is where we visited on one of those trips.

Tandarich: Then did you actually work with Jim at a later time?

Hole: No, it was just these visits. Sometimes he would come through Richmond and make a correlation trip, and call up our house and say, "Francis do you want to go with us for the day? So it was [an] informal, incidental thing.

Tandarich: How about your own interest? You mentioned that you acquired the interest just from observations of what your father did.

Hole: I got this kind of training, and then I came up to the Univ. of Wisconsin and I was very lucky to get Fred Thwaites, who was there, as a professor of geology. He was one of the most supportive; he was just the best kind of major professor a person could have. He said, "Francis, you're in soils." So immediately he gave me the feeling [that] he was going to depend on me to be the authority. Ha, Ha. He said, "I want you to go up in north central Wisconsin and study the border drift. We don't know whether it's Kansan, or Illinoian or what! They say it's old. T.C. Chamberlin saw a railroad cut up there in Marshfield and it was red, so he said, 'Kansan till is red, therefore that must be Kansan.' I want you to go up there. You know all about soils (which I didn't of course, yet) and on the basis of the soils, among other things, can you tell the difference in age between tills by the soils on them? Go up and see what you can find out."

Schaetzl: So he gave you that topic?

Hole: That was my topic. He gave that topic to me. So I got myself a Model "A" Ford and I spent three summers up there. That is pretty nice when you get a thesis topic. So I ran back and forth, boring holes and recording colors. There was no color chart in those days, so I got a Sears-Roebuck paint chart and I got chips off of the paint chart that matched these various materials and put that in my thesis. But what I did was particle size distribution analysis.

Schaetzl: Didn't you have a French degree?

Hole: Oh yes, yes, I had a French degree before I got my first teaching job. I went from Earlham in 1933 to Haverford College for a year. In those days you could get a master's degree in French, So I was at Haverford from 1933 to 1934. That was after I went looking for a job. Of course, Haverford gave me a really nice scholarship—\$800 in 1933 would be like \$10,000 now. So, I couldn't resist. I liked French, but it was after that [when] I began to realize I didn't want to be in linguistics, so I went back to earth science. So, Thwaites gave me an assignment that was glacial geology and soils, and that led to my being asked to come back to head up the little Soil Survey Division at the Geological and Natural History Survey at Madison. Well, there is a person that has training as a glacial geologist and a soil scientist. When you do those things you don't know what is going to happen. You don't know that you are being handed the key to another door that you don't know exists.

Tandarich: Was the topic that you mentioned, distinguishing the tills or the drifts, based on the soils, your master's or Ph.D.?

Hole: Ph.D. I already had a master's in French and, if you had a master's, whatever it was in, they didn't insist that you get another master's. They could, but they didn't. So I just went on for the Ph.D. It took me 3½ yr to get the Ph.D. In those days, I thought, "Wow, I'll be half dead by the time I get through this," because when you're young, it looks like it's taking too much time.

Tandarich: Was your dissertation published?

Hole: Yes, it was published in [the] *American Journal of Science* [Hole, 1943]. I took the degree in 1943. . . . Actually, what I showed was that there was a loess cover. We know that now. There was a loess cover over all kinds of things: over outwash, over till, over bedrock. [A.R.] Whitson was the soil specialist for

the Geological and Natural History Survey. He said that the soil up there in the border drift area was a very ancient soil, because one of his predecessors by the name of [S.] Weidman had said it was on a peneplain, [therefore,] it must be an old soil. So, he [Whitson] understood that silty layer to be a highly weathered rock-derived residuum, which was a mistake. He thought, "Well, it is so weathered, highly weathered." So, I was to help see if I could find out whether, at least, if that soil was very, very old: Kansan, or not. Well, [at] one place in the Mill Valley between Blenker, WI and Marshfield, I was boring and I came up [with] . . . *lime*. I still did the dumb thing. . . , [as] I learned in Indiana, of carrying around a bottle of hydrochloric acid. I dropped the acid and "phinng!"; it would blow up in my face! I found [with] that sequence of soils, there were places calcareous at 36 inches, places calcareous at 6 feet. So, it varied. But the very fact that it was calcareous [in] some places at 36 inches meant that it couldn't possibly be Kansan. It couldn't even be Illinoian. Then we looked back at Weidman's report on the North Central region, and he had that in the back of his book [Weidman, 1907]. But he hadn't mapped it, so I mapped it. There were several miles of this stuff in a valley. Then when I ground that stuff up in the lab, what we call silty till, there was a crinoid stem in it. There's no limestone around there; nobody knows where that came from. To this day, they do not know where it came from. In other words, the glacier destroyed the last remnant of some limestone, apparently. So I ended up, in the thesis, saying, "I think this is Tazewell, or possibly even Cary." The Cary ice could have come forward, pushed out, and then retreated without building a moraine, then gone back and stagnated, stood with a front where the big moraine is.

Schaetzl: So you did not recognize, in your dissertation, the presence of the Marshfield Moraine?



Fig. 6. Francis D. Hole (ca. 1950). Courtesy of Univ. of Wisconsin Extension Photographic Media Center via Gerhard B. Lee.

Hole: Well, Thwaites did not believe in the Marshfield Moraine. He said it was sandstone-cored. He just thought it was a veneer over a ridge of sandstone. He thought it was not correct to call that something the glacier built. The Marshfield Moraine isn't very extensive anyway. The calcareous stuff that I found was in till in a kind of shallow valley, leading southeast from Marshfield. So, I was lucky to have [a] thesis that turned out to say something, and it was both glacial geology and soils.

Tandarich: From what I've seen of your later publications, you acquired an interest in a total, overall, synthesis approach,—a multidisciplinary approach. Can you tell us about how you got interested in this multidisciplinary approach to the subject of soils and landscapes?

Hole: You see I was trained at Earlham by my dad, and by the other science professors, and by the liberal arts type of education to be holistic [and] interdisciplinary. I was then lucky enough to have a job in the [Wisconsin] Geological and Natural History Survey, which sent you out and you could walk, and you mapped, but you'd see a lot of stuff besides what you are supposed to see [Fig. 6, 7, 8]. I was then responsible for seeing that reports for about 10 different counties were written up. Each time you write a report, you do a little bit better, you put more things in, and the climax of all that was the Menominee County report, fortunately [Milfred et al., 1967]. We had three maps: one was a soil map, one the geology map, and then there was the vegetation map. It makes sense when you are doing soil survey, as you know, to see all the five factors of soil formation at work.

Schaetzl: What would you say is the highlight of your publishing career?

Hole: Oh well, I was surprised first of all that I was publishing. In soil survey you walk all summer and then you bring your stuff in, it is very natural to do it, and to have these things come out! I felt fortunate to be in a state agency that had the funds. They wanted me to do it, and I could be part of this process. In one way, the high point would be when . . . I had edited three issues of Soil



Fig. 7. Soil survey review, Dodge County, WI (1953). Left to right: W. DeYoung, F.D. Hole, Fergerson, and R. Higgins. Courtesy of Gerhard B. Lee.



Fig. 8. Francis D. Hole getting a good view of a soil profile for some photography (ca. 1953). Courtesy of Gerhard B. Lee.

Science centering around the International Association for Quaternary Research. They wanted something put out before the INQUA meetings, . . . a volume on some theme that would be of interest to the attendants at the [INQUA meetings]. I was appointed by the Soil Science Society of America to be the contact with INQUA, so I got the job of editing these three issues of *Soil Science* [99(1):1-72 (1965), 107(6):393-486 (1969), 116(3):133-248 (1973)]. In two of them, well, in several of them, there were Russian papers. They (Russian soil scientists) were apparently pleased with the warm encouragement that they got from this American committee—from me particularly. So, they wrote afterwards and said, "Send us an article and we will put it in *Pochvovedeniye*." To me that's the ultimate! So I wrote up an article on the Menominee County soils and how the Podzol B fades when you knock off the hemlock [Hole, 1975]. We had gotten enough information. That in a sense was the highlight. Another highlight would be when the *Soils of Wisconsin* book [Hole, 1976] came out, because there was a whole team of people making that a beautiful book. People would make the layout; they all saw to it. It was almost a coffee table book, it was so pretty. So in a sense, that was really nice.

Schaetzl: In two graduate seminars I have had in soils and geomorphology, we read your 1961 article on pedoturbation [Hole, 1961].

Hole: You know I wanted to give that at the meetings of the International Soil Science Congress, but I remember my paper was bumped by one of the soil scientists in Washington, and this had to be, because soil scientists in Washington have to get in a certain number of papers, our government insists. But it was bumped into *Soil Science*, and it's had as much exposure, in fact more exposure, than if it had been stuck away in one of the [Congress] volumes. That is one of the things that happens. And it's been quoted a lot!

Schaetzl: How do you view your soil landscape research, contributions it has made, and potential contributions?

Hole: I think soil landscape analysis, as you know, is kind of the wave of the future, because it is the next thing. Not that we're through working on the soil profile, or pedon, by any means, but we need to think more about the patterns that we see on the landscape. They should have our full attention. The thing that's made me really happy is that I can be a part of this growing edge of pedology. I know that people like Thorp, Marbut, all those people, had in their heads these images, all soil surveyors do when they come back. They have got these images of the patterns, but there aren't enough terms, not enough terminology, to describe what they see. There isn't enough analysis, for example, [of] the width of soil boundaries. That's a time consuming process. We just haven't had the time to look at that. And research mapping, such as Fridland's book has [Fridland, 1976], right when you open [it] up about in the middle and there's a two page spread of a detailed map where a man bored about every meter. Enormous detail! But we just haven't done that kind of research. So, I think soil landscape analysis is the wave of the future. It is so holistic. You're putting everything together again, and it brings in this concept, that soil changes. As I keep saying, the Tama silt loam is not the same when it's under native prairie, as it is when it's under corn. In fact a rotation of corn, oats, hay, hay makes the Tama different every year. These are different soils [in] the way they behave, [and] the way they operate.

Schaetzl: Your 3-day soils trip has been a real influence to multitudes of people.

Hole: The 3-day soils study tour of Wisconsin. Well, I think that is a reflection of the experience I had with my father, really. You see, from the time I was a kid, I was going out on trips with him. It just seems like a normal thing to do. There are not too many faculty members that will take the time for that sort of thing. I think it's a pity. So, it seemed natural to me.

Tandarich: Where did you acquire your interest in the violin, as not only enjoyment but also a device to use in your lectures?

Hole: Since I was lucky to grow up in a community where music was encouraged among all children in the public schools, I was playing some every day. And since I had never stopped, I thought I could use it to "spruce up", to get attention in the classes. I may have told you the first time I tried it there was fear and trembling because I thought, "They'll think I'm absolutely silly." I took in two violins, one an Italian one, and this one [in his possession at the time of the interview], and I generally began (this is *Soils of the World*, about 20 yr ago probably). . . by welcoming people in French, German, and English. I said, "Well, this is an international topic. People study soil genesis all over the world. We better remember that." And at one time somebody continued it in Spanish, and another time somebody (from Iran or somewhere) wrote it out in their native language, and there were Portuguese from Brazil. But anyway [I welcomed the students in] the standard languages that I could handle. Of course this . . . makes people sit up and say, "Maybe this is an important course. Maybe this is an important field." And then, at that particular time, I said, "I want you to listen to these two violins and tell me which is the better one." Then I played on each one. How many say this is a better one?" More hands went up for the Italian one. I said, "Listen to them again, you know, you don't know violins. You'd have to take a course in violins to get to know how to judge them because one of them is worth 10 times, at least 10 times, what the other one is worth. And that's the way with soils!" I got to my point, and I thought, "Well, I did that stuff", and then I began to get feedback. I know the chairman of the



Fig. 9. Francis D. Hole exuberantly discussing soils and landscapes (1978). Courtesy of Univ. of Wisconsin Extension Photographic Media Center.

Geography Department said, 'Francis, I am so tired of hearing all those good things about what you did that first class!' (He was ribbing me.) Then I thought, next year when it came around, I would try something a little more. Then, I expanded. I started playing music that could be interpreted as describing soil in some way, the way soils function, and I've been developing that more and more. So, I think [it is] what you do—you take everything you have, if you play the guitar, you can do it with the guitar. You take everything you have [and] bring [it] to bear, and I think people appreciate that. When somebody in the classroom acts like a whole person, a complete person, it's kind of refreshing really, because it's original and it comes out of that person's personality and that person's sharing [Fig. 9]. That person must care a fair amount about the class. Of course that was done for me by people before me.

Tandarich: We thank you very much for the opportunity to visit with you about these things.

Hole: I'm glad you're interested in all this!

Acknowledgment

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Editor's Note: Dr. Hole edited and published the first issue of *Soil Survey Horizons* in 1960. He and his colleagues at the University of Wisconsin continued to edit and publish *Soil Survey Horizons* until the Spring 1975 at which time the Soil Science Society of America began printing and distributing *Soil Survey Horizons*. Dr. Hole continues to be a regular contributor to *Soil Survey Horizons* as evidenced by his contribution on page ii this issue.