

# The Great Debate and a Few Related Recollections

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*Retired*

The year was 1955, or maybe it was 1956. This narration is drawn entirely from memory, so some rounded edges are to be expected and, I hope, forgiven.

## The Fault Finders

I arrived at the University of Texas in 1951 thinking of possibly majoring in geology. There was a student organization called the Fault Finders. One balmy Saturday they held a field trip to Pilot Knob. We went in an old yellow school bus. The trip was led by the gifted teacher, Dr. Steven E. Clabaugh. All day long he showed us outcrops and revealed the secrets of what had transpired beneath our feet. And we searched for olivine crystals. I remember very clearly returning to my room late in the afternoon with a strong feeling of exhilaration. I cannot put my finger on exactly why. Was it the learning? Was it the insider knowledge of the workings of Mother Nature? I cannot explain it, but I'm sure it was more than the fresh air and exercise. If you are a geologist, you probably know what I'm talking about. That trip did it for me. I began saving my money for a hand lens and a hammer.

After another year or so the Fault Finders failed to open. I don't know if it was a side-effect of one of the cycles we have come to know so well or if a key person or two graduated and it died of natural causes. There was a chapter of Sigma Gamma Epsilon, but it was not available to undergraduates. There was no student chapter of the American Association of Petroleum Geologists. And Austin Geological Society was not yet an idea.

## The University of Texas Geological Society

Four close friends, Eleanor Macha Hoover, Rex White, Bill Ward, and I, thought we could and should get a student geological group restarted. Rex and I had become acquainted through alphabetical seating in Geo 601. Bill Ward was just down the row (the back row, that is) separated from Rex and me by a couple of Wheelers and a Watson. (These names and some other W's remain familiar to me because we would occasionally, at conventions, have a reunion of the back row of Geo 601). I don't remember where Ellie sat, but she was one of just a few women in geology at the time.

It was a simple process to start a student geology group. There was no red tape. No charter, no 501C3 filing. We didn't even get faculty permission because we didn't think to ask. All we had to do was reserve the geology auditorium and have a meeting.

Our first step was to elect officers. Well, it wasn't exactly an election. We four just gathered over a cup of coffee at the Commons and decided. We decided that I would be president and let me quickly say it was a matter of willingness not capability. Ellie was secretary. (Ladies, I'm sorry, but that's how it was then. The secretary was always a girl. Boys couldn't be secretary and girls couldn't be anything else. When I graduated and went to work, men got company cars, but women did not because of something about the ability to operate machinery. My daughter becomes outraged when she hears of these practices. I will tell you like I tell her: "On behalf of my unenlightened generation, I apologize.") I cannot remember what offices Rex and Bill held. I don't think we had a treasurer because we had no money. Ellie remembers that Rex was president, but that was the next year. 1956? 1957? I still have a membership card signed by Rex as president. It has no date.

In our discussions we thought the club might have a better chance of success if it had a more prestigious name than Fault Finders, so we named it The University of Texas Geological Society. Our first meeting was a presentation entitled "What Does a Geologist Do?" We recruited the eminent recruiter, Colonel (Retired) Olin G. Bell of Humble Oil and Refining Co. as our speaker. I recall being surprised to see the geology auditorium nearly full. I thought I was the only one majoring in geology who did not know what a geologist did.

There was another incident that night that is engraved in my mind, one of those embarrassing moments that you never forget. (Larry McMurtry writes that embarrassment is temporary. I disagree. Acclamation is temporary. Embarrassment is forever.) After the meeting I was driving Colonel Bell back to his motel, a spiffy place on lower South Congress. Bill Ward was with us riding in the back seat. I made a left turn in front of oncoming traffic. I knew I had enough room, but Colonel Bell did not. I scared our guest so much that he practically got into the driver's seat with me. A few minutes later we thanked him and let him out. As we drove away I said something like "That's the dumbest thing I've ever done." Bill agreed. He said something like "Yeah, there went that job offer."

We had a talent show. I recall being concerned about our ability to pull this off. And I recall the relief when it became clear that there was an abundance of geologists with entertainment talent willing to perform. And I recall Connie Mayes Dyer tap dancing.

We had a field trip. My only recollection is driving the same old yellow bus through the hill country.

Regretfully, most of the events are as gone as the Llanite dike. (In the 1950s the Llanite dike, with its unique blue cubic quartz crystals, was about waist high in the right-of-way of Highway 16 south of Llano. Today it is at ground level. Perhaps, at certain sites, we should holster our hammers.)

## The Great Debate: Did the Moon Come Out of the Pacific Ocean?

Over the past five decades, whenever a group of geologists of our vintage would gather, nearly always someone would mention the event that has become known as The Great Debate. We would reminisce, laugh, and enjoy it all over again. It was an event which will not and should not

fade into oblivion. I will do my best to record the elements of it that remain alive in my memory as accurately as I can. It is difficult to avoid embellishing the story; on the other hand, it needs none.

The principals of The Great Debate were Professor William Muehlberger and Professor Robert Folk. If you do not know these men, I must say that is unfortunate. They are two remarkable people who will enrich anyone crossing their paths. I will try to introduce them to you.

Bill Muehlberger is a big man who looks even bigger. He has a strong square jaw, a prominent chin, and the perfect posture of a drill sergeant. It would be a mistake to equate his demeanor with this physical description. He is a gentle man. He seems always predisposed to teach as all good teachers are. I did not have courses under Muehlberger, but I had the great pleasure of visiting Solitario with him a few years ago. Over a bowl of chili at a remote camp house, there is no better company. He is a structural geologist, but he is probably best known for his pioneering and lengthy role in training astronauts.

Bob Folk is a smaller man with a youthful face and boundless exuberance in everything he does. He is, beyond any doubt, a certifiable genius. I had him for sedimentation, his specialty then. I also had him for structural geology which he was called on to teach before Muehlberger's arrival. (To illustrate rock mechanics, he would roll silly putty into a ball and bounce it off the back wall of the classroom—a pretty good arm. Then he would stick it to the blackboard and have us notice how it slowly deformed toward the floor. How could a student ever forget that?) I was taking photogeology when, a few weeks into the semester, the instructor quit. Guess who stepped in to teach photogeology?

Folk taught the first ever in the world carbonate petrography course. The heart of the course was his developing scheme of classification and nomenclature that would revolutionize the understanding of carbonate rocks. (In 1961 Folk's American Association of Petroleum Geologists article on Classification of Carbonate Rocks won Best Paper for the year. Others, seeing the oncoming advancements and taking notice of the clarity and utility of this scheme of classification and nomenclature, began to publish modifications of it. They largely used the same pigeons, just rearranged the pigeon holes and gave the birds new names. One complaint about Folk's classification was that 'micrite' was a new word and too long to easily learn. It is my strong opinion that these later writers did no good for carbonate work and, in fact, only added a component of confusion. O.K. End of tirade. Several years ago I mentioned to Folk this quagmire of classifications and he seemed not at all perturbed by it.) In later years Folk would discover nanobacteria (perhaps simultaneously with another scientist), and I suspect we have not heard the last from these tiny guys. Did I mention he is a genius?

Folk had an affinity for colored chalk in his lecturing. He also had an affinity for knit ties, popular at the time. Knit ties are wrinkle-free but the fabric is heavy and they have low tensile strength, so that as the day wears on they get longer and longer. By the end of one of Folk's energetic late-morning lectures, the end of the tie would be down around the bottom of the zipper and he, the tie, and the blackboard would be covered with colored chalk dust. Unforgettable.

In the 1950s 'plate tectonics' was not yet in the jargon. Continental drift (the forerunning term) was viewed with disdain if not derision. Sea floor spreading, the magnetic patterns, and several other determining factors were not as yet discovered.

It leaked out that Folk was a closet continental drifter. The fact was, he had a smoothly integrated theory which held, in part, that a nearby passing star plucked earth material from what is now the Pacific Ocean basin. The vacancy began to close by the separation and drifting apart of North-South America from Eurasia-Africa. The former 'other side' of the earth reached orbital velocity and there it sits as our moon.

My dim recollection is this: We thought a talk on continental drift would be a great University of Texas Geological Society meeting because it was controversial (You know how students are). Then the idea of a talk evolved into the idea of a debate. The question would be "Did the Moon Come Out of the Pacific Ocean?" I thought this would be harder to pull off than the talent show. The real enabler of the debate was Bill Ward. Bill was working with Dr. Folk on a grain-size analysis paper that they would coauthor. It was Bill who was able to persuade Folk to present and defend his unpopular theory. Bill also solicited Muehlberger to take the other side of the question. And it was Bill, again, who made wonderful posters to advertise the event. The stage was set.

I wish I could remember exactly where the debate was held. It may have been the auditorium of the physics building. Someone told me he thought it was the journalism building. (The memory is as gone as the Llanite dike). The room as I picture it was bigger than the geology auditorium, a capacity of maybe 300 people, and it was very close to full.

It fell to me to introduce the speakers and to state the rules. Folk, first, with 20 minutes for the pro, Muehlberger with 20 minutes for the con. Then Folk with 5 minutes for rebuttal and Muehlberger with 5 minutes for rebuttal. It was all very proper, and I would be time keeper.

I turned it to Folk and he went to the blackboard and went to work, knit tie flailing and colored chalk dust flying. He laid out, as I recall, his convincing story of floating continents. He took the pressure off of me by finishing right on time.

Now Muehlberger. (Many of these recollections are foggy and uncertain. This is not one of them. It is as clear as if it happened this morning. Here is precisely how it went.) Muehlberger came, unhurriedly, to the long black lab table that served as the lectern. He spent what seemed like a long time looking downward at his notes and thoughtfully arranging them. Finally he raised his eyes to the audience and said exactly this: "I feel like the guy who inherited the harem. I know what to do. I just don't know where to start." The audience convulsed, and then convulsed some more. I think if you could visit that room late some night when the campus is quiet, you could still hear laughter reverberating off those walls. Muehlberger stated his argument, as I recall, based mainly on strength of materials and rock mechanics, punctuated here and there with his remarkable humor. He too finished on time.

Folk had five minutes for rebuttal. He attacked Muehlberger's work in a cloud of chalk dust. A couple of minutes of that and Muehlberger went to the board and took the chalk from Folk and attacked Folk's work. Folk had brought plenty of colored chalk. He grabbed another piece and the debate reached, as they say, a new level. The convulsions of the crowd are now continuous. I am in a quandry. How do you time this? Finally I stood and announced that the time for rebuttal had expired. I have some faint recall of a scattering of boos.

The next may be imaginary. I think Ellie, Rex, Bill, and I huddled quickly and decided, wouldn't you know it, the debate was a tie! More boos.

I have a clear picture of people slowly leaving the room, some almost staggering with laughter or with exhaustion from laughter. The Great Debate was a learning experience that would remain in peoples' minds for years. No one dozed off. No one's mind wandered. It was all things a college lecture should be. And a half century later it is still remembered and enjoyed.

## Epilogue

Not many years after the Great Debate, continental drift, rechristened 'plate tectonics', shed its dubious reputation and became hailed as a major advance in the science of geology. It became a popular topic of technical talks. They always featured the symmetries of the Atlantic side of the globe. After the talk, when I could do so discreetly, I would ask the speaker "What about the other side of the globe?" The answer was usually something like "Well, it is pretty complicated over there." I would think to myself, "Damn right it is. That's where the moon came from."

A few years ago I saw Folk at an AAPG convention where he was receiving another honor. I asked him if he still believed the moon came out of the Pacific basin. He replied that he did not. He said the lunar samples denied it. Isn't it interesting that the astronauts who Muehlberger trained would bring back samples that would settle the debate. On the other hand, continental drift, under a pseudonym, is universally accepted. So the Great Debate was, in fact, a tie.

## Post Script

In the summer of 1956 I happened to stop in at Fuzzy's, a watering hole well-known to geologists located in Llano across the northwest corner from the courthouse square. Before leaving, I stepped into the men's room and there, on the wall, it was in neat, crisp, bold, block lettering, "The University of Texas Geological Society". My chest nearly burst with pride. There we were, immortalized on the restroom wall at Fuzzy's. There were no more worlds to conquer.

A few years later, passing through Austin, I stopped by the geology building and could find no trace of The University of Texas Geological Society. Gone as the Llanite dike.

But we had some great times back in '55. Or, wait, was it 1956?