

# LAST LECTURE LOUIS E. GRIVETTI

*“From Dinosaurs to Chocolate: Taking the Road Less Travelled”*

April 28<sup>th</sup>, 2012

## Transcript

FROM DINOSAURS TO CHOCOLATE. Thank you Annemarie and Matthew! What a joy to look out on this audience and see so many students and colleagues from this great campus, friends, and family members. I am honored to be with you tonight and I thank all of you for attending. Some of you attending tonight have traveled long distances and I thank you very much for your decision to be here. I also wish to express my thanks and appreciation to the ASUCD officers, the Last Lecture Council Members – but most of all I wish to thank the undergraduate students at UCD – for the privilege of addressing you tonight.

LAST LECTURE CONCEPT. To be named the ASUCD Last Lecturer is an honor, but the designation really honors the life of Randy Pausch, Professor at Carnegie Mellon University, who conceived the concept of the Last Lecture. It was he who delivered his “Last Lecture” with dignity and set the stage for others across the United States to follow. Randy’s concept behind the Last Lecture was that such presentations should not glorify the academic or professional accomplishments of the speaker, but should acknowledge the speaker’s family, mentors, and individuals that influenced the speaker; identify specific pivotal events in the speaker’s life; and share life’s lessons learned.

UCD. I never met a person who told me that early in their life they wanted to become a university professor. Being a professor certainly was not my original life goal. But by the 4<sup>th</sup> grade, however, I knew exactly what I wanted to be – I wanted to be a paleontologist and go on fossil collecting expeditions like Roy Chapman Andrews and visit the Gobi Desert to collect dinosaur bones – a dream that I held throughout my childhood and into my early undergraduate years at UC Berkeley. My professional career at UC Davis as a professor of both geography and nutrition came in mid-life and only after a series of encounters, that might be called unusual events, along with a personal willingness to take “professional chances” – to step through the open doors of opportunity – decisions that ultimately led me to a career at this great university.

WHO WAS I – 1956-1962? My undergraduate and graduate majors at UC Berkeley were paleontology – the study of fossils. I augmented these studies with complementary courses in anthropology, geology, and zoology. How it came about that I abandoned my

interest in dinosaurs and ultimately became associated with research on chocolate history – is a winding path that is the subject of my presentation tonight.

FREDERICK SIMOONS. In 1970 I chose graduate school at UC Davis because I wanted to work with Professor Frederick Simoons who at the time was a member of the Davis geography faculty. Had Professor Simoons chosen me to be his student some years earlier, I might have graduated from the University of Wisconsin, Madison, from Louisiana State University, or from the University of Texas, Austin, where he previously held professorships. It was Professor Simoons' departures from these institutions and his opportune arrival at UC Davis that resulted in receiving my Ph.D. degree from Davis in 1976. I owe much to Professor Simoons: he taught me the fine art of writing – and taught me to be a geographer, for which I am greatly appreciative. It is an honor for me that he is with us this evening! Professor Simoons ...

LUCILE HURLEY. When I entered the department of geography as a Ph.D. student, the Chair was Kenneth Thompson; Kenneth's wife was Lucile Hurley, Professor in the department of nutrition, and internationally known for her research on trace mineral nutrition. Lucile encouraged me to take courses in nutrition and food science. She was a strong supporter of my academic program and I valued her mentoring.

ROSE MARIE PANGBORN. Lucile, in turn introduced me to Rose Marie Pangborn, Professor in the department of food science and technology, who had developed the first course that integrated food and culture themes on this campus. Because of academic support and encouragement from both these important women scientists, I completed an additional 32 units of formal food/nutrition-related courses in addition to my graduate work in geography.

GEOGRAPHY AND NUTRITION. In spring 1976 I was hired at UCD in two departments: geography (20%) and nutrition science (80%). My contract called for me to develop courses and a research program that integrated geography with community nutrition and human food-related problems, whether from historical or contemporary perspectives.

MY GRADUATE STUDENTS. Between April 1976 when I was hired and July 2008 when I retired, I designed and taught 29 different classes; I had the honor of teaching more than 6,000 students; and also had the additional honor of serving as Major Professor and Mentor to 37 M.S. and Ph.D students. It is one of my great pleasures to have seen many of these fine men and women take their places as local, national, and international leaders in their respective fields today. It gives me great joy that some of you are here tonight.

IN THE BEGINNING. One factor has characterized my life and represents the primary reason that I became a professor at this great institution ...

THE ROAD LESS TRAVELED. This factor was my willingness to take risks; to abandon my early interests in studying dinosaurs; to abandon my upper division and graduate student training in micro-paleontology; and to embark upon a life-changing experience in a field I had not previously studied. I accepted a unique opportunity for employment in the Middle East. In that distant, culturally distinct, and widely misunderstood part of the world, I experienced the joys of courtship and marriage. There, I also experienced the trials of being caught up in the 6-Day Arab/Israeli War of 1967. In essence I followed Robert Frost's advice and took the road less traveled by ...

RIVAROLO CANAVESE. So with this bit of background, let me start at the beginning. I stem from a complex but loving family. Our ethnic roots are derived from a suite of nations on three continents: Africa, Asia, and Europe. My Italian ancestors originated in the Piedmont region of what is now northwestern Italy, specifically, the village of Rivarolo de Canavesse northeast of Turino. Our family surname originally was Grivetto. I regret to say that Italian was not spoken within our family homes in America.

COUNTY CLARE, IRELAND. My Irish family roots stem from County Claire. After immigration to America during the early 19<sup>th</sup> century my great, great grandfather Solomon Quinn settled in Providence, Rhode Island. His son, Frank Quinn, my great grandfather, enlisted in the Federal Army at the age of 15 and served as a drummer boy in the American Civil War until his capture at the battle of Petersburg. After the Union defeat at Petersburg, he was captured and incarcerated in a Confederate prison camp at Salisbury, North Carolina, until released the end of the war. His daughter, Lottie, my paternal grandmother, married my grandfather Dominic. By this time, however, the spelling of our name had dropped the "o" ending and substituted, instead, an "l" – hence Grivetti – all this for reasons that remain unclear. The Grivetti couple settled in a homestead northeast of Harlowton, Montana. My father, Rex, was one of six children born to Dominic and Lottie; only three survived into their late twenties.

ENGLAND (LOCATION UNKNOWN). My maternal family roots originated somewhere in England. My distant ancestor, Benjamin Carpenter, immigrated to North America prior to the Revolutionary War. He was a 6-month man who signed-on with a New Hampshire, regiment. According to family tradition Benjamin was present at the hanging of Major John Andre, who as you recall, collaborated with Benedict Arnold to secure the fortress at West Point for the British, and later executed by the American rebels.

MISSOURI-OZARK RELATIVES. Some descendants of Benjamin remained in New Hampshire while others in the early 1800s headed south and west for the Ozarks of southwestern Missouri. There, they established themselves as "hill people." Still other maternal relatives abandoned New Hampshire and settled in eastern Tennessee prior to the American Civil War.

TENNESSEE-ILLINOIS RELATIVES. My maternal great grandmother [left photograph] was 13 years old when President Abraham Lincoln was assassinated. I knew and talked with this astonishing woman! Although living in Tennessee, her parents supported the Union and her "kin" forced this branch of our family to move elsewhere, so together they

walked 500 miles from eastern Tennessee to Illinois where they settled in East St. Louis.

HARLOWTON, MONTANA: I. I was born in Billings, Montana, in 1938. During the earliest years of my life we lived in Bozeman and subsequently in Harlowton, Montana, a small farming/cattle-based settlement on the Musselshell River, a town initially characterized by an unpaved main street with 7-8 bars, and with remnants of hitching posts outside various stores. My paternal grandfather Dominic Grivetti was appointed the first sheriff of Wheatland County, Montana. He packed a pistol, organized posses, and generally ran a loose town; he served one term before being voted out of office.

HARLOWTON, MONTANA: II. My father, Rex Grivetti, grew up in this house. A smattering of chickens, goats, and a pet antelope characterized my father's play yard. He would become the first member of our family – on either side – to graduate from college. From this humble beginning my father would rise to become the chief petroleum geologist for Texaco; he was responsible, in part, for discovering the offshore oil reserves in the Santa Barbara Channel, and along the Alaskan North Slope. My Irish-American grandmother who lived in this house completed two years of college before illness prevented her from graduating. Before her marriage and relocation to Montana, she was an accomplished pianist. In contrast, my grandfather had finished just the 4<sup>th</sup> grade before he ran away from home to seek his fortune. Arriving in Montana the couple built this house and soon after these pictures were taken my grandfather gave up farming. After his term as sheriff ended, he was employed by the Milwaukee Railroad. My grandmother told me later in her life that the only piano in Harlowton was in the local house of ill-repute, where she became friends with the “madam” who allowed her to practice the piano several times a week. The fact that I play the piano well – and was able to put myself through part of my graduate school years at Berkeley tinkling the ivories at two bars – I owe at least in part to the encouragement of my tough Irish-American grandmother.

HOMES: 1938-1956. During World War II my father was part of a Strategic Defense unit of the US Geological Survey that mapped coal prospects throughout the Pacific Northwest. During this period we lived in a succession of towns identified here. At the conclusion of World War II my father joined Texaco as a petroleum geologist where we lived in Vernonia, Oregon and subsequently in Santa Paula, California, where in 1952 I entered High School.

SANTA PAULA, CALIFORNIA. In the summer of 1955 I was one of four students selected from my High School to represent the United States through the American Field Service exchange student program between my Junior and Senior years.

AFS SUMMER IN GERMANY. The American Field Service assigned me to a family in Flensburg, northern Germany, where memories of the Nazi era and WWII defeat still remained strong. I saw and experienced the ruins of Bremerhaven, Hamburg and Cologne. Some of the families I met that summer remained steadfast to the National Socialist dogma of the Nazi Party. Others, however, had rejected fascism. We 16

American high school students living that summer in Flensburg heard German excuses for the invasions of Denmark and Norway, and we were chastised more than once at social gatherings because American troops had stopped at the Oder River, a military decision that allowed the Russians – our allies in World War II – to occupy Berlin. All in all my AFS experiences were life shaping.

**SENIOR YEAR DECISIONS.** Throughout grammar school into high school I still wanted to be a paleontologist and study dinosaurs. My senior year at Santa Paula High School I applied to only one university – UC Berkeley – because at the time only Berkeley of all universities in the United States had an undergraduate major in paleontology. When I received my admission letter from Cal, I was confused: I had been assigned to a women’s residence hall; the letter was addressed to “Louise” Grivetti. My mother made me contact the registrar’s office immediately – my father just smiled. I entered Cal in September 1956 at the age of 17 and ultimately was assigned to Bowles Hall, the first residential college founded in the United States. It gives me great pleasure to recognize several of my Berkeley undergraduate and graduate school roommates and friends who are attending tonight.

**ADJUSTMENT TO UC BERKELEY.** Arriving at Berkeley, I quickly found that I was a little frog in a very huge puddle – everyone at Cal was smart! I had breezed through High School, barely studied, yet had maintained high grades. Keeping my same study habits – I was in for a shock: my first round of midterms at Cal were less than impressive, an “F” in Chemistry 1A; an “F” in German 1; and a “D” in ROTC (a required course for all lower division men at Berkeley at the time). But at least I had a “B” in my ½ unit PE fencing class! I immediately sought tutoring help from my parents at the astonishing cost of \$300 – almost half of my father’s take-home pay at the time. This \$300 would be equal in value to over \$2,400 in today’s dollars – and was a sum equal to my semester cost for room and board. By the end of the first semester, my tutors had helped raise my grades to an overall GPA of 2.1. What I learned through this experience was the stark realization that I would have to study hard and manage my time better. At the conclusion of my second semester I had elevated my GPA to an overall 3 point. Then my second year I thought that I knew it all and experienced what commonly is called the “sophomore slump.” My 3<sup>rd</sup> semester GPA was 1.6.

**SOVIET LAUNCH OF SPUTNIK.** During my 3<sup>rd</sup> semester at Cal – during my poor grade semester – an event occurred that impacted me and many of my friends. On October 4<sup>th</sup>, 1957, the Soviet Union launched Sputnik – the first earth-orbiting satellite. It is difficult today to imagine and understand the fear and uncertainty surrounding this event – knowing that the Soviets had this “thing” up in space orbiting the earth. We were fearful because we believed that subsequent Soviet satellites would hold nuclear devices, and with these A-bombs in orbit – and with the Kremlin leaders’ fingers on the button – then it was all over. Thinking back, what many of my friends and I eventually realized from this event was the Sputnik launch was beyond our control. Sputnik was up

there – and President Eisenhower would have to deal with it. And history shows that he and subsequent American Presidents did so.

DOMINO THEORY. During my undergraduate years at Cal we also were concerned about two additional issues. The first was the so-called domino theory – based upon the assumption that the communists would “roll down” southeast Asia from China, to Vietnam, to Thailand, to Burma, and then to India, then to Pakistan, and then into the Persian Gulf – and with all that oil – then it would be all over...

ATMOSPHERIC TESTING. The second concern was fear of “the bomb!” In the late 1950s some of my Cal friends and I believed that the “bomb” was coming: it was not “if,” it was coming, only “when.” What we ultimately learned from these go-political events was that good hopes and thinking about peace is naïve. We learned and accepted the principle that peace had to be achieved through hard work, diplomacy, and covert activities, coupled with on-site verification. These were lessons learned then, and with application today. People can wish all they want – but wishes do not assure national security. The bomb is real. Have any of you attending tonight ever seen the flash of an atomic blast? I have! Several A-bomb tests at Yucca Flats in Nevada were televised in the early morning hours back in 1955. Such blasts were terribly eerie and afforded us who watched a brief look into the potential abyss of Armageddon.

BREADTH CLASS: ART 1A. During my undergraduate years at Cal we were required to enroll in “breadth classes” [called GE classes today at UCD]. How we disliked these requirements: they were unrelated to courses in our chosen majors and seemed of little use to us. One of my Bowles Hall friends at the time, Bruce Ramsey, alerted me that Art 1A would be as “cinch” – since all Professor Daryl Amyx did was show slides. So Bruce and I enrolled in Art 1A. While many in the class slept – I was enthralled: this breadth course opened my eyes to the wonders of Mesolithic and Neolithic art, and especially the art of ancient Mediterranean and Middle Eastern cultures: Egypt, Greece, Rome, Phoenicia, Mesopotamia, and Persia. Little did I realize at the time that these images and influences ultimately would bring me into the academic fields of nutrition and geography. As a result of this class I made the mental commitment that after graduation and completing my military obligation, that I would travel through the eastern Mediterranean to see the ruins of ancient Egypt, Greece, and Rome – afterwards, I would settle down and establish my career as a paleontologist – but if that career option did not work out – then I planned to become a bush pilot in Alaska! The lesson learned: don’t judge a breadth course merely by its name ... you never know how the content of a course can influence your life forever.

SUMMER ACTIVITIES (ROUSTABOUT). Throughout my undergraduate years I worked summers to pay for my education. I worked as an oilfield roustabout for Texaco at South Mountain, near Santa Paula, and at San Ardo, north of Paso Robles. Minimum wage at that time was \$1.10/hour and with my roustabout salary at \$2.25/hour, I could save enough to pay for my university fees and expenses from September through the end of February or early March, whereupon, my parents funded the remainder of my academic year. Our school fees at Cal at the time were considerably lower than at UC campuses

today: during my first year at Cal in 1956 we paid \$45 per semester for tuition [and complained when the fee was raised to \$75 several years later]. We paid about \$300 per semester for room and board contracts; and an expensive textbook cost about \$10.00. [don't faint!].....

SAN ARDO OIL FIELDS. EXPLOSION. On August 11<sup>th</sup>, 1960, at the San Ardo oilfield north of Paso Robles, an explosion killed two of my co-workers and I was injured. I worked that afternoon as a welder's helper and through a management-supervision error, gas and oil leaked from the well-head into the gage-tank transfer lines where we were welding. I heard the initial psssssssssst of the escaping gas and jumped to the right – the explosion knocked me 10 feet or more through the air but outside of the blast cone and fireball. Everything around me was on fire; I felt terrible heat – but curiously no pain at the time [the pain would come shortly later after the adrenalin jolt had worn off]! I crawled through the burning brush to safety and survived. Had I jumped to the left when I first heard the hissing of the escaping gas, I would have died. From this dramatic experience, I learned first-hand that life is precious and accidents happen. One never knows the number of one's days: there is a passage in the Old Testament – "*Men go and come – but earth abides.*" When and where one dies is not foretold – the manner and place of one's death is just part of the grand lottery of life.

FARALLON ISLAND FIELDWORK. I graduated from Cal with my AB degree in June, 1960. In September of that year I entered graduate school at Berkeley in the Department of Paleontology. By this time I had given up on dinosaurs – there were few if any jobs available for dinosaur hunters, but there were significant employment opportunities for paleontologists and geologists who worked as stratigraphers by identifying microscopic fossils called foraminifera. During this period of my education my Major Professor Zach Arnold introduced me to the exciting world of living micro-organisms, and my interests shifted again from fossils to living single-cell organisms. I conducted my thesis research during summer 1961 on the Farallon Islands, off San Francisco. There, with the help of my brother, John, I studied the ecology and distribution of intertidal foraminifera. My Farallon Islands experience reinforced my desire to continue working with single-cell organisms. This desire, however, would change dramatically a few years later.

PART TIME WORK: RAGTIME PIANO PLAYER. During my last year in graduate school I held a series of part-time jobs. One was playing ragtime piano at LaVall's pizza on north-side, where the banjo players and I received free food and beer and developed a reasonable following. We were fired after the local Musicians Union threatened a picket line. As the saying goes: if you can't beat them – join them. So I joined the Musicians Union and was hired at Larry Blake's restaurant on Telegraph Avenue where I tinkled the ivories three nights a week playing dinner music and sing-along-songs downstairs at the Blake's Ratskeller. For each 5-hour effort, I received \$33.00; my weekly salary of \$99.00 was a sum that was twice the salary of a graduate student Teaching Assistant at the time.

**PART TIME WORK: PLANKTON ANALYST.** For my third part-time job during Graduate School I identified samples of marine plankton and single-cell algae or diatoms for a company called Engineering Science based in Oakland. I did not know at the time that this position ultimately would provide me the training and opportunity for the next stage of my professional and personal career. In spring 1962 just prior to graduation with my MA, I learned from colleagues at Engineering Science that the United States Public Health Service needed an officer to manage a plankton/diatom laboratory in Cincinnati, Ohio. The USPHS was one of the ways at the time to satisfy my military obligation, so I applied for the Officers Corps; passed the interview and physical examination; was sworn in and received a commission as Lieutenant [j.g.]. I then drove across the United States from Berkeley to Cincinnati in my 1956 Chevy and reported for active duty on July 1<sup>st</sup>, 1962. The lesson here: more employment opportunities result from personal contacts and networking, than by mailing, posting, or handing out one's polished resume.

**US PUBLIC HEALTH SERVICE.** Many in the audience tonight will recall that in 1962 American involvement in Vietnam was just beginning. For a while I toyed with the idea of receiving helicopter training with the US Marines. I did not wear glasses at that time, and I was a slim-trim 135 pounds having played intermural or intercollegiate soccer for four years. But I traded the idea of helicopters – and a potential post-military career as a bush pilot in Alaska – for a commission in the US Public Health Service, where our laboratory team identified fresh water diatoms and micro-invertebrates in the water supply system of the United States.

**CUBA MISSILE CRISIS: I.** In October, 1962, President Kennedy announced that the Soviets had established missile-launching capacity in Cuba. For those of you who remember the events now called the Cuba Missile Crisis, think back and recall the uncertainty and fear that you felt when President Kennedy said the following words on television that fateful Monday evening, October 22<sup>nd</sup>: *"It shall be the policy of this nation to regard any nuclear missile launched from Cuba against any nation in the Western Hemisphere as an attack on the United States, requiring a full retaliatory response upon the Soviet Union."*

**CUBA MISSILE CRISIS: II.** The next day on Tuesday morning, our Unit Commander assembled the Officers and assigned us tasks in preparation for a presumed atomic attack on Cincinnati. We were all very nervous and expected the worst.

**CUBA MISSILE CRISIS: III.** Some Officers were assigned to inspect civil defense bomb shelters within the greater Cincinnati area. They reported later that afternoon that most of the shelters lacked both food and water. How could this be? Did not our government have well developed Civil Defense plans? As the officers continued their reports, it was clear to us that Cincinnati was unprepared for an atomic attack! My specific assignment was this: after the presumed atomic attack on Cincinnati – my unit was to go to the USPHS motor pool, check out a vehicle, drive north out of Cincinnati towards Dayton, and establish a check-point to measure the radiation levels of civilian refugee/survivors. Our team did not think much of this assignment – given that our water quality laboratory



was in the middle of downtown Cincinnati – and we all would have been vaporized during a presumed attack! What I learned from this experience was that government plans to protect civilians can go awry, and that individuals and communities need to be self-reliant and not look to the federal government for help or protection. It did not surprise me – many years later – that the local, county, state, and federal responses to Hurricane Katrina were uneven and inefficient. But reason prevailed: the bomb did not come and the Cuba Missile Crisis defused and today is but a distant memory.

**BILL DARBY.** In June, 1964, I was discharged from active duty and accepted a position as Research Assistant with Professor William J. Darby, Department of Biochemistry, Division of Nutrition, Vanderbilt University, Nashville, Tennessee. Professor Darby was one of the most highly respected biochemists and nutritionists of the era, and it was through chance that I learned that he was assembling a research team in Egypt to investigate the role of the trace metal zinc in human growth and sexual maturation. During the last six months of my service period I had written more than 100 letters seeking employment in the Middle East – none had been successful. This employment opportunity with Vanderbilt came about through a chance meeting over lunch – I entered the commissary at lunchtime and sat down to eat at a table with another officer who I did not know. This chance meeting and conversation with this officer led to the Darby/Vanderbilt University contact. Where would I be today if I had entered the mess hall half an hour earlier or later, or had sat at a different table? I never would have learned of the Darby/Egypt connection. There are two basic life lessons here especially for both undergraduates and graduate students attending tonight: first, do not be discouraged in your job search – you have no reason to complain until you have been turned down by more than 100 potential employers. And when the next rejection letter arrives – do not despair – keep pushing forward – the next letter that follows may be the one that meets your aspirations and professional goals. The second lesson is this: doors of opportunity open and close daily – it may be chance that a door of opportunity opens to you – but chance is not the issue: you must recognize the opportunity and decide to step through that door.

**FOOD AND MEDICINE IN ANCIENT EGYPTIAN ART: I.** I contacted Professor Darby and he invited me to Nashville for an interview. After introductions his first question caught me off guard. He asked me: what do you know about ancient Egyptian art? That question certainly was not what I expected. But information from my Art 1A breadth class at Berkeley began to bubble-up into my brain, and I replied: Yes, I know something about ancient Egyptian art. Well, what's your favorite temple, he asked me? I replied: Hatshepsut's temple at Deir al-Bahari. What's unusual about that temple, he asked? The Queen of Punt is depicted as obese, or with a lymphatic disorder, and the queen herself commonly is depicted wearing a beard ...

**FOOD AND MEDICINE IN ANCIENT EGYPTIAN ART: II.** The interview continued: he asked: What did I know about food-related scenes in ancient Egyptian tomb art? I replied: the Tomb of Nakht at Thebes depicts men pickling birds, hunting in the marshes, winnowing grain, banquet scenes, and offerings of food for the deceased. And it went on like this for about 10 minutes and then the interview concluded. We had not

discussed the science of nutrition; had discussed nothing about zinc; and there were no questions regarding anything about malnutrition. His last questions to me were these: would you be willing to learn Arabic and live in an Egyptian village to assist with our project? I agreed. Two weeks later he offered me a position with his team in Egypt. What if I had taken a different suite of breadth courses? If my friend Bruce had not convinced me to take Art IA, could not have expressed any knowledge regarding ancient Egyptian art. Being able to remember Hatshepsut's temple at Deir el-Bahari and the tomb of Nakht at Thebes – were topics well learned from Daryl Amyx's Art 1A breadth class. What if I had sat down at a different table that fateful lunch – is it not obvious that I would not be here this evening? So I repeat: the issue is not chance or luck – the issue is making a decision to take advantage of opportunities presented.

CLINICAL SIGNS OF MALNUTRITION. I joined the Darby nutrition team in July of 1964. I was to be assigned to Egypt after I had completed a 6-week crash course and had spent 10-12 hours/day reviewing nutrition science textbooks. It was during these hectic weeks prior to arrival in Egypt that I mastered the clinical signs of malnutrition, and read everything I could about trace minerals – especially zinc. So I repeat: never underestimate the value and importance of GE courses. I secured my job in Egypt not because of my previous university degrees and not because of my Public Health Service qualifications and experience, but because of Professor Amyx's Art IA breadth course at Berkeley. As a result the course my life changed; as a result I met my life partner Georgette; and as a result I ultimately became a professor at UCD.

CAIRO. In late August, 1964, I was assigned as a civilian to the United States Naval Medical Research Unit Number 3, known as NAMRU-3, a facility located in Abbasaya, a suburb of Cairo, Egypt. I also must also share with you at this point – before going further – that my parents initially were appalled and unsupportive of my decision to turn my back on my previous paleontology training. My father lectured me: "What in the name of God has possessed you to give up six years of university training just to join some nutrition program in Egypt? How can you be part of a nutrition team when your food and dietary habits are so poor?" My father chastised me: "Look, if you want to go to Egypt, work as a micro-paleontologist and then go to Egypt after you retire when you are 65 – that is what a responsible person would do." But I told my parents that I was going. So in late August, 1964 – I sold my 1956 Chevy in Nashville for \$300 – a decision I often regret – and after a long TWA flight, found myself in Egypt – in the country governed at the time by Gamal abd al Nasser.

THE ROAD LESS TRAVELED. So I return to my primary thesis tonight, and special words for the undergraduate and graduate students attending: during your lives each of you will experience crossroads and key decisions, where the comfortable, anticipated path will lead you in one direction. But if your heart is committed to another, even an unorthodox direction, then consider carefully Frost's words and follow your heart:

*I shall be telling this with a sigh  
Somewhere ages and ages hence  
Two roads diverged in a wood*

*And I took the one less traveled by  
And that has made all the difference.*

NAMRU-3 HOSPITAL, CAIRO, EGYPT. My immediate supervisor at NAMRU-3 hospital was Dr. J. D. Northway. Our initial attempts in late 1964 to implement the zinc field trial, however, failed due to political problems. These problems ultimately were resolved through the fine efforts of another colleague Dr. Harold Sandstead, Jr., who some of you in the audience know personally.

EGYPTIAN DELTA. During my first six months in Egypt I became sufficiently fluent in Egyptian Arabic so that when our team resumed the zinc field trial, under the supervision of Dr. James Pucket Carter, I had sufficient language skills to coordinate the day-to-day zinc-iron-placebo field trial and to organize the quarterly medical examinations of the school children enrolled in our project. Our field site was the village of Sindion in the southern part of the Egyptian Delta, about an hour's drive north from our hospital in Cairo. Every morning six days a week I drove a US Navy ambulance and picked up the Egyptian nurses and physicians on our team. It was during this period of work in 1965 that I met my future wife, Georgette Mayerakis.

SHISTOSOMIASIS. Several critical events shaped my life while working in Egypt. The first drew me away from any future interests in micropaleontology and single-cell organisms, and ultimately into the integrated fields of geography, health, medicine, and nutrition. One morning while working at Sindion two boys approached me with a concern regarding their friend. One of the boys said to me:

*Mr. Louis, we are worried about our friend.*

*Why, I asked in return?*

*Because, Mr. Louis, when the three of us go down to the canal and piss, his piss is always yellow or white, and as you know, Mr. Louis, the true color of piss is red!*

Hematuria – or blood in the urine – is one of the classic physical signs of shistosomiasis or bilharziasis, a debilitating parasitic disease where worms enter the body through contact with irrigation water; the worms mate inside the body; the females lay eggs with sharp spines; these eggs then pass through the human host's urinary system and rip and tear tissue causing extensive blood loss that passes out with the urine. After just two urine tests, 95% of the students at the Sindion school tested positive for shistosome eggs and/or hematuria. The lesson I learned from these two perceptive Egyptian village boys was that health is relative. I would expect that any of you – if you looked down in the toilet bowl later this evening and saw blood in YOUR urine that you immediately would make an appointment to see your doctor. But not so at this time in Egypt: to these Egyptian boys bloody urine was considered normal. The oddity was NOT having red urine. This event was so pivotal in my life that I renewed my contract with Vanderbilt University, and I made the professional commitment to remain in a health, medical, nutritional field and to work internationally.

6-DAY WAR. A triad of events during 1967 also proved critical and life-shaping. These were: my marriage; experiencing first-hand the 6-Day War between Egypt and Israel; incarceration and evacuation from Egypt; and subsequent refugee status in Greece. With war clouds looming – Georgette and I decided to move up the date of our marriage, originally scheduled for the first week of July. With the blessing of Georgette’s mother we were married twice in late May of 1967: first on Thursday May 25<sup>th</sup> in a civil ceremony, and the following Saturday May 27<sup>th</sup> in a Greek Orthodox service. The next day, Georgette was required by the American Embassy to evacuate to Greece as an American dependent. Although I was a new groom, the American Embassy required me to remain behind in Egypt. Hostilities broke out on Monday June 5<sup>th</sup> when Israel launched a pre-emptive strike on Egypt, whereupon all Americans remaining in Egypt were declared *persona non grata* and expelled. The Egyptian government ordered our evacuation from Cairo by train to Alexandria on Tuesday evening, the 2<sup>nd</sup> day of the war.

DEPORTATION BY TRAIN AND BUS. And something like these photographs from a long past terrible war in Europe – we were herded onto a train and guarded by armed soldiers – presumably headed to safety. From Cairo the train rolled northward and eventually we reached the eastern outskirts of Alexandria. We were ordered to disembark by other armed soldiers, then forced onto busses to be taken to an unknown destination – one that fortunately turned out to be a hotel in the Mantaza District of eastern Alexandria. There, we were guarded and placed under “hotel arrest.” We were treated civilly, but not permitted to leave. On Saturday morning – June 10<sup>th</sup>, the last day of the war – we were roused from sleep about 3:45 AM, again escorted by armed guards, and forced onto busses a second time with no certain knowledge of our destination. Fortunately, we were taken to the port of Alexandria, where our possessions were searched; we were put aboard a ship chartered from Greece; we were about 450 evacuees aboard a ship that normally carried about 180 passengers: there were insufficient numbers of lifeboats and lifejackets. This ship, named the *Carina*, left the port of Alexandria late in the afternoon and we were met at the 12 mile limit by two ships from the U.S. 6<sup>th</sup> fleet, a destroyer and a destroyer escort, who led us across the Mediterranean to safe-haven in Greece. Dr. Charles Halstead, Professor of Internal Medicine here at UCD, and attending tonight – can attest to these events as he likewise was aboard the *Carina*. Professor Halstead ...

LOTTERY AND CHANCE. What I learned from this personal experience as a civilian during wartime was that we humans basically are naïve. While we expect the best from our friends – and at least civility and decent treatment from our enemies – human survival during wartime is dictated primarily by chance and the ethics/moral values of those in charge. On that early morning in Alexandria, Egypt, we incarcerated Americans – held only because we were Americans – we merely were pawns in a grand game of political chess – for which there were only three outcomes: life and freedom, life and incarceration, or death. In our case, we received life and freedom. But we received this gift only because our guards followed orders not to do the unthinkable, and only because of a policy of decency held by the government of Egypt at that time towards us: we were granted our lives, freedom, and allowed to evacuate Egypt basically without

incident – for which those of us who experienced these events always will be grateful to those who were in charge.

TRANSITION: FOOD: THE GIFT OF OSIRIS. Reaching safe-haven in Athens, I was reunited with my wife, Georgette. After a three-month sojourn in Greece – due to complications and time spent in securing an entry visa for my wife – we eventually returned to Nashville. During my second Nashville period, Bill Darby, Paul Ghalioungui, and I began writing our book on food, health, and medicine in ancient Egypt – an enjoyable collaboration that took several years to complete. Our efforts ultimately would be published as, *Food: The Gift of Osiris*. The lesson learned from this collaborative authorship experience was that we three – each with very different academic and professional backgrounds – were able to produce a book more insightful than if the topic been approached by an Egyptologist working alone.

TRANSITION: WHAT AND WHERE TO STUDY. By 1970 (before our book was published) it was time to resume my education: it made no sense holding a Master's Degree in Paleontology and being employed by the Department of Biochemistry, Division of Nutrition at Vanderbilt, so Bill Darby encouraged my return to school. After applying and being accepted into several programs, I reviewed my options and enrolled as a Ph.D. Student in the department of geography at UC Davis to work with Professor Frederick Simoons. In September 1970 when I arrived on campus I was classified by the UCD Admissions office as a “mature, older” student.” I was 32 years old; my wife and I had both given up well-paying jobs so I could start graduate school. I was nervous and apprehensive regarding whether or not I would be successful in completing my Ph.D. My fellowship was \$209/month with tuition and school fees paid [substantially different than today]. My wife worked in the Graduate Studies office in Mrak Hall. We lived in Woodland where our rent was \$150/month.

RETURN TO GRADUATE SCHOOL. My graduate student years at UCD were influenced by a new wave of mentors, confidants, and a fine support system. I owe much of my graduate school success to my graduate student colleagues; one of them – Helen Issel – is here tonight. I also owe much to my professors (especially Professors Simoons, Hurley, and Pangborn already mentioned), and to the special support and advice I received from other faculty members, among them Duane Brown, Steve Jett, Gerry Russell, Howard Schutz, and others too many to list. I also was fortunate to receive strong encouragement from former Chancellor, Emil Mrak who provided me with considerable advice. But most of all I owe my success in graduate school to my wife, Georgette, who listened endlessly to my complaining – who believed in me more than anyone else – that I could complete my degree. Thank you Georgette!

NUTRITIONAL SUCCESS DURING DROUGHT: I. In early 1973 I passed my Ph.D qualifying examination and embarked upon a period of dissertation-related fieldwork in southern Africa. The location was chosen – in part – because of networking and keeping in contact with past colleagues in Nashville. Professor James Pucket Carter, my former supervisor in Cairo, was now affiliated with Meharry Medical School in Nashville. Jim hired me to be the Administrative Officer for his new USAID Maternal and

Child Health/Family Planning project that he had initiated in the eastern Kalahari Desert of the Republic of Botswana. Between April 1973 and June, 1975, I tended to my Meharry project duties at the Ministry of Health, then after work in the evenings and on weekends and holidays I collected data for my dissertation.

NUTRITIONAL SUCCESS DURING DROUGHT: II. The Botswana experience was one of hard work but great pleasure. The country was flat – really flat [this image shows the highest point in the country]. Botswana is about the size of Texas, and in 1973 the country had a population of about 800,000.

NUTRITIONAL SUCCESS DURING DROUGHT: III. My primary dissertation research question was to answer an enigma: after eight years of severe drought between 1965-1973 the Tswana people in the eastern Kalahari Desert were not malnourished – whereas a drought of equal intensity during the same time period throughout the Sahel of western Africa – led to the death of more than 2 million people from starvation and malnutrition. Here were similar peoples living in similar environments: but some flourished during drought while others perished. Why? One of the keys to Tswana nutritional success that I learned during this research period was the importance of sustained use of edible wild plants during drought and/or civil unrest/war – a theme that ultimately would characterize the early and middle years of my research activities at UC Davis.

NUTRITIONAL SUCCESS DURING DROUGHT: IV. I arrived in Botswana at the end of 8 years of drought: during my two years of active field work I never saw overt protein-calorie malnutrition, or overt evidence of vitamin or mineral deficiencies. The people appeared well nourished even after eight years of drought. The primary lesson learned from this experience in southern Africa was basic, but controversial: drought did not cause famine – famine was caused by poor food distribution networks, breakdown of social order, and inability to recognize edibles in one's environment. The social food-sharing and food distribution networks had been maintained during drought in the Kalahari region, but had been lost by many cultures in the Sahel states of West Africa. May I add here too, that when Georgette and I lived in Botswana, the second most joyful experience of our lives after our marriage happened – when we became parents to our daughter, Joanna Elene Grivetti.

EARLY RESEARCH AT UC DAVIS. After completing my work with Meharry and on my dissertation, I applied for faculty positions at UCLA and at UC Davis. In April, 1976, I was hired as an Assistant Professor at UC Davis, with appointments in the Department of Nutrition (80%) and Department of Geography (20%). Through the years my graduate students and I took an eclectic approach to research, as we conducted field work in Africa, Asia, Europe and the Americas – with appropriate lessons learned from each activity. I am very proud of my graduate students. I cannot tonight list all of their activities – and the lessons we learned – but in the short time that remains I would like to present several examples for your consideration.

EDIBLE WILD PLANTS: NIGERIA PROJECT. Cassius Lockett worked in eastern Nigeria among both pastoral and settled Fulani nomads and made the important observation that Fulani women commonly walked 24 miles/day round trip from home to sell food for cash or to barter at local markets, whereas their husbands rode bicycles to the same destination. This gender difference was because Fulani men considered it culturally inappropriate for Fulani women to ride bicycles. So when you go shopping later this weekend in Woodland, don't be a wimp: walk from Davis to COSTCO and then carry what you bought back to Davis with you – that is essentially what these women did!

EDIBLE WILD PLANTS: THAILAND PROJECT: Noel Johnson conducted her field work in northeastern Thailand, among a traditional Karen population that relied extensively upon edible wild plants for maintaining their excellent nutritional status. She was a keen observer and coined the term “nutritional extinction,” which now is widely used in the ethnobotanical literature to describe the condition whereby individuals and families may starve in the midst of food plenty – because they do not recognize the potential dietary uses of plants growing within their region. The potential edibles are there, but in essence, the plants are nutritionally “extinct.”

EDIBLE WILD PLANTS: GREECE: THESEUS PROJECT. In 1985 I led two volunteer teams of plant collectors to Greece, where we sought botanical specimens that sprouted in the midst of excavated archaeological sites. We called this activity the *Theseus Project*, after the mythological Greek hero who had walked from Trozene to Athens to reclaim his kingship. We amassed more than 2000 sheets of pressed plant specimens that now are deposited in the UCD Herbarium.

EDIBLE WILD PLANTS: GREECE: WWII FAMINE PROJECT. Building upon the *Theseus Project*, Antonia-Leda Matalas and I studied how Greeks living in urban Athens secured their food during the Nazi occupation of the city during World War II and the terrible winter of 1941-1942 when approximately 300,000 Athenians starved because the Nazis restricted food imports and most residents were forbidden to leave the city. Those who survived relied heavily upon edible wild plants and a variety of what today would be called “lesser” animal foods (birds, cats, dogs, insects, mice, and various frogs and snakes). The lessons learned from this research also were critical: events such as wars, wide-spread civil unrest, and occupation by foreign powers – happen quickly. For months during and after such events, food supply systems are destroyed. Consider your own case: would you know how to feed yourself and your family in Davis if food supplies from the outside were cut off? After the Davis supermarket and local market shelves have been looted of all remaining food items, and electricity to most sections of town cut off, what would you do to feed your family? Do you know what is edible and growing in your neighborhood and what is not? Could you differentiate between safe and toxic plants and animals? Would you eat laboratory mice; what about pet dogs and cats; what about the fish and turtles in Putah Creek near Mrak Hall? Do you know how to raise food in your backyard? Where would you get seeds? How long does it take to grow food? If you answered “no” or “I don't know” to these questions – perhaps you should have a 6 month's supply of non-perishable food in your dorm room, apartment,

house, or garage. But also consider that even if you amass this emergency food supply, are you going to share it or not? If yes, share it with whom; if not, how will you protect your food supply from roving gangs of vandals and thieves? My students and I have learned through the years that these and similar questions are posed and answered daily throughout the world today in the 21<sup>st</sup> century. If you have not experienced or considered them, then truly you are among the lucky.

HMONG URBAN GARDEN PROJECT: I. FROM THE HILLS OF LAOS. Jan Corlett worked among Hmong refugees to Sacramento, California – families who had fled Communist aggression and warfare conditions within the hills of Laos ...

HMONG URBAN GARDEN PROJECT: II. ACROSS THE MEKONG RIVER ... families who risked life and limb and crossed the Mekong River into Thailand, where they were sequestered for months and sometimes years in United Nations sponsored refugee camps ...

HMONG URBAN GARDEN PROJECT: III. AIR-LIFT TO SACRAMENTO ... families who ultimately were air-lifted from Thailand to Sacramento, California, to start anew their lives ...

HMONG URBAN GARDEN PROJECT: IV. GRANDMOTHER'S GARDEN ... and when settled in south Sacramento, these grandmothers started urban gardens in vacant lots and raised traditional Hmong foods. Most of these plant foods never before had been analyzed for their nutritional/mineral content.

HMONG URBAN GARDEN PROJECT: V. SAFE FOOD AND NEW DIETS ... But why were these lots vacant? Could they possibly be toxic sites with heavy metal contamination? So we tested both soil and garden plants and confirmed no heavy metal contamination of the foods grown. What we learned from these strong Hmong grandmothers was that they commonly held the key for maintaining cultural-food practices and the survival of Hmong dietary customs within in this urban setting of Sacramento, California.

ETHNOBOTANY THEMES: XIOS, MASTIC: I. Before I conclude with comments on chocolate-related issues, I wish to share a brief observation about the fragility of life, and the importance of ethnobotany and the study of plants. The setting for this last example is the eastern Aegean Greek island of Xios, an island important historically, but one with a dark past.

ETHNOBOTANY THEMES: XIOS, MASTIC: II. Is it conceivable that the geographical distribution of a plant could determine human freedom vs. slavery or human life vs. death? The answer, unfortunately, is yes. Consider the *Pistacia lentiscus* tree with a native habitat throughout the Mediterranean basin – you can even find it in the UC Davis arboretum if you choose to search for it. When farmers cut its trunk and branches a resin called mastic is exuded. This resin, with important culinary and economic value, has been highly regarded for more than 2,500 years. Although the tree grows in the



region from Portugal on the west eastward to Turkey, and across North Africa into the Middle East, the resin can be harvested only in one small geographical area: the Greek island of Xios. Furthermore, a geo-botanical line may be drawn across the island from west to east, one that separates the southern third from the northern districts of the island. Below this line to the south, the resin hardens: above the line and throughout the Mediterranean basin, the mastic resin remains soft and sticky. “So what,” you say: sticky vs. hard? Why is this even worth mentioning? Here is why ...

ETHNOBOTANY THEMES: XIOS, MASTIC: III. Prior to 1821 Xios was the island jewel of the Mediterranean. Many European nations had their embassies here. Xios was the western terminus of the Silk Rout that linked China with the Ottoman Empire. The island was wealthy because of mastic production and the vast bulk of the harvested resin was sent to the Ottoman Caliph in Constantinople. In 1821 the Xians joined other Greek revolutionaries and revolted. The Caliph was displeased at the interruption of his mastic supply and ordered Xian islanders to be dealt an object lesson!

ETHNOBOTANY THEMES: XIOS, MASTIC: IV. The Caliph sent Turkish troops to invade the island in order to secure a continuous supply of the mastic resin. Islanders living above the geo-botanical line were expendable since none were resin harvesters. Many individuals north of the line fled the advancing soldiers and took shelter inside the monastery of Neo Moni – seen here – but those who sought refuge inside this holy place were seized ... and what followed is unthinkable.

ETHNOBOTANY THEMES: XIOS, MASTIC: V. The evidence cannot be denied. This view reveals just part of the remains of Xians who were executed; their bodies have been exhumed and the bones today are locked inside these cases – lest anyone forget and say such things never happened. The skull at the lower left provides forensic evidence for a scimitar thrust through the head. Others were executed by gunshot wounds to the head, leaving entry and exit wounds. Most of these skulls, however, show no overt bone-related injuries. Those unfortunates without such head trauma were executed using the procedure called *khazouk* – where captives were lifted, dropped, and impaled through the anus upon pointed stakes planted in the ground – a horrifying execution technique that extended suffering for several days before death.

ETHNOBOTANY THEMES: XIOS, MASTIC: VI. The villages were pillaged north of the geo-botanical “mastic line” where the resin did not harden. This is one such site, the village of Anavatos. When the male defenders were killed, the surviving women – knowing that they would be raped and carted off into slavery – made a collective decision: together, the women with their small children climbed to the precipice at the top of the village, and holding their babies and children in their arms – they jumped to their deaths. The mothers chose the freedom of death, instead of a life of degradation and slavery.

ETHNOBOTANY THEMES: XIOS, MASTIC: VII. So why mention this historical unpleasantry tonight? What possible lesson is to be learned from this tragic event? In my case the lesson is personal: my wife’s ancestors and immediate family are from Xios

Island. Our ancestral island village is Vessa located just south of the geo-botanical mastic line. At Vessa today, the mastic resin still is collected. And less than a quarter mile north of the village ... the resin does not harden. In 1821 the invaders allowed my wife's distant relatives to survive – because they grew and tended the trees that produced mastic resin. In my case the lesson is personal: the fact that my wife and our daughter were even born was determined by the geographical distribution of a sub-set of unique mastic trees – simply because our family happened to originate from a village located geographically south of the line where the resin hardened.

ETHNOBOTANY THEMES; XIOS, MASTIC: VIII. When I worked on Xios I wrote following passage in my field notebook at the time after staring at these cases of bones:

*What have you learned by standing here,  
Midst ancient bones from yesteryear?  
What are the lessons you can share,  
With peaceful peoples everywhere?  
We must recall our distant past,  
If truly we want peace to last,  
But then forgive – and build on trust,  
Then work for peace, a peace that's just.*

FOOD AND HISTORY: CHOCOLATE. I. And now at last we come to chocolate. I have been fortunate in my academic life to have developed partnerships with a wide range of scholars and funding agencies – but none has been more valuable and satisfying to me than my friendship and support through the years from my colleagues at Mars, Incorporated, especially Forest Mars Jr., Deborah Mars, Howard-Yana Shapiro, Harold Schmitz, Rodney Snyder, and many others.

FOOD AND HISTORY: CHOCOLATE. II. It is to chocolate that I owe much of my recent research activities and efforts that culminated in 2009 with publication of our book: *Chocolate: History, Culture and Heritage*. Here is just a taste of some of the images from our text: in the upper left is the wonderful lithograph by Colmenero de Ladesma, dated to 1631, that we chose for our book cover – depicted is an Aztec/Mexica dignitary who presents the gift of chocolate to the Greek god Triton sitting aboard his “sea chariot,” as nymphs cheer his action and cavort with pleasure in the ocean – an allegorical image that represents the transfer of chocolate from Mexico to Europe. Below left are the silver chocolate-related preparation utensils used by French Queen Marie Antoinette in the years prior to her execution. To the right is a lithograph showing the transport of cacao seedlings in special containers – used to transport the plants across the Atlantic.

CURRENT CHOCOLATE RESEARCH. Most recently, my nutrition colleague Nilesh Gaikwad and I have joined a team of archaeologists at Kennesaw State University in Georgia and the University of British Columbia. Our efforts include the analysis of most ancient pottery as we search for chemical signatures that reveal cacao-related residues. In our most recent publication in the National Academy of Sciences we reported the

earliest *de facto* evidence for human use of cacao-related products based upon analysis of Olmec period pottery from Mexico dated to c. 2000 BCE or 4,000 years ago. Currently, our team has initiated a project in the western Amazon basin along the east slopes of the Andes Mountains. Later this year we will test pottery from these sites dated to approximately 6,000 years ago. We know that these ancient peoples in South America did not make chocolate in the strict sense, but we suspect that they prepared a beer-like beverage by fermenting the pulp found inside cacao pods. We expect to report our findings next year. So how did I get linked-up with chocolate? This association, like many others in my life, came about through a chance opportunity and meeting on the Davis campus with Harold Schmitz, Scientific Director for Mars, Incorporated. I had finished a lecture and walked back to Meyer Hall. There, I encountered Harold speaking with Professor Carl Keen, then Chair of our department, and Carl introduced us – and the rest is history. But what if after class, I had decided to drive directly home; what if I had decided to go to the library; or what if I had decided to go to the Silo for coffee. Would I have met Harold or held the conversation that ultimately led to Mars, Incorporated funding our research on chocolate history? What do you think? Doors of opportunity open – and they close; opportunities are presented once – and sometimes never again; what you decide to do when presented with a door of opportunity – is up to you. Be prepared for the next door that opens for you!

CONCLUDING POINTS I: In conclusion, I wish to re-thank my mentors who encouraged me along my curious, non-linear academic path – Professor Daryl Amyx who taught me Art1A; Professor Zach Arnold, who taught me the joys of micropaleontology, and who convinced me that single-cell organisms held more exciting potential than dinosaur bones; Professor William J. Darby, who taught me how to balance science with the humanities; Professor Frederick Simoons, who taught me how to think and write like a geographer; Professor Lucile Hurley, who encouraged me to take food science and nutrition science courses to augment my Ph.D training in geography; Professor Rose Marie Pangborn, who shared with me her wisdom and taught me how to be a professional at UC Davis; and others in my life almost too many to mention who encouraged me through the years. But I wish to name three more: my wife – Georgette Stylinos Mayerakis Grivetti; our daughter – Joanna Grivetti-Moore; and my son-in-law – Shaun Moore. I especially wish to honor both Joanna and Shaun tonight, who protect and serve their respective communities of Richmond and Martinez, California.

CONCLUDING POINTS II: So to you undergraduates attending I share with you these parting words: if you take only one thought home with you tonight it is this – relish and embrace your “breadth courses” – you never know what the future holds. Be ready when the doors of opportunity open – decide to step through as I did. I truly hope that you will have a “breadth course” experience of the type that I had.

WHAT IF I HAD NOT TAKEN ART IA? So we arrive full circle this evening: and I say to you tonight – there came a crossroad in my life ...

*I shall be telling this with a sigh  
Somewhere ages and ages hence  
Two roads diverged in a wood  
And I took the one less traveled by  
And that has made all the difference*

#### MARS AMERICAN HERITAGE CHOCOLATE.

So as we end tonight...I wish to thank my colleagues at Mars, Incorporated, for supplying two types of chocolate for your enjoyment... the first is called American Heritage, and was developed using a variety of early American colonial era chocolate recipes. American Heritage chocolate reflects a coarse grind, reminiscent of how chocolate beans were stone ground in colonial America and has a hint of various spices and peppers that would have been characteristic of the chocolate products produced during Colonial America.

MARS DOVE CHOCOLATE. The second kind of chocolate this evening represents different varieties of Dove Chocolate: Dove Dark, Dove Milk Chocolate, and Dove Dark with Cherry swirls. Both the American Heritage and Dove varieties were supplied for your enjoyment by my colleagues at Mars. All of these chocolates are less than one month old – but this last item – [show] – is considerably older ...

APATOSAURUS BONE – FEMUR. This is the proximal end of a femur from a young Apatosaurus – a fossil dinosaur bone that I dug up and collected with my father and brother John during the summer I was 12 years old – the collection site was not far from the original Grivetti homestead northeast of Harlowton, Montana. As you leave tonight munching the chocolate pieces that were manufactured just last month, I invite each of you to pass by the front table and reach out and touch this fossil; touch something really ancient and get a sense of time and place in the great scheme of things ... given that this piece of an ancient fossil reptile is approximately 150 million years old! Doing so tonight – you will have truly experienced – *From Dinosaurs to Chocolate*.

THANK YOU.....