American Meteorological Society
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TAPE RECORDED INTERVIEW PROJECT

Interview with:

primarily: **Heinz Lettau,** contributions by: **Katharina Lettau nee Doerffel**

March, 2002

Interviewer: Sharon Nicholson

Notes:
Fonts are used in this draft: The interviewer's questions are in Helvetica; responses in Palatino, preceded by K.L. where appropriate
"Italics " in quotation marks are used for terms in German or other foreign languages. As it is legal in German writing, the *"Umlaute"*, i.e., ä, ö, ü, are most often expressed by: ae = ä, oe = ö, and ue = ü.

Part I: Preschool and Highschool Years

Appendixes to Part I:

[H.L.: This Draft Copy was tentatively printed out in March, 2004]

Preface: Earliest memories from pre-worldwar I in Eastprussia -- Family roots and stories about life in the home country -- Education with financial support by parents -- Effects of worldwar I and of the great depression -- Beginning of interest in meteorology and geophysics -- Discipline at boy's and girl's highschool; decently attired without dress codes -- Anecdotes characterizing teacher-student interactions at German high schools -- Lasting impressions on european history.

The date is March 10, 2002. We are interviewing in a very beautiful location, Mt. Pleasant, South Carolina, just outside Charleston. I am Sharon Nicholson, Professor of Meteorology at Florida State University and a former student of Professor Lettau's. I would like to begin by asking what's the first thing you remember as a child and how old were you with your first memory?

I was four years old. However, only at the age of nineteen was I able to establish the date for the earliest but still vivid memory. It was being led at Mother's hand through a strange town to a little house with a green front door flanked by flowering bushes; what fascinated me was the wooden handle beside the door which, as Mother pulled it, caused the musical striking of a swinging bell above the door. Later I knew that Mother was born in the small town of Tapiau about 12 miles east of Koenigsberg. My first chance to visit Tapiau came during my first semester at my hometown university. I had asked Mother for the street address of her birth place. When I walked to that address, I came to the a little house with the wooden handle beside the frontdoor of my memory. Back home again Mother told me that only once she had taken me along to Tapiau. The occasion had been to celebrate in 1913 the retirement of Carl August Pechbrenner, her father, from the Federal Postal Service. This had been her last visit to Tapiau because her parents and the oldest and unmarried sister moved to Koenigsberg and lived for their last years in a flat of my father's house.

Let's go back again; when and where are you born?

Born in Koenigsberg, the capital of Eastprussia, the easternmost province of Germany, at that time when Kaiser Wilhelm II resided in Berlin, 500 km to the west-south-west, andTsar Nicholas II in St Petersburg, 650 km to the north-north-east. Koenigsberg [i.e.,"king's mountain"], founded in 1255, was named after the

Bohemian King Ottokar II who reigned in Prague 1253 - 1278. He had been asked by Conrad of Masovia, Duke of Poland, for help to christianize and subdue the native inhabitants, the Pruzz or Old-Prussians. Around 1300 AD, Poland's eastern border was the vistula from the Baltic Sea to Cracow. Ottokar was in liaison with the Teutonic Knights. Eventually, this Order of originally the Maltesian Knights, opened with papal sanction the southern and eastern Baltic coast to the missions of church and trade.

What's Koenigsberg called today?

A Russian Army conquered its ruins after 3 months of siege in April, 1945. Stalin named it Kaliningrad after the first President [1919-1923] of the Soviet regime. The entire German population of the province [more than 2 million] was forced to flee or to leave "voluntarily". In fact, it was an enormous act of ethnic cleaning. Today, only Russians live in the Oblast Kaliningrad. If you don't mind, Sharon, I am taking off at a tangent. I had in 1974 a United Nations [WMO] three-month assignment at Cairo sharing it for 2 months with a meteorologist from Leningrad. I wanted to find out how an educated Russian felt about the ethnic cleaning of my hometown and province. At a friendly get-together I remarked that if I would have been born at the same place, but forty years later, then I would be a Russian. He said nothing but when he left for home he gave me a reprint of one of his publications dedicated: "To my Fellow-Russian". I reciprocated with one of my reprints dedicated:"To my Fellow-Egytian".

Very good, and what year were you born?

1909; I can call myself a man of all decades of the 20th century.

And now you made it to the 21st century

I never expected to live longer than my father and my elder brother; both died at age eighty-five.

Well, now you're ninety-two, and Kate will be ninety-two in a few months. Both of you are in incredibly good health.

Thank you. My good doctor saw me last week and found that my flaws are not worse than five years ago. I have learned to live with a 95% blind right eye [since my last years in Madison due to glaucoma] and arthritis in my left knee.

Any idea why you have this wonderful longevity ?

I think it is to a great part due to the company of Kate; her cooking keeps me going. Another part could be due to my ancestry of immigrants from France on Father's side and Austria on Mother's side. After revocation of the Edict of Nantes (1685) more than 40,000 Huguenot families made thir way to protestant countries. A few went as far as the United States [including South Carolina], others to England or Calvinist Bohemia. A majority followed the offer of asylum by the Duke of Brandenburg and a great number settled in Eastprussia. My family name indicates French ancestry since *Lettau, Lettaux, or Letteau* is more common in France or French Canada than in Germany. The counter-reformation succeeded in the German Empire much later and less violently than in France. The Archbishop of Salzburg (1732) decreed 'peacefully' that Protestants either must re-convert or emigrate from his domain. More than 10,000 'Salzburgers' chose to leave. The majority accepted the offer of asylum by the King of Prussia to settle in East Prussia. My mother's maiden name indicates Austrian ancestry. Only healthy people are most likely to have survived the long treck to Eastprussia.

Do you expect to make it to one hundred?

I have no idea and don't like to make a forecast

Well, I note that Kate was lamenting the fact she can't find anybody to play table tennis with her here in Mt Pleasant. So, she certainly is in very good health too

Let me add a bit on sport activity for keeping me in good health. In Koenigsberg sailing, rowing ,and kayaking were very popular. I began with rowing. All highschools owned, or had access to, boats housed at a Pregelriver pier. During the 8th and 9th grade I was #3 of a 'Coxed Fours' staying together with the same three class camerades as a team. At 8th grade we won a first prize in a province-wide regatta on the Nogat River in front of the historical Marienburg. I took rowing up

again 1931/33 when I was a Research Assistant at Potsdam. The story of my kayaking and sailing will come up later. I don't assume that rowing contributed to longevity. However, my right shoulder is still a little wider and stronger than my left one.

How about telling me about your family, your mother and your father and did you have brothers and sisters ?

I had one 5 years elder brother, Herbert L., and Kate had one 2 years younger brother, Heinz D. My brother survived the war but her brother unfortunately was kept in a Russian Prisoner-of-War camp and died long after the guns were silent. Kate and I have three sons and it used to amuse friends in Germany to hear that one was born in Saxony, one in Prussia, and one in Bavaria.

None of them were born in the U.S?

Right, but all are fully Americanized; each married his Wisconsin girl, one of German, one of Norwegian, and one of Irish ancestry. I never could call myself Americanized. My dialect is noticeable. In fact, it is getting more pronounced because Kate and I converse most often in German. During the years when I taught classes at the University of Wisconsin, my colleagues suggested: "Don't loose your dialect, it is not too heavy but really beneficial because it just keeps the students awake". Suomi once noticed that my effort to pronounce 'th' properly resulted in my amusing version of 'THouSwind' for 'SouTHwind'.

Yes. Your accent in class did keep us awake. Do you remember me imitating your accent at one of the department winter-solstice parties?

Sorry, I forgot about it or you did it so well that I did not notice.

What did your mother and father do?

My father had three younger brothers. My grandfather was the last of a series of forest rangers in the wooded lake country of Eastprussia. All four boys wanted to become forest rangers. It was in the last quarter of the 19th century when my

grandfather could tell his sons that they got a better education than he had received; fortunately, too good to be like him in the private service of Count Lehndorff, but unfortunately not good enough for a career in the governmental forestry service. My father decided to learn a trade and wound up in Koenigsberg. That was the capital of Eastprussia, Germany's dairy land, comparable with Wisconsin as America's dairyland. My father succeeded as an independent merchant by organizing a small group of dairy farmers in Samland County for daily milk delivery by rail to Koenigsberg, then a city of about 220,000 inhabitants.

So your father was not a scientist, and basically a dairy distributor.

Yes, dealing with milk, butter and Tilsit cheese. But he understood and furthered my interest in natural sciences. As son of a ranger he was born and grew up deep in the woods. He taught me more about woodlore than I would learn in classrooms. In Eastprussia the first snow used to come by the end of October. I remember several occasions when my father took me to nearby woods to look for tracks of the wild inhabitants. I learned to distinguish between tracks of rabbits and hares, foxes and dogs, squirrels and martens, etc. On such occasions he used to tell stories from his boyhood like the one when his father had discovered the tracks of a wolf. He reported to Count Lehndorff who got excited because there had been hardly any wolves in Eastpussia since the Napoleonic Wars. He wanted to shoot the intruder. On the ranger's horse-drawn sledge the count and grandfather followed the track. It led them eastward to the forests first of one, then of another landowner. Law and courtesy demanded to obtain permission for moving in and shoot any animal. The count got it for the wolf and grandfather found the track again. By now the wolf had crossed the border into Russia from where it had come originally and where the count could not go. I should add that unwittingly my father laid some ground for my interest in geophysics. His business required frequent visits to dairy farms in the Samland. Going with him helped me to understand a landscape formed by the latest ice age. Samland county is bounded to the west by the 'Amber Coast' of the Baltic Sea; to the north by a scenic escarpment and boulder-strewn beaches, further eastward by fine sandy beaches and the shore of *"Kurisches Haff"*, now *"Kurski Zaliv"*, a lagoon of about 1,600 sqkm; to the south by the shore of *"Frisches Haff"*, now *"Vislinski Zaliv"*, a lagoon of about 1,200 sqkm; further east by the wide valley of the two arms of the river Pregel, occupying north and south sides of an *"Urstrom*

Tal" , a German language term used for a flat wide-bottomed channelbed formed by meltwater of the Fenno-scandian ice sheet. Years later the *"seiches"* in both Haffs were the subject of two of my scientific papers. But let me refer for more detail to Appendixes I.1 and I.2 since right now, you may want more about ancestors.

Yes, how about your mother and a little bit about your mother's parents

As long as I remember my mother's parents lived downstairs in my father's house. I used to recognize in my grandfather (1849-1925) the Alpine type, contrasting with the native Baltic type of grandmother Catharina nee Dragonat (1847-1923). Before they and Aunt Martha moved to Koenigsberg (early 1914) they had lived in Tapiau in the little house with the hand-drawn outside bell.

Oh, with the bell you were telling me about before, yes

To say it once more, none in my ancestry was a scientist. I may mentionthat Karl L., my father's youngest brother, became a successful teacher. It is another early memory, this from Spring of 1914, when my mother took me to visit Uncle Karl at a small village in south-eastern Eastprussia. He was the master of a *"Landschule"*, a two-story house with two classrooms and living space for the teacher's family; there was a barn, a stable for a horse and a cow, and an orchard with lots of beehives.

How much education did your mother and father have?

The same as all children received in Germany. School began at age six and was obligatory to age fourteen. Mother and father attended Public School where the three Rs were taught efficiently. Mother's school was not far away, but father had to walk two miles through the woods, first alone, two years later with brother Rowald, three years later with Rowald and Horst, and another year later brother Karl was added. The handwriting of my mother, her three brothers and four sisters was exemplary and the arithmetic flawless; obviously they had enough reading matter in the little house with the musical doorbell.

I thought I heard Kate mention that your mother had been a businesswoman.

K.L. Yes, she was a businesswoman and helped her husband's business very much.

You might speak a bit louder, Kate, because the microphone is probably too far away. Sharon, you may explain who is the person in the background

The person in the background is Dr. Katharina Lettau, ne Doerffel, who has been Professor Lettau's wife - I'm guessing - for about six decades

K.L. Six and a half decades this year

Sixty-five years!! I've asked her to join us because she has been not only by your side but has also been a practising meteorologist. She participated in many of the field programs we will be talking about. If my memory is true, I think, you were students together; is that correct?

K.L. Not quite. In 1933 I came to Leipzig to continue to study meteorology which I had begun at the University of Munich. One of the students told me that a new assistant is coming who is from Eastprussia; his name is Heinz Lettau. My first feeling was oh, that's a nice name. Well, I fell in love with his name before ever seeing him.

We will get back to university years a bit later. Let us return to your parents. Your mother had a good sense for business and helped out with your father's business. Did they encourage you in your education?

My father promised his support when he saw that I had found the right track. Fortunately for me, dairy business was only marginally affected by inflation in the early twenties and by the *Great Depression* of the early thirties. I should have mentioned that only the obligatory schooling was free in Germany and taught in Public Schools. High school for ages nine to eighteen required an entrance exam and annual tuition. My parents encouraged my brother and me to attend high school. I never needed stipends since again my father had the money for fees, tuitions, and books. And more! Kate just mentioned that I came to Leipzig as Prof. Weickmann's 'new assistant', to reside at the Collm Observatory, halfway between Leipzig and Dresden. Besides geophysical research I was to be thesis advisor for the

four or five 'resident graduate students' whose assignments required use of instruments or facilities at the observatory and in the woods around the Collm, a forested hill overlooking a wide plain. I had only to tell my father that I could use a car for my and my students transportation needs. I had in mind the littlest *"DKW"* convertible. My salary was decent enough for upkeep. The dealer wanted downpayment and secured monthly installments. No problem said father , and signed the vouchers. I became a car owner with my father's twelve hundred marks.

That's probably about three hundred dollars. Okay. What was the most memorable thing that happened to you as a child. Not your first memory but the most memorable thing until you were about fourteen years old.

Before my 14th birthday my life and that of the Lettau-clan was influenced by three historical events : [1] WorldWar I (1914 - 1918); [2] the "Dictate of Versailles" (1919) that separated Eastprussia from the *"Reich"* by the Polish 'Corridor to the Baltic Sea', and [3] the great inflation in Germany (1922-23). I was only 5 years old as the war began; unlike any other part of Germany we had the enemy and bitter fighting on German soil. In July (1914) two Russian armies invaded Eastprussia with the battle cry: 'Forward to Berlin'. They defeated German defense forces and occupied half of the province. The Cossacks of the southern army under General Samsonov marauded Masuria where my Uncle Karl, the Landschoolmaster, lived. I still remember Mother's anxiety after she learned that Uncle Karl's pregnant wife had to flee on the horse-drawn buggy until reaching rail connection to Berlin where she gave birth to my Cousin Ursula in October 1914. Destiny wanted it that Ursula, 30 years later as a Landschoolmaster's pregnant wife in Eastprussia, had to flee on a horse-drawn cart the invading Soviet Army ; her daughter Christel was born far away from home in Thuringia in March 1945. In 1915, Mother and child Ursula returned, but there was no return after 1945. What I witnessed in Koenigsberg at age of 5 were herds of dairy cattle driven along our street and filling a park between our home and the harbor. Scouting parties of the Russian northern army commanded by General Rennenkampf were reported at Samland's border, 20 miles east of Koenigsberg. The Russian Armies 'lived from the land' and farmers wanted to secure their herds in the city which nominally was fortified, at least heavily garrisoned. Another memory was that for 3 or 4 days of August (1914) six soldiers were billeted in our flat. There were friendly men from Berlin, part of the troups

that the German Supreme Command was hastily sending to relieve Eastprussia. General Hindenburg and his Chief of Staff, Colonel Ludendorff, succeeded to defeat Samsonov's army in the battle of Tannenberg (Aug. 26 - 30) and Rennenkampf's army in the battle of the Masurian Lakes (Sep. 6 -15). Incidentally, these historical events are described in a highly interesting and informative book by the American writer Barbara W. Tuchman, entitled *'The guns of August'*. In January 1915 the Russians tried once more 'to reach Berlin' but were repulsed in the Masurian Winterbattle. From then on people in Eastprussia including me as a schoolboy (1916) saw in Hindenburg and Ludendorff the military heros who liberated our homeland. In Januar to April 1945 Stalin's Soviet Army was more successful than Tsar Nicholas's armies. Well, this is another story, but let me add here that my parents remained in Koenigsberg until January 1945. They reached Pillau, Eastprussia's harbor at the Baltic Sea where they could border a steamer. Fortunately their ship was not torpedoed by Russian submarines. Safely they reached Copenhagen, later to be confined in a Danish internee camp in Jutland.

Okay let's see. I really wanted you to answer two questions: When did you have your first interest in science, and how old were you when you went to the university.

Well, for answering the first question it's necessary to say that the 'Treaty of Versailles' originally forbade Germans to fly airplanes other than hang gliders and sailplanes. I was in the 8th grade when our physics teacher was approached by a friend, a Mr. Peyan, who had learned to fly during the war and had fallen in love with flying. Peyan and other enthusiasts (including the Eastprussian landschool-master Ferdinand Schulz) had discovered an ideal location for motorless flight near Rossitten, a fisherman's village on the Kurische Nehrung. There, the Nehrung is less than a mile wide and consists of a four-miles-long dune wall with crestheight of 40 to 50 m. The westerly slope to the Baltic Sea is gently rising at less than 10 deg, the easterly to the Haff is a steep 'slipslope' uniformly declining at about 32 deg. These slopes are ideal on days with westerly breezes and gales for glider schooling and on days with easterlies winds for enduring soaring. Peyan needed unskilled labor to build gliderplane wingprofiles; molds were provided by the aerodynamicists of Goettingen University. A single wing had more than 30 profile sections. It took slow handiwork to soften thin strips of wood in hot water, to press them into the mold and glue them together. I signed up with two friends(#1 and #2

of the "coxed-fours" rowing team) for working on two late afternoon hours weekly. As payment we accepted the invitation to bike the about 40 miles to the dune-camp and stay for a few days of schooling during next year's Pentecost Recess. Our enthusiasm was due to a widely publicized soaring record by Ferdinand Schulz in the preceding year. Cruising back and forth above the slip face of Rossitten's dune wall he had used a stable east wind to stay in the air on a primitive hangglider, 'home-built with broomsticks and bed linen' as journalists reported, for more than eight hours.

Eight hours !!

Yes, eight hours. Our physics teacher called this a scientific achievement, together with efficient use of the wind-shaped topography of the Nehrung. People on the dunecrest could talk with the pilot when he happened to soar past them. Of course, Schulz was not prepared to stay that long in the air. Unfortunately, no official timekeeper was present. Schulz kept on because he enjoyed it. People jokingly suggested that he must have gotten hungry.

So his flight ended only because he was hungry ?

Oh no, the flight ended because the east wind slackened. I should add that our physics teacher told us that German flying enthusiasts had discovered favorable conditions also along the grassy slopes of the Wasserkuppe (elevation of 950 m) in the Rhoen Mountains, about 70 miles northeast of Frankfurt/Main. Ferdinand Schulz established there in 1927 a documented record by staying 4 hours in the air. A Rhoen-Rossitten Society, a non-profit organization, had been founded; they maintained the camps on the Wasserkuppe and on the Kurische Nehrung.

Is that Rossitten ?

Rossitten, yes. I should mention that the Kurische Nehrung was a Nature Preserve. No automobiles were allowed on the thirty miles from its root at the Samland north to the Lithuanian border. When we biked to the camp we passed historical sites. Ruins of a fisherman's village that had been buried by the sand two centuries ago had re-appeared a century later due to the relatively rapid eastward migration of

one of the lesser dune chains. The dunewall 1 to 5 miles north of Rossitten was much higher. It could have buried a 15-story building; but we had learned that the taller a dune the slower its migration. I began to think about this particular wind action. It builds up a dunewallwhich in turn makes upward airmotion at the windward side. Incidentally, we three students enjoyed three days of camp-living with Peyan and three of his carefree friends. But, crew member #1 crashlanded the only available schoolglider. The three of us biked back to Koenigsberg having had a good but having learned only the rudiments of hanggliding.

That was what sparked your first interest in meteorology.

Yes, it began there. More stimulants developed during the next two years. I stayed in contact with Peyan. He had built himself a kayak and enjoyed paddling the three-mile stretch down the Pregel to sail on the Frisches Haff. I borrowed the blueprints. My father generously gave the money for buying the diverse wooden parts at the lumber yard and canvas for the skin and copper nails at one of the shipchandler's stores along the harbor. I used my father's storehouse as workshop. Peyan inspected and approved the results of my handicraft. But a few weeks later my good friend Peyan failed to return from a kayak-sailing cruise after having been surprised by a strong storm with unbelievably furious and tall waves on the Haff. With one or the other schoolmate I enjoyed kayaking on the river and when on the Haff, we kept near the shore. For sailing, I joined a sailing club that accepted student members. On a few Haff cruises with "old tars" I learned more about breezes, gales, storms, and windwaves than I ever would have been taught in high school.

And what stimulated you to widen your interest to the geophysical sciences?

That will be a long story. As 9th grader, I continued gluing wing sections for the Rhoen-Rossitten Society. The easygoing Peyan had been succeeded by a WW I pilot. He wanted to be addressed:*"Herr Rittmeister"*, originally the title of the captain of troops trained to fight on horseback but 1914-1918 officially the title for a captain of the flying corps. My reward, a week in Rossitten during summer vacation, was a disappointment, in spite of a new dormitory building and the presence of Ferdinand Schulz. The restrictions for civilian flight of the Versailles Treaty had been annulled. *"Herr Rittmeister"* seemed to want to train new military pilots. I didn't

like that. No useful westwind situations developed. Schulz merely could lecture about the future of motorless flight, the use of thermals and cumulus- or even cumulonimbus -convection, i.e., atmospheric physics. Independently during all my 10th to 12th grades I was captivated by reports about the Atlantic expedition of the German Research Ship "Meteor", 1925-1927. This venture aimed at the systematic intertwining of oceanographic and atmospheric measuremts, from the sea's bottom to the stratosphere, testing and using newly developed equipment. More than 20 east-west traverses of the Atlantic were made, from as far north as the parallel of Iceland to the southernmost of South Georgia. I bought the expedition book by the ship's commander, Captain Spiess, and devoured its 600 pages. Several chapters were written by the participating scientists, headed by Albert Defant. The final incentives for studying geophysical sciences came from two one-day class-outings during my 11th and 12th grades. In 1926 the destination was an up-to-date sailplane exhibit and demonstration of gliderflying in Rossitten. According to press releases the contest would be attended by Professor Walter Georgii, chairman of the Meteorology Institute of the Technical University at Darmstadt. Ferdinand Schulz had called him the "Father of Soaring Flight". After having seen enough of up-to-date sailplanes I asked for Prof. Georgii. I was told that he was at an afternoon coffeehour with other VIP's in the old barracks familiar to me from my first stay in Rossitten. I collected all my courage and knocked at the door and asked if Prof. Georgii would be kind enough to talk to me outside. He was, and after I had told my story, he answered my questions about 'academic' meteorology and encouraged me to write to him or come to Darmstadt after finishing high school. I did not do that because of next year's class-outing to the University's Geophysical Station, located in an extended forest ten miles north of Koenigsberg near a stop called Gross Raum of the sea-shore railroad. The director, Professor Fritz Errulat, explained the recording instruments, in one hut for seismic waves and in another 'iron-free' hut for variations in the earth's magnetic field. What intrigued me was the global extent of these phenomena and seeing seismograms full of wavy unrest. These earth tremors were caused, as the professor explained, by stormwaves hitting the Atlantic coast of Scandinavia. I could not help whispering to my classmate and friend, Georg Steckel, that studying at such an institution could be my dream job. It happened that ten years later I would be Errulat's successor; a reference is included in Appendix I.4. I may say that at that visit I decided to study geophysics and to begin at my hometown university, known as the Albertina, founded 1515 by Albert, Duke of Prussia.

Well, it answers part of my question. It certainly is an interesting story. I will note for the record that I know you have been interested in the Ice Ages for a long time. Right now you are still doing some work on the Ice Ages, aren't you ?

Oh yes. This interest began at high school, as I'll explain in Appendix I.1

We will get back to this. Now, I wanted to ask more questions about pre-university time and would like answers of both of you. Firstly, what were the schools in terms of discipline and how you learned, also about co-education.

K.L. That's a question for me. In my hometown, Plauen/Vogtland, in the southwesternmost region of Saxony, I went until the 9th grade to a girl's school which had not yet classes for grades 10 to 12. Since another girl and I planned to go to a university we enrolled for the last three years in a boy's highschool, a *"Realgymnasium"*. There we joined about twelve boys in the 10th grade. I think there were about six hundred boys and twenty girls all together.

Did the boys resist the girls being there ?

K.L. Not at all. I may emphasize that, from then on, I was more often among boys than girls as classmates, not only at high school but also at university. I never had the feeling that boys didn't take me other than an equal person and fellow student. I may add something about our schooling in comparison with that of our sons here. Germany's high schools had usually only one or two *"Klassenzimmer"* or home rooms for each grade. We sat at tables for two or three under which was storage space for books, note books, and personal items including lunch boxes. Normally, teachers came to our *"Klassenzimmer"*. Only for physics, chemistry, or gym classes we went to special rooms or halls. In U.S.A. all schools are coeducational which alone makes them larger. Each student has a home room but one highschool usually has many. A particular home room group separates during intermissions and the students walk to rooms of teachers for assigned subjects. When I asked my children how friends X,Y, and Z of the same age were getting along I could hear that X is only in my English class, Y only in my Math class, and Z is not even in my home room. Quite differently, when I was at highschool, members of one age group belonged together; it was one for all or all for one. Nobody was especially smarter

or less smart than the other. At the girl's school I remember a group in my class who had strongly outspoken opinions on each of our teachers. Some were liked, others despised and even spied upon in their private life. For my 7th grade a new math teacher joined our school, who happened to be my father's cousin. I liked Uncle Benno and was anxiously waiting for the verdict of that group of classmates. I was relieved when they declared him Okay. Less of that existed in the boy's school.

How was discipline or how did they make you learn.

In primary and secondary schools fixed goals had to be achieved for each age group. Students had to have notebooks under their tables. About every two weeks teacher would say during the last quarter of the class period: 'Get your notebooks out and write answers to my questions'. Teacher collected the notebooks and returned them next period with grades and notes in red ink. Hourlong written tests were given before, and report cards on the last schoolday of the Summer, Christmas, and Easter vacations. If one showed during the year that he could not keep up he had to stay after school for a short session of *"Nachsitzen"* or come to school for an extra hour in the afternoon. If one didn't meet the goal at schoolyear's end he had to repeat a full year. I never had to experience anything of that. On the other hand I had no ambition to be an A+student. I was satisfied to be a B+student. I believe that my teachers tolerated that in view of my extracurricular activities. In fact our 10th grade English teacher confessed that he did not know to explain what 'sailing before the mast' meant and turned to me; I was the only in class who could. At primary school (1916-18) I had exclusively female teachers, because males served in the war, and only male teachers at seondary school. The final high school examination at the end of the 12thgrade, named the *"Abitur"*, began with written tests. I did well enough to be excused from the rather strict oral examination with four of my class of 20. However of the remaining 15, five flunked and had to repeat the 12th grade.

Was there a rigid dress code.

No dress code; you simply were expected to be neatly dressed. I got a camera when I was 14 years old. I still have a picture made with an automatic shutter release of my properly dressed classmates of the 12th grade in our *"Klassenzimmer"*. All, just like the teacher are wearing neckties; #1, #2, and #3 [that's me] of the rowing team sit in

front, our coxswain three rows farther down. In 1997 I sent a copy of this photo to a German quarterly magazine called , in free translation, 'Koenigsberg's citizens News Letters'. It specializes on search for missing persons. I gave my address in Mt. Pleasant and noted that I would be happy to hear from any of my old classmates. There was only one response. The son-in-law of #2 informed me about his wife's father's death in 1971.

I may mention that each high school had its colored caps, but nobody had to wear them. Our colors were dark green with golden cords. I remember only two occasions when I wore the 'colors'. The first for being photographed as 4th grader at the beginning of high school. The second in the 11th grade when my friend Georg Steckel and I stood besides the coffin of our *"Klassenlehrer"*, the home room teacher, who had unexpectedly died. We saluted by taking off the caps when the coffin began its slow down movement in the crematorium. Military salute by raising the hand to the head were never done; instead the cap was lifted by its peak more or less deferentially, according to the importance of the greeted person.

How did women dress for school then.

K.L. Solidly dresses, no pants.

Well in your classes, was there a lot of discussion,, professors asking your opinion.

K.L. Yes, and that brings to my mind a story which I'll never forget. The director of the *"Realgymnasium"* was my Latin teacher. Once he came down the stairs when I went up. I may use 'fractured German' for what he said: ' One moment, *"Fräulein Dörffel"*, what is your next class period?" I answered that it was *"Religionslehre"*, history of religion. He said: *"Oh, Ihre Seele wird keinen Schaden erleiden"* i.e., 'your soul will suffer no harm' if you come to my office and tell me about your opinion of my school. He seated me across the table in the teacher's conference room and asked a lot of questions about my feelings of classmates and teachers.

I believe a general remark is important. While the English language has only the 'YOU &YOUR', the German language has the informal or familiar *"DU&DEIN" etc.* and the formal *"SIE&IHR" etc.* Up to the end of 8th grade teachers used the intimate address. During the last four grades we had to be addressed formally. For

us students it made an enormous difference

A propos, school directors. In Koenigsberg, as student at the *"Ober-Realschule auf der Burg"*, usually shortened as *"Burgschule"*, or, for convenience 'Burg High', I had two quite different types. The first one (1919-1926) appears as a not very pleasant personality in several books by Ernst Wiechert (1887-1950) as well as in my memory. E. Wiechert was born in Masuria's woods as son of a forester, passed the entrance exam at Burg School at age 14, graduated there and obtained the teacher diploma at the Albertina. His auto-biography *"Jahre und Zeiten"* (best translated as 'Years and the passage of Time') shows that he was not happy to live in a city. An earlier book describes him as teacher at Burg High, his fictitious 'escape' back to the forests of Masuria, driven by what he saw as narrowmindedness of the director (the same which I had later) and some of the oldest teachers at Burg High. This book was published pseudonymously (1922) at the time when my brother got the Abitur at the Burg High. Having had Wiechert as a teacher, he and his classmates easily recognized whom he gave such pennames as for example: 'doctor swollen-head'. After WW I Wiechert taught at another high school in Koenigsberg and was happier until the dawn of the 'Third Reich', which he hated. My first director retired (1926) and was succeeded by Dr. Draeger, who had been for several years Head of the rather well renowned German School at Tehran, Persia, the present Iran. With his regime (1927) came the move to a new schoolbuilding in the northwestern suburb of Koenigsberg. It meant for Director Draeger a comfortable residence in the first floor, for me a 25-min streetcar ride instead of a 12-min walk along downtown streets. My friend, Erich Schmidt, the 'Primus' or class-spokesman, informed Dr. Draeger of the old custom that the 12th grade serenaded all their teachers around midnight of April 30/May 1. Two strophes of a *"Lied "* by the German poet Emanuel Geibel (1815-1884), set into a charming melody around 1840, were sung. In simple words it said that with the coming of May the trees are greening and that people should leave all sorrows at home and wander, like white clouds on a blue sky, into the lovely outside world. Traditionally, the music teacher taught the 12-grader to perform that song in two voices. Dr. Draeger said: "Fine, I will be ready to listen to you at 5 o'clock, when the sun is up". Punctually, Erich Schmidt conducted our performance under the windows of the director's flat. With the first tones, Mrs. and Dr. Draeger appeared on the flat's balcony, both dressed as for a diplomat's reception in Tehran. When we ended Dr. Draeger thanked us and asked all twenty of us up for a coffee breakfast. We were served by a maid at two

festively set long tables. I found my name at the table presided by madame who entertained us with stories about traveling in Persia. Dr.Draeger had Erich Schmidt at the other table and used the opportunity to discuss school matters.

Any more highschool episodes or happenings?

One very special event in the hunger years (1919 -1920) was the generous humanitarian activity of the War Relief Bureau under Herbert Hoover who ten years later was US President. Kate and I remember that each school pupil in all German cities received what we called the *"Quaker Semmel"* or, 'Quaker Bun'. These four ounces of white bread were for many children the only nourishment before coming to school and in school.

Besides an inspiration to study geophysics, did you learn at high school something else which had lasting effects on your lifestyle?

I owe something like that to my history teacher, Studienrat Hyss, a Jew. He taught us that one must go back to basics to come closest to an understanding of true history because development of important events has manifold effects and involves the interst of various groupes of humankind. Often this leads to interpretations that may be biased to various degrees. He gave an extremely simple example how a factual happening can be misinterpreted: An Italian Father will tell his child that 'the moon lies' because while actually waning he lets you make the letter 'c' of the crescent and that says:*"crescendo"* ; a German father will tell his child that the crescent truthfully lets you complete the letter 'a' that says *"abnehmend"* while waning, and the letter 'z' that says*"zunehmend"* while waxing. Studienrat Hyss then quoted 'tongue-in-cheek': *"Das also macht aus demTraband, 'nen echten Deutschen Gegenstand"* meant as a joke by the German humorist Morgenstern. More important was a debate following our excursion with the home room teacher when I was in the 7th grade. The destination was the city of Frauenburg, about 40 miles SW of Koenigsberg , its *"Dom"* or cathedral and the *"Kopernikus-Museum"*. The museum's Custodian gave us a lecture. He stated that *"Domherr Kopernikus"*, that is 'Canon Copernicus', had conversed with his parishioners only in German, wrote at his abode as *"Domherr "* his famous work*"De revolutionibus orbium coelestium"* (1540/41), like other scientist in Latin, and since he was born in Thorn,

in western Eastprussia, he was a German, not a Polish astronomer. At the next opportunity we asked Studienrat Hyss: Was Copernicus a Polish or a German astronomer? Studienrat Hyss said that he would help us to arrive at our own conclusion. We found that he was born (1473) as Nikolaus Kopernick by parents of German origin in a city at the Vistula which at that time was the border between Prussia and Poland; it was called Thorn by Prussians and Torun by Poles. He studied (1491-1494) as Nicholas Copernicus at U. of Cracow, Poland, but earned the degree*"Dr. iur. et theol."* (1503) at the U. of Ferrara, Italy. He wrote his most famous treatise while Canon at the Cathedral of the city, that was founded as Frauenburg (around 1300 AD) by the Order of German Knights, and renamed Frombork after the 'Second Peace of Thorn' (1466) when it came under Polish administration in cooperation with Prussian Nobles in opposition to the Order. One classmate concluded that Kopernikus was a 'Prussian Astronomer'. Studienrat Hyss suggested 'European Astronomer' might be a better solution. He explained that 'Prussian' had gotten a different meaning since a Duke of Brandenburg, a Hohenzoller (1701) had named himself Frederick I, King *"in"* Prussia. His descendant called himselve King*"von"* Prussia, with Berlin as capital. The Hohenzollern began to establish Prussia as a militaristic power. That was not true of Prussia during Kopernikus' era. With my French and Austrian ancestry I agreed with our history teacher. Lack of nationalism of any color became my lifestyle.

What actually helped you, as high school pupils, to arrive at conclusions?

Studienrat Hyss said he did not want us to go back to ancient documents and neither to history books. Of necessity, authors use the language of a nation for its history, but 'God cannot alter the past but historians can'. Historical Atlasses provide the best what you or laymen can study. Europe's natural boundaries are fixed since milleniums while national boundaries vary. However, the publisher of a historical atlas will look for contributions by historians from various countries. The language of geographical mapping is supernational. With this advice we used an earlier edition of Hammond's [see Appendix I.4] to find what I outlined before. Moreover, we understood that Poles (1919) objected against the term 'Polish Corridor to the Sea' because this area was on maps for AD 1000 the 'Duchy of Poland' and for AD 1500 the 'Kingdom of Poland'. We understood also why in our and since old times Eastprussians spoke of a trip to Berlin or farther west of *"Going in's Reich"* while

Germans in and east of Brandenburg spoke of a trip beyond the Vistula of "Visiting in Prussia". If you don't mind, Sharon, I am taken off at a tangent. In 1967, Prof. Ragotzki at our U. of Wisconsin Department had invited a Polish limnologist, Adam Synowicsz, as visiting scientist. Once, Adam S. came to my office, brought me copies of the two articles which I had published (1932) on *"Seiches des Frischen Haffes"*, and explained that my studies came to his knowledge while he was with the Polish Institution for Freshwater Fishery located in Allenstein, now Olsztyn. After returning to Poland Prof. Synowicsz became a member of the Academy in Warscawa. He invited me as visiting scientist for a talk about Peru's tropical desert climate at Warscawa and bring Kate along. We went (1969) and Adam S. graciously toured us in his car once to Allenstein and another time to Cracow, his hometown. At the university we were shown a page of a recordbook with Nicholas Copernicus name among many other students signatures, and a small auditorium with stiff wooden benches where he had listened to his professors. I could not help thinking back to Studienrat Hyss and our discussion as 7th grader in Koenigsberg and that we had been shown more substantial signatures by Kopernikus on German documents in Frauenburg. Otherwise, Kate and I were charmed by the old city of Cracow and the numerous features preserved from the 15th century when Cracow and Nürnberg had been sister-cities for trade, manufacture, and art culture. Especially interesting to us were the creations of Veit Stoss (1445-1533), a German artist excellelling as carver in stone and wood who worked in both cities, traveling back and forth during his adult life.

Good. After you finished highschool, what did you do to be accepted at a university?

Before the begin of the academic year, you went unannounced to the university of your choice, and presented your 'Abitur diploma' at the *"Quästur"*, the bursary. If it was from either a *"Gymnasium"*, with latin and a bit of greek and one modern language, or a *"Realgymnasium"*, with a bit of latin and two modern languages, or a *"Ober -Realschule"*, with no latin and two modern languages, usually french and english, or another accredited institution [including tmany in foreign countries] you were accepted and registered. You had to state the faculty of your choice, whereupon you received a booklet [kind of a log] with a number of empty pages on which you had to list the particular courses you wanted to take. You found at the entrance to the university mainbuilding *"Das schwarze Brett"*, actually a wall of

notice boards, sorted according to faculties. Professors who planned to read courses during the forthcoming semester, had to post their offerings, and where, how often, and when beginning. Some did it on a tiny pieces of paper difficult to decipher. You made your list and returned to the bursary. There your tuition was figured out, and you payed directly or presented proof of scholarship.

Katharina, I understand that you have scientists in your ancestry

K.D. Oh yes, in some way. Rather than giving a short answer right now, let me respond by submitting Appendix I;3. However, I believe, right know, I should tell my story to supplement what Heinz is going to report in Appendix I;1. My first trip (summer 1936) to Eastprussia was a short visit. Heinz and I had seen a bit of the Summer Olympics in Berlin, drove from there to Swinemünde and boarded the ferryboat (including our DKW car) to Pillau. I was happy to see the Samland, old Koenigsberg, and Masuria, where we visited 'Landschool Master' Uncle Carl at the shore of *"Mauer See"*, one of the largest among the several hundert lakes of Eastprussia. My second trip (Dec. 1938) was the move to Heinz's appointment at the Albertina and to my new position as climatologist in charge of the *"Kurort Klimadienst"* for Eastprussia; see Errulat [1966, p.415], Appendix I;4. We and Bernie enjoyed the Baltic Sea beaches in the peaceful summer of 1939. Then came the war. I continued my work. Heinz had been assigned 1941/42 to Potsdam and 1943 to Northern France, but his assignments permitted short leaves. He came repeatedly to visit us, using the main rail line established and maintained (1939-1944) from Brussels via Berlin and Koenigsberg to the eastern border of Eastprussia. In May 1944, I had my second son. He arrived at this world in the airraid shelter of Albertina's Gynecology Hospital; next day we were brought by atrain to the lovely *"Luft Kurort"* Neukuhren at Samland's Northshore. The Soviet Army began to approach, but the NS administration still prohibited civilians to leave Eastprussia. However, as climatologist, I did get orders to travel to Berlin and return. With Bernie and the baby boy I went to stay for 'a while' with my parents in Plauen. There, in August 1944, I received three bad news, but each made milder with a bit of good news. A telegram from Heinz's parents told me that a bombing raid (night of 26/27 Aug.) had destroyed our home but left them and their house undamaged; an 'official' postcard from our landlord, notified me that our flat had burned out but that my storage room in the basement was undamaged; another 'official' postcard by

the international red cross contained several preprinted statements of which two were marked indicating that H.L. was a 'prisoner of war' but 'unwounded'. The 'return note' on my travelorder entitled me to free railtravel to Koenigsberg. But when the train reached in the morning of 30 Aug., Ponarth, a suburb of Koenigsberg, it could not go farther. Koenigsberg was an inferno of burning ruins due to a repeat airraid in the night before, dropping another ≈500 tons of incendiary bombs on the city's center. I reached Heinz's parents home, walked over rubble to the rubble of our flat, salvaged what I had stored in suitcases in the basement, and with Heinz father's help expedited two suitcases to Plauen. Then, I left Koenigsberg for my very last time. The suit cases arrived safely in Plauen. In the years of need (1945/46) that turned out to be a treasure of clothes for the growing baby as well as for Heinz. Last not least, I had salvaged a few albums with photos of Heinz's years at school.

I ; 1 'Blue Earth', the Mother Lode for Mining Amber, and Memories relating to 'Eastprussian Gold' [H.L.]

Preface: A school excursion to Samland's Amber coast -- St. Adalbert's Cross -- Blue Earth in the Open-Pit Mine -- Gathering methods of ancient eras-- Annual yield of raw amber at Palmnicken -- Amber Roads to Samland and related discussion in my history class -- Amber-related exhibits in Koenigsberg - International ado about Peter the Great's 'Amber Room' after WW II -- Amber-related discussion in my geography class --Budding of thinking about the waxing and waning of the socalled Fenno-Scandian iceshield.

Important parts of my high school education were the annual daylong excursions led by the home room teacher to destinations not farther than 45 miles from Koenigsberg. In Part I of this interview I talked about the excursions to Rossitten, the University Geophysics Station, and to the Kopernikus Museum at Frauenburg. From each I took home some impetuses for my later career. Of longest-lasting and latest effect in my life as geophysicist were stimulations during a 10th grade excursion. The destination was *"Bernsteinwerk Palmnicken"*. The meaning of*"Bernstein"* is 'a combustible stone'. The English name is Amber, a term of Arabian origin. It is a hard, translucent, yellow or brownish-yellow fossilized resin and has been called 'Eastprussian Gold'. It is easily carved to produce golden-yellow jewelry and ornamental objects with surfaces that can be polished to a high gloss. This resin is also used in chemical industry and as highly efficient electrical insulating material in scientific laboratories. Palmnicken is a village on Samland's amber coast and the major part of the *"Bnsteinwerk"* is an open pit mine.

We reached it (1925) using the Koenigsberg/Pillau mainline, and a secondary line branching off at Fischhausen. Historical monuments were seen from the train windows. Near Fischausen, a tall cross on a dune, visible far out to sea, in memory of St. Adalbert, who (AD 983) had become Bishop of Prague; he came to Samland's amber coast not as merchant but as christian missionary. Adalbert was slain by disciples of Perkunos, the god of the Pruzz as he entered (April of 997) a sacred grove. His companions took his body to Gnesen, ENE of Poznan, and St. Adabert became one of Poland's patron saints. Then there were the original walls of *"Schloss Lochstedt"* , a fortification built (in the 13th century) by the 'Brethren of the German Order of Knights' at a Baltic Sea inlet. All amber unearthed had to be surrendered here to be stored and prepared for shipment to foreign ports. A few miles farther north was 'gallows hill', erected by the Brethren more as warning for

amber thiefs than for executions.

In Palmnicken we visited first the enormous open-pit mine, displaying a wall where about 20 m of greyish diluvial soil extended horizontally above a 6 to 8 m thick layer of dark-bluish earth. Huge steam excavators removed the topsoil and loaded the 'blue earth' on open freight cars on rails at the flat bottom of the pit. Steam locomotives pulled the full cars to buildings on the surrounding plateau. We were guided to the shed where the load was discharged on wooden lattice palings of different grades and amber pieces were unearthed by water jets. We saw grayish lumps resembling small and large potatoes rolling down the sorting lattices to be collected by a type of railroad car that could be sealed. Trains of these cars went for further sorting and refinement to state-owned factories in Koenigsberg and Elbing. We learned that the *"Werk"* had become operational in 1913, that each cubic meter of ' blue earth' yielded about two pounds of raw amber, and that nowhere else on earth existed a counterpart.

The entrepreneur who had designed the *"Werk"* under contract with the State of Prussia had previously mined amber by steam dredges from the bottom of *"Kurishes Haff"*. The primitive methods used in ancient times along Samland's Baltic Sea coast included: Beach-combing after days with windstorms; 'fishing' of amber pieces, caught within seaweed, using ringnets on long sticks by people wading in the shallows when the sea was calm, and diving for amber,which had been found the least efficient method. According to Gusovius [1966 b] open-pit mining at Palmnicken produced about one million pounds of raw amber during the time of our visit. This yield was mainly sold for oil and laquer production; only 20% was of sufficient quality for producing jewelry and art work by skilled craftsmen.

Back at school in Koenigsberg we learned from our history teacher that amber had been known since ancient times. It had been unearthed in parts of present Romania. The Romans called it *"succinum"* or meltable stone, the Greek *"electron"* and most likely the purity of any piece of amber was demonstrated by rubbing it on wool and showing that it 'raises hairs'. Anyone today knows about static charge but hardly anybody will connect 'electricity' with amber. Herodotus (≈ 450 BC), the father of history, had heard tales about exceptionally large chunks of amber to be found at seacoasts in Europe's northern regions. Tacitus (≈ 100 AD) in his *"Germania"* reported details about the Baltic Sea coasts. He called the people in the region where amber was found the *"Aestii"*. Skillful mariners from Phoenicia were most likely the first to open an overseas trade route. Carved amber became

highly esteemed jewelry in the ancient empires around the Mediterranean Sea.

During and after Caesar's time Roman merchants reached the Samland overland by the 'Amber Road'. The main route led from Aquileia at the northern Adria to Carnuntum, a Roman military post at the Danube in present Austria. From there, the merchant travelers had to navigate between Carpatian and Sudetic Mountains to the Oder, then to the Vistula and finally along *"Frisches Haff"*. The Samland was entered by crossing the river Pregel at the main military border post of the *"Aestii"* , an earth wall palisade, called *"Burg Tuwangste"*, on the sandy moraine hill where *"Schloss Koenigsberg"* was built in 1255. An eastern branch of the 'Amber Road' reached Carnuntum across Thrace from Byzantium; see maps in Kinder & Hilgemann [1967], Appendix I.4

Due to its origin as quasi-liquid resin some pieces of amber had foreign matter entombed. If of geological or biological interest that piece was added to the *"Bernstein Sammlung"* maintained and displayed at U. of Koenigsberg's Geology Department. When I returned to the Albertina (1938) I went to see Prof. Andrée, the chairman of the Geology Department, formerly the head of the Geophysical Station; see Errulat [1966], Appendix I.4. I donated a fist-sized lump of copal which I had bought earlier that year in Luanda, Angola. I knew that copal is a fossilized resin from tropical trees and related to amber; most copal is mined in Indonesia and used in varnishes and lacquer. Prof. Andrée was gladly accepting my gift saying that copal had been lacking in the Department's display of about 100,000 pieces of amber. Most famous was one piece with a well identifable entombed flea, the *"Bernstein Floh"*. Later I learned that a great variety of entombments in amberlike fossils have been studied by G.& R.Poynar [1999], permitting a detailed reconstruction of the insect world of the ancient algarrobo forest on the island now known as Hispaniola in the Caribbean Sea.

Solid proof of the amber trade are recoveries from ancient burial grounds. According to Gusovius [1966 b], extraordinarily manifold coins were found all over the Samland in such quantities that around 1900 a special museum, the *"Münz Sammlung"*, was established in Koenigsberg. Silver or copper coins showed prevailingly the heads of roman emperors reigning between 54 and 138 AD, i.e., from Nero toVespasian to Trajan to Hadrian. Gold coins were predominantly from the Eastern Roman Empire with 4th and 5th century AD datings. Rarer are Arabian coins; most noteworthy are some by the 5th Abbasid caliph Harun-al-Rashid who reigned in Baghdad around 800 AD. A report by the amber trader Ibrahim ibn Jacub

from Spain uses for the first time the name 'Brus' or 'Pruzz' instead of *"Aestii"*.

The *"Bernstein Manufaktur"* of the State of Prussia maintained a marketing outlet in downtown Koenigsberg. The display of beautiful pieces of art in a big show window changed monthly. I stopped there every time when I walked by. Most vivid in my memory is a large chessboard using blondest versus darkest-brown amber in thin sheets for the board and beautiful carvings for the pieces..

However, ten centuries of peaceful trade were interrupted by seafaring Scandinavians. From the 8th through the 10th century AD, Vikings from Norway plundered the coasts of western and southern Europ; Vikings from Sweden devoted unwelcome attention to the coasts of the Baltic Sea. It took nearly three centuries to pacify and christianize the Samland. The Brethren of the Order of German Knights were successful because they built hospitals and wells, taught the Pruzz to make bricks, improve agriculture in general and especially dairy farming as well as horse breeding and fishery. The unearthing of Samland amber and its refinement for export was organized in a form lasting for the following seven centuries. Hammond's [1964] map of Europe about 1200 AD shows borders for the land of the Prussians between Vistula and Nemen which from then on remained stable during the following seven and one half centuries.

The most devastating change came after 1945. According to Stanley [2000], many among the first Russian Settlers, likely assisted by soldiers, vandalized much of the then exiting German cultural landscape. The amber deposits at Palmnicken, now Jantarnyi, are sporadically exploited. WW II produced an amber-related story. In September 1941, the German Army took Pushkin south of Leningrad and occupied Zarskoje Selo Palace. The Soviet Regime had converted the palace to a museum. During the German advance, all museum pieces had been moved farther inland except for the artistic amber panels which formed the walls of the 'Amber Room'.

In our history class we had learned the story of this room. It was first conceived as *"Das Bernstein Zimmer"* by Frederick I, who (1701) in Koenigsberg made himself King *"in"* Prussia. It took a team of experienced carvers a decade before enough panels were ready to be mounted in a room of Berlin's city palace. Peter I of Russia, later Peter the Great, travelled (1716) through Berlin, admired *"Das Bernstein Zimmer"* whereupon King Frederick William I offered it to him as a royal gift in exchange 'for a company of tall soldiers', to satisfy the kings fancy for *"Lange Kerls"*. i. e., tall guys for his *"Gardedukorps"*. The wall pieces of the 'Amber

Room' were shipped to St Peterburg and three decades later installed in what was then called the Catherine Palace. In October 1941, the 'Amber Room' was back in Koenigsberg and tentatively reassembled in the south wing of the castle that served as a museum. After Koenigsberg had been burned down (as reported by K.L) there was no 'Amber Room'any more.

After the final defeat of the *"Dritte Reich"* wild stories began to circulate in the international press. It still goes on. Typical is the story in the NEW YORKER of April 14, 2003, by Elizabeth Kolbert, one ot the magazine's 'far-flung reporters', entiled: *FOREEVER AMBER, A room built for a king and treasured by an empress haunts two centuries*. Ms. Kolbert's report states that the 750 year old Koenigsberg castle 'sat atop a network of vaulted cellars that extended at least three stories deep'. Well, as Prof. Errulat [1966, p. 415] reported, I brought (1938) to the Albertina my highly sensitive tiltmeter and was looking for a deep cellar to mount it. Since I had heard rumors that there were vaulted basements beneath the south wall of Koenigsberg castle I went to the city's engineering office. Yes they said, there is on vaulted basement but only under the northwing and merely 10 steps down from the inside yard and at street level at the outside. Well, there I had been many times; it was the famous wine restaurant *"Blutgericht"* , a name indicating that it had been in ancient times the storage for the executioner's tools. But it was not deep enough for my instrument. I went to the Albertina's office of 'Buidings and Ground'. They said the best we can offer you is the *"Karzer"* i.e. the lock-up to incarcerate unruly students under the 300 year old university building on the Dom Island. It was 20 steps down and moist; grafitti dates showed dates of 100 years before. Anyways, I gave it a try, but found that the Island tilted with disturbing amplitudes when a car was driven acoss the 'Honey bridge'; see Appendix I;2. Al we could say was that my students, Kate, and I were the last people who had 'sat' in Albertina's jail.

But more importantly,when no vaults at Koengsberg castle existed in 1939, there were none for hiding the Amber Room in 1944/45. None of the people who claim that the crates with the Amber panels might sometimes be unearthed mentions that amber is highly combustible. Katharina's story of salvaging some of our belongings after Koenigsberg had been burned down in 1944 (when rail traffic still functioned) might have had parallels with salvaging the panels of the Amber Room if that actually had happened. The expert contributors to Gusovius [1955 a] report nothing of this sort. Dr. Grimoni[1999] was invited to participate at celebrities in Zarskoje Selo Palace when the Amber Room was re-installed. Essential financal

support came from German Ruhrgas Company.

\ In another way, amber is still fixed in my memory. I had liked to hear what I was taught at high school in Geography . I learned that Samland's amber was produced in the rootzones of araucaria-like trees that formed a forest during the Tertiary on the more than 1000 km long and 200 km wide plain paralleling the Scandinavien Mountain range to the east. In the late Tertiary and Quaternary, glaciers created out of that plain the basin filled now by the Baltic Sea. The forest floor was 'bulldozed' to form the layer of 'blue earth' as part ot the end-moraine that is most of the Samland. Lesser amounts and smaller pieces of amber are found at other beaches of the Baltic Sea, the North Sea, and at the bottom of Kurisches Haff. When my family went for summer vacation to one of the resort villages at Samland's northshore, my brother and I, like other childrenmade it a habit to comb the beach for amber. We were told that pieces larger than an acorn belonged to the state. When we found a piece of that size it always turned out to be belemnite. But pea-size to bean-size amber pieces were found and kept, most readily at the western resorts where Samland's northcoast was an escarpment and huge boulders were lying along the beach.

Our geography teacher told us the the boulders at Samland's northshore came from the Aaland Islands between Sweden and Finland. I found it hard to believe. These Islands where straight north at a distance off ≈600 km and Haparanda Finland at the northernmost beach of the Balsic Sea was another ≈ 500 km away. I argued that the Aalands are low and that there are hardly any mountains in Finland. The highest peak of the Sccandinavien mountains, Glitterlind (8110 ft) was ≈ 900 km to the NW. Conventionally, it was assumed that the stone transporting glaciers came from the highest elevation of Scandinavien Range. But the geological evidence for boulders coming from the north was overwhelming. After our trip to Palmnicken I began to think about possible causes for formation of the ice age glaciers on flat lands. Having seen the thickness of Samlands amber mother lode of 'blue earth' it seemed likely that indeed it needed bulldozing the soil of the amber forest over a distance of ≈1200 km to the north. Glaciers from the high elevation of the Scandinavien Range could bulldozz merely about 200 km of Baltic Sea bottom.

However, it took me a long lifespan before I convinced myself that the waxing and waning of huge icevolumes between about 50 and 70 deg N, 5 times repeated during the last half million years, is not initiated by just extending pre-existing glaciers on conveniently located mountain ranges. Unexpected support for

my thinking came much later in Madison by getting acquainted with studies of the Wisconsin Age; for example, Flint [1949], Appendix I.4. More about that at the approriate part of this interview.

I ; 2 The Seven Bridges of Old Koenigsberg and Euler's Networktheory

Preface: Koenigsberg, the seven-bridges town --University town Koenigsberg, a waystation for travelers between Berlin and St. Petersburg --Euler's challenge and solution by a new branch of mathematics -- Euler's rule applied to rowing cruises passing under the classical seven bridges .

Koenigsberg was built around the banks of the forked Pregel River and on an island formed by a channel connecting the two forks before the Pregel became one broad stream. Throughout the 18th century there were seven bridges. The island was conected with the Samland to the north by bridges #1 & 2, to lands in the south by bridges #3 & 4; bridge #5 crossed the channel connecting the island with the *"Urstromtal"* or upstream valley from where bridges #6 & 7 spanned each fork. The island with the Cathedral and the original buildings of the Albertina was the town's spiritual center. Professors like other island dwellers had gardens on the upstream valley floor. Fittingly the bridge #5 was named "Honey Bridge". During the 18th century, Immanuel Kant [1729 -1804] taught at the Albertina. Academies of Science were founded in Berlin [1700] and St. Petersburg [1725]. The famous mathematician Leonhard Euler [*1707 in Zürich] became a member of both academies and used to stop in Koenigsberg while traveling reeatedly between Berlin and St. Petersburg.

Euler may have stayed with a colleague at the Albertina and walked with his host from the island to the garden. As mathematicians, while sitting in the garden and 'shoptalking' they might have come upon a problem: We could return home via the Honey Bridge or, by a detour, via the nearest two of the North Fork bridges. Can we reach home via an extended detour, crossing each of the other six bridges only once? Euler thought about it and developed a new kind of math: TOPOLOGY, a network theory applicable to one-way-streets connecting points on a map. According to Euler's rules: The walk from home to garden and return as a seven-bridges walk is not a solvable one-way-network problem.

A railroad-pedestrian bridge build around 1850 across the river downstream from where the two forks join made it possible to return from the garden to the island home, crossing each of the *eight* bridges only once.

Two centuries later we heard about Euler's story in Burg High math class, but then the number of bridges in Koenigsberg was ten. On river outings as "coxed fours" we saw the undersides of all of them. It intrigued us to modify Euler's problem: Can we leave the boathouse and return to it after passing *under* each of the historical seven bridges only once? Even extending the cruise to the upstream point where the forks join, we found no solution, and that in agreement with Euler's rules. With reference to *Marilyn vos Savant's* column in Parade Magazine of March 5, 1995, the 'seven bridge problem' is a mainstay in U.S.A. high schools. Holt [1975] illustrates Euler's theory lucidly but assumes erroneously that a 'solution-providing eighth bridge' was built after the Russians took Koenigsberg and named it Kaliningrad.

I ; 3 Dörffels In the Literature --By Katharina Dörffel-Lettau

Preface: Ancesters were living where Thuringia, Saxony, and Vogtland meet -- Greatgrandfather Alfred D. was a musician who got renowned by writing about and for musician -- Leipzig U. acknowledged his merits in 1885 by awarding the "*Ehrendiplom der philosophischen Fakultät*", Dr.phil.*honoris causa*.-- Greatgranduncle Ottokar D. studied law at Leipzig U., and received the degree in jurisprudence at Leipzig U -- Was 1848/49 as major of Glauchau involved in rebellions; was condemned during reconstruction but rehabilitated by the supreme court in Dresden --Emigrated to Brazil where he found fame as prefect and mayor of Joinville, Santa Catarina -- There is a Doerffel crater on the backside of the moon and a Doerffel Asteroid.

At the head of my list are my greatgrandfather Alfred Dörffel [1821-1905], honorary Ph.D. of the University Leipzig, and his oldest brother, Dr.jur. Ottokar Dörffel [1818-1906]. Both were born in Waldenburg, Thuringia, a small town near the border of Saxony. In the 18th century it was the residence of one of the numerous Thuringian principalities. The two brothers' greatgrandfather was Johann Georg D.[1724-1806], army surgeon,"*Feldscher*" in Eibenstock/Vogtland; the grandfather was Gottfried D.[1753-1834] master-baker and barber-surgeon,"*Bader*" in Eibenstock, and the father: August Friedrich D.[1788-1847], chamber registrar in Waldenburg.

Alfred Dörffel had a remarkable talent as musician. He spent his life in the city of music: Leipzig, renowned for the Church of St. Thomas choir and the compositions of its cantor J.S. Bach, as well as the *"Gewandhaus Konzert Halle"*.

Performances of instrumental music were there inaugurated in 1743 and reached international fame when the German composer Felix Mendelssohn [1809-1847], was conducting. Anyone interested in the history of this establishment and the variety of repertoirs will reach for Alfred Dörffel's monumental work published in 1881 and reprinted in 1981:"*Geschichte der Gewandhaus Konzerte zu Leipzig*". As a child Alfred D. received excellent training in music, first in his parents hometown Glauchau situated about one third of the way from Plauen to Leipzig. After 1832 he studied in Leipzig where his last teachers were Felix Mendelssohn and Robert Schumann. In May of 1839 he performed a public piano concerto at Glauchau.

In spite of recognition by his famous teachers and his emotional pleadings, Alfred's parents advised strongly against taking up music as his profession. They felt it was a "brotlose Kunst"or 'breadless art'. Perhaps they were right because Alfred became succesful not as musician but by writing about and for musicians. He became a highly esteemed counselor of Leipzig publishing houses specializing in works of music. To mention one example, Richard Wagner [born 1813 in Leipzig] expressed repeatedly in letters to his publishers a sincere gratification for Alfred D.'s keen insight and loving care which he devoted over a span of two years [1857-1859] to galleyproofs for the highly complicated printing of the 'opera partitur' or score, of *Tristan und Isolde.* Alfred D. was in 1860 appointed as Custodian of the music department of Leipzig's city library. Leipzig U. acknowledged his merits in 1885 by awarding the "*Ehrendoktorat der philosophischen Fakultät*", Dr.phil.*honoris causa.* Alfred D.'s vita and a list of his publications has been included in several German reference works about music history.

After studying law and receiving the degree in jurisprudence at Leipzig U., my greatgranduncle Ottokar Dörffel returned around 1846 to his hometown as city administrator. He was Mayor of Glauchau in 1848. That year began with a bloody revolution in Paris, the abdication of Louis Philippe and the second Republic of France. These events stimulated revolutions in Germany. A National Assembly of lawyers, professors, businessmen and state officials met in St.Paul's Church at Frankfurt/Main. The King in Berlin as well as the King in Dresden were cooperative at first but withdrew their representatives from Frankfurt as radical elements emerged who wanted to abolish the old regime by force.

In 1849 Mayor Dörffel was under pressure by radicals wanting wagons and food for their intended March on Dresden. He refused at first and relented reluctantly when the radicals threatened to burn city hall and the castle. The

radicals marched away but never reached Dresden. In 1850, a constitution for a German Confederation was inaugurated with the support of Prussian troops in Saxony. A court-martial accused Mayor Dörffel of having supported the radicals and he was sentenced to death; a court of appeal reduced the sentence to 12 years hard labor. Finally, the Supreme Court of Justice in Dresden took the case. Ottokar D. defended himself and was cleared. He returned to Glauchau to live as private counselor, still resented by extremely conservative citizen. However, if you visit Glauchau today, you find that his name is honored in the municipal archives and that the cityhall's street address is *"Dr. Ottokar-Dörffel Strasse"*.

In 1981 I did not miss the chance to walk along *"Avenida Ottokar Doerffel"* in the city of Joinville, Santa Catarina, Brazil, thousands of miles from Glauchau. I owed this chance to visiting my Aunt Nina while H.L. and I were residing, 1974, temporarily in Bonn, Germany. Nina just had received a letter from a Ms. Herkenhoff in Joinville, Brazil and left the reply to me. This letter concerned greatgranduncle Ottokar D. It reminded us about a story in the family archives that in 1854 Ottokar D. had become so annoyed by his opposers in Glauchau that he emigrated to Brazil. During these decades emigration across the Atlantic was widely regulated by treaties between state Governments. Switzerland had contracts with the new State of Wisconsin as well as with the southern states of the Empire of Brazil. There was no Germany before 1871; the Senate of the Hanseatic League Cities like Hamburg or Bremen were treaty partners. In Wisconsin, for example, the dairy industry as well as education benefited by the foundings of New Glarus and the first *Kindergarten* in USA by Mrs. Schurz. Ottokar and his wife Ida had gone to Hamburg to join a group of people from Switzerland and Saxony under contract with the state of Santa Catarina, Brazil. A new colony, Dona Francisca, had been established 30 km inland from the port of São Francisco do Sul, about 300 km SW of São Paulo.

After arriving in 1854 Ottokar liked the climate and the opportunity for creating a civilized environment if necessary by hard manual labor. For the benefit of the community he started a brickyard and built wells, founded a newspaper and soon was appointed as Colony Director. As the colony became the city of Joinville, Ottokar D. served as its first Prefect. The Swiss government sent professor Von Tschudi, a geographer, on a fact-finding trip around locations selected for settling Swiss emigrants in Brazil; Prof. von Tschudi wrote several reports in which he praised Dr. Doerffel's administration and arrangements for easing the life of new

settlers. Greatgranduncle Ottokar was a prolofic writer of letters. Those directed to relatives and friends in the old country are preserved. Plans are under way to publish them because he described vividly colonists' life in Brazil during the second half of the 19th century. In the family chronicles it is reported that he served as Imperial German Consul in Joinville at his death in 1906.

In the early 1970s , INPE, the Brasilian counterpart of NASA, began to dispatch a few outstanding Brazilian graduate students to the Meteorology Dep. at U. Wisconsin, Madison campus as thesis candidates. H.L. was advisor for Luiz C. Molion whose thesis work dealt with applications of evapoclimatonomy to the Amazon Basin. The climatonomic method to be used was developed and published jointly by H.L.& K.L.[1975]. Luiz received the PhD. in 1976 and returned to INPE at São José dos Campos, São Paulo, Brazil. INPE officials concluded that the world's largest watershed deserved further climatonomic study. In 1978, INPE invited H.L. as well as me to come to São José dos Campos as visiting scientists, 1 Jul. to 15 Aug., 1978, with a generous per diem for each of us. Our publication of results of our research at INPE is listed in Appendix 4..

Our research contributions to INPE were continued and required more visits. I followed up my earlier contact by letter with people in Joinville whose ancestors had emigrated to Brazil on the same boat as greatgranduncle Ottokar D. While we were at INPE in 1981, Don Enrique, the Perfeito of Joinville, invited me, as closest living relative of the first Perfeito, to attend the celebration of the 125th anniversary of the city. With Heinz, we really enjoyed our visit there. On the well maintained cemetery of immigrants a tombstone with Ottokar and Ida's cameo on their grave honors their contribution to the development of social life in the city. A house with two wings, designed and build by Ottokar D., the *"Casa Doerffel"*in a parklike section of the city, serves now as *"Museu de Arte"*. The *"Avenida Ottokar Doerffel"*is an entrance route to Joinville which prouds itself as *"cidade turistica"*. We were impressed by the proliferation of flowering bushes all over the city and the abundance of orchids blooming on the surrounding hillsides.

Finally, the family name appears as 'Dörffel Crater' on the Moon's backside, as 'Dörffel Asteroid' for Planetoid #4076 (14.9 km diameter), and as *"Dörffel Strasse, Monument, & Observatorium"* on the citymap of Plauen/Vogtland. The designations are honoring Master Georg Samuel Dörffel [1643-1688]. The story of Pastor Georg Samuel Dörffel who became famous as astronomer is narrated by Lenck-Hahnebach, [1960] and his merits as astronomer by Armitage [1951]. Three

centuries after his death memorial rites were held in Plauen and two Vogtland cities where Georg Samuel D. had lived, mainly and temporarily, respectively. I was invited to attend a series of lectures organized by my home town, the city of Plauen. Prof. Dörffel of Leipzig U. reported that there is a "missing generation" between the first of our clan (*1724) and the last two of Georg Samuel D.'s sons, Gottfried (*1686) and Christoph (*1688). Dr. Fiuczynski, Princeton, NJ summarized his genealogical studies by stating that the number of Dörffels in Vogtland by the three sons of Georg Samuel D., and of Christoph D., Dean of Oelsnitz Cathedral, leaves little hope for unraveling family ties during the first quarter of the 18th century.

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