



THE UNIVERSITY OF WISCONSIN

DEPARTMENT OF METEOROLOGY
Meteorology and Space Science Building
1225 West Dayton Street
Madison, Wisconsin 53706

July 1980

Dear Friends:

I am still overwhelmed by the many kind expressions of appreciation which I received on occasion of my formal retirement from active teaching at the University of Wisconsin. I was especially touched by the letters from the twenty former graduate students who had taken the risk of adopting me as thesis advisor for their Ph.D. work at Madison.

Today I tried hard to prepare a "single-sheet handout" by which I could not only share with you some of the memories, but also to encourage you to keep in touch with me and with each other in the future. In lieu of listing the addresses, Kate helped me to compose the enclosed "two-page handout" with very brief extracts from all twenty letters. It makes me proud to document herewith that all of you are in responsible positions in academic teaching or research.

Some of you may miss, perhaps, two names, Luiz Molion and Melhi Erkman. Luiz had written a very kind note to my recent 70th birthday. He is one of the driving forces in meteorology at INPE, São José dos Campos, Brazil. In 1978 I had the opportunity to visit INPE and to continue with Luiz work on evapoclimatology.

Among all the cheerful letters, there was one with the sad news that Melhi, who had been a student at Madison in the early 60's, had died of cancer last fall. He was Director of the Meteorology Department at the Technical University at Istanbul where Kate and I had visited in June of 1977, enjoying Melhi as the most gracious host and guide through Istanbul, the city he had loved so much.

My plans for retirement? According to Webster's Dictionary it means withdrawal, seclusion, privacy. None of the above, but ... active research will continue to fascinate me and keep me young at heart. Working on a text on climatology will be foremost on my agenda. I would welcome any report on any progress in this field. We may think of exchanging information on advances and ideas by way of a round-robin newsletter to all the "Friends of Climatology".

I am looking forward to hearing from the "Friends", Kate and I will take care of spreading the gospel.

Best regards and thanks to all of you.

EMERITUS PROFESSORS FIND PRODUCTIVE RETIREMENT

HEINZ LETTAU

June 30, 1980 marked the retirement of Heinz H. Lettau, Increase A. Lapham Emeritus Professor of Meteorology, Ph.D. University of Leipzig (Germany) 1931; Ph.D. habil, University of Leipzig, 1937. Dr. Lettau joined the U.W. Meteorology staff in 1958 after previously being a professor in Leipzig and in Konigsberg, Germany. His special areas of expertise include: micrometeorology, boundary layer problems, climatology, physical meteorology.

He provides the following rundown of his activities during his leisure years.

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Even at my dear old Alma Mater, the University of Wisconsin at Madison I was asked, and agreed to teach Met. 403 (informally) during the last two weeks of the Spring term, 1983, when Professor Stull was in Oklahoma to prepare a summer field experiment.

(2) Research: Continued to publish articles in "Boundary-Layer Meteorology" and assisting others in research efforts, notably Shi F. Zhang while he was a "visiting scholar" at Wisconsin in the exchange program with Nanjing University of China. Climatology modeling got a big boost by the acquisition of an "Apple II plus" computer for my home, and new ideas for concepts and algorithms, which then were incorporated in programs by such Departmental "Apple II" experts in "Pascalese" as Roland Stull and Craig Kunitani. Previous climatonic research on the recycling of precipitation in the gigantic "hydrologic cycle" of the Amazonas Basin received support, when at our third travel to Brazil (August 1981) a lecture at INPE was followed by an invitation to visit

CENA at Piracicaba, Sao Paulo; there, working with highly sophisticated methods of Isotope Analysis, research is performed on nutrient-soil-plant-air exchanges; isotope concentrations in rain and river waters have permitted quantitative conclusion on recycling processes.

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Dr. Lettau enjoying retirement banquet, May 24, 1980 at the Wisconsin Center, U.W. Madison.



Dr. Schwerdtfeger, Mrs. Schwerdtfeger and friends at retirement reception.

WERNER SCHWERDTFEGER

Werner Schwerdtfeger, Emeritus Professor of Meteorology, Ph.D. University of Leipzig (Germany) 1931, Ph.D. habil, University of Konigsberg, 1936, also joined Dr. Lettau in retiring in June of 1980. Dr. Schwerdtfeger joined the staff of the department in 1962. Previously he had been a professor at the Universities of Konigsberg, Vienna, Munich, Buenos Aires and Melbourne. His special areas of interest are circulation of the atmosphere and synoptics, with special emphasis on polar weather and climate.

Since his retirement, Dr. Schwerdtfeger has been honored by having the building library (joint Meteorology/SSEC) named in his honor. The Schwerdtfeger Library is found on the second floor. What does one do in retirement? Dr. Schwerdtfeger provides us with a brief glimpse of what has happened in his life.

If one likes the work one is doing, and feels it could be continued a few more years easily, retirement can come as a sad experience: "Now stop it, buster, you are too old!". While something like that is possible, Schwerdtfeger had good luck, as it has happened quite a few times in a long life. His colleagues and friends recommended it, so the Chancellor named him a Professor Emeritus. That made it possible to keep contact, have a small office, and use the Department's friendly facilities. -- It is now 53 years since Schwerdtfeger wrote his Ph.D. thesis on "Polar temperature and pressure waves," and in the last 25 years his research interests were mainly directed to meteorological problems of the Antarctic. Therefore, it came only natural to write down, as manuscript for a book, what he had learned in all this time, or is learning now from the new automatic weather stations in the far south that are so well planted and taken care of by Chuck Stearns and Mike Savage. Other pastimes includes the reviewing of proposals for NSF's Division of Polar Programs and of papers for AMS journals, and helping former and present students a bit if they ask for it, be it about foreign languages, meteorological literature, or data of years past.

Two student awards, named for Meteorology's emeritus professors, were established in 1980. The Heinz Lettau Award, for the outstanding Master's thesis in the department for the year, and the Werner Schwerdtfeger Award, for academic excellence by a first-year graduate student, are presented in the department each fall.

Fall, 1983 will be a special occasion with the award presentations coupled with the unveiling of portraits of the two retirees in the faculty lounge. Drs. Lettau and Schwerdtfeger's portraits will join those of the department's three named professorships; Increase Lapham, Harry Wexler, and Emil Trough.

SELECTED RESEARCH PROFILES

LYLE HORN

Between Lyle Horn's teaching, research, and administrative duties, it's a wonder he has time to eat and sleep. As Associate Chairman for Undergraduate Affairs—a position he's held for several years—and as acting department chairman for a time this summer, he has maintained a very public profile: things to do, people to see. All of this is quite time consuming, he said, but the contact with people is very rewarding.

His research is presently concentrated in two areas, soundings of the atmosphere made from satellites and atmospheric energetics. One project, sponsored by NOAA, involves evaluation of alternative retrieval methods for obtaining soundings from satellites. Horn and Dr. Thomas Koehler are looking at different ways of interpreting microwave and infrared radiation emitted from the earth and atmosphere. It is these satellite based measurements from which temperature profiles are constructed.

Horn's other grants involve atmospheric energetics—a long-time interest of his. For many years, he said, an approximate, simplified expression of available atmospheric potential energy has been used. But more recently, the "exact" expression has been applied to try to understand how and why energy, ultimately supplied by the sun, drives the atmosphere and is responsible for weather. In this NSF-sponsored study, Horn, Koehler and Linda Whittaker are looking at cyclones (large scale low-pressure areas which feed on available potential energy) to better understand their energetics.

NASA has recently approved a grant to study that agency's atmospheric circulation model from an energetics approach. Using the exact form of the energetics equations, Horn, Koehler and Whittaker are comparing the model's accuracy when it is run using both satellite data and conventional data (balloons, etc.) with that achieved when only conventional data are used. The question: "Do the atmospheric energetics look like what the model predicts after (some) time has passed?"

In recent years, Horn has taught courses in dynamics and synoptics, as well as the survey course, Weather and Climate. His yearly trips to the Canadian Rockies are his respite from the Madison hubbub.

DAVID HOUGHTON

Professor David Houghton, department chairman from 1976-1979, and instructor of Dynamic Synoptics, Numerical Modelling and General Meteorology has, for several years, pursued a research interest in satellite and radar data, and how these data impact computer weather prediction models. So far, he has shown that satellite data does not make the mesoscale prediction models he's testing worse, but more work needs to be done to identify the real benefits, he said.

A computer prediction model developed recently under Houghton's research project, "Modelling seasonal cycles in atmospheric circulation," simulates the whole atmosphere of the earth at once and the responses of the atmosphere to external forcing parameters such as the sun, oceans, clouds and moisture thermodynamics. This model is unique, Houghton explained, not only because it takes into account seasonal variation—the uneven heating of the earth—but it also can run much quicker than previous models, allowing researchers to run up easily to three-year cycles instead of only 90-day cycles.

Houghton is also serving as editor-in-chief of the Handbook of Applied Meteorology. For several years, he's been juggling the schedules of 45 people in compiling the 900-page technical reference for general use, which will be published next summer by the John Wiley Company.

Houghton's 1980 five-week trip to the People's Republic of China was the highlight of times he's spent away from Madison in recent years. During three weeks of the trip, he presented 15 three-hour lectures through interpreters at Nanjing University. Presenting the lectures, which Houghton termed "a very intensive ordeal," required that he have every lecture typed verbatim the day before presenting it, for translators.

Back at home, Houghton serves on several committees, including a national committee of the AMS and a panel that advises NCAR on the use of the Center's two Cray computers. He is also the UCAR representative from Wisconsin.

JOHN KUTZBACH

John Kutzbach is enjoying the 2nd year as "ex-chairman," having been Chairman of the Meteorology Department for three years—Sept. 1979 to Sept. 1982. He continues as Director of the Center for Climatic Research. His current research interests are in the area of climate dynamics, dealing with climate variations on time scale ranging from 1000's of years (glacial to interglacial fluctuations) to years or seasons.

One NSF-sponsored project aims at describing the global patterns of climate for the past 20,000 years and then comparing those descriptions with simulations of past climate from general circulation models. About 10,000 years ago the monsoon circulations of Africa and South Asia were more intense, and the models accurately predict the climatic change when the correct values for the earth's orbital parameters (axial tilt and time of perihelion) are used to calculate the solar radiation. The project, published in Science and J. Atmos. Sciences, involves collaboration with botanists, geologists and oceanographers; Kutzbach has lectured on this topic at Yale Univ., Columbia Univ., Univ. of Chicago, and Univ. of Washington during

the past year. He was also a Visiting Scientist at NCAR during the summer.

In another NOAA-sponsored project, he is studying global-scale fluctuations of the atmospheric circulation on time-scales of 30 to 90 days; in particular, the change in long-wave pattern that produce intra-seasonal changes of weather (wet Junes followed by dry Julys; or, cold Novembers followed by warm Decembers).

Kutzbach is currently serving on two national committees: the Climate Research Committee of the National Academy of Sciences, and the Advisory Committee on Atmospheric Sciences of the National Science Foundation's Atmospheric Science Division.

JOHN YOUNG

You don't have to live in south Asia to study monsoons. John Young proves that every day. As a major planner of MONEX (the monsoon experiment of the Global Weather Experiment of 1979), Young participated in both research and field phases of the project, including directing 180 U.S. staff and three research aircraft in Bombay, India during June of 1979*. The research, which continues today through large data sets extracted from McIDAS, global models, and other sources, McIDAS, still has "two or three" more years of funding. It's been going well, says Young, who is pleased with the research productivity of MONEX so far.

Young's personal research concerns monsoons as well. He has recently published a paper on the dynamic messages for monsoon winds that can be gotten from satellites. Young deduced many features of the forces affecting monsoon flow and is using satellite data to make some "fairly sophisticated calculations" in the area of low-level monsoon wind dynamics.

Young has also worked a lot on theory of air flow across the equator. A fundamental part of monsoon flow, he explained, is the air that moves from the Southern Hemisphere to the North during our summer, which becomes the southwest monsoon of the Arabian Sea and later crosses India and southeast Asia. Young presented a theoretical paper in Brazil this summer on trans-equatorial flow at the first international conference on Southern Hemisphere meteorology.

Other topics on which Young has recently published papers include jetstream dynamics, mesoscale dynamics and strong gravity waves and their effect on the weather. His teaching, he said, has concentrated almost exclusively on the dynamics courses in the graduate curriculum.

*Then, in 1981, he was in charge of an international conference in Tallahassee, Florida where preliminary results of MONEX were presented.

For You

"LETTAU'S LEISURE..."

(Some notes on the retirement of Heinz Lettau)

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