

WELCOMING ADDRESS

A. Wiin-Nielsen

I should like to welcome all of you to the fifth annual seminar of the European Centre for Medium-Range Weather Forecasts. While the seminar has been held every year since 1975, this is the first year where we can hold it under our own roof and I am therefore also happy to welcome most of you to the new headquarters of the Centre for the first time.

Next year numerical weather prediction will be 30 years old. I have recently read with great interest in the Bulletin of the American Meteorological Society the vivid description of the preparation of the first 24 hour barotropic forecasts as told by Professor George Platzman, who was one of the participants. The others were Jule Charney, Ragnan Fjørtoft, John Freeman and Joseph Smagorinsky. The preparations started on Sunday, March 5, 1950 at 12 p.m. and after 5 weeks of hard work, including many programme corrections and waiting periods because the computer, ENIAC, was unreliable, they managed to make two 24 hour forecasts. Platzman's historical note, published in April 1979, reminded me very much of the situation at the Centre in 1975-76 when L. Bengtsson and his crew completed the first 10 day global forecasts on the old CDC 6600 computer at John Scott House in Bracknell.

The foundation for the first short-range forecasts was Charney's model of the equivalent barotropic atmosphere which, in turn, had been analysed theoretically by Rossby and him. Since then we have learned how to integrate the primitive, hydrostatic equations. We have developed new numerical procedures and we have worked on the incorporation of many physical processes in our models through the various parameterisation schemes. It is probably not too much to say that the present operational model of the Centre contains all of our present knowledge concerning model design for global medium-range prediction. In spite of this we must realise that

we have not solved the 10 day prediction problem. Our present experience shows that with the existing data and the existing model, the present practical limit of predictability is not more than one week. This fact is no reason for pessimism. It took 25-30 years to bring 1 - 2 day forecasts to the high level of accuracy we have today. How long it is going to take to crack the 10-day problem I do not know but I know that if we shall accomplish this task it is a necessity that we shall be able to continue the research on the problem, that we shall continue to have an adequate, global, meteorological network of observations and that the co-operation between the theorists and the operational meteorologists at the Centre shall continue.

It is therefore entirely appropriate that the theme for the seminar this year is Dynamic Meteorology and Numerical Weather Prediction. I sincerely hope that some good interactions will take place between the invited lecturers, the participants in the seminar and the staff of the Centre.