SECTION I

THE PHYSICAL EVIDENCE

CHAIRMAN'S STATEMENT

JULE G. CHARNEY

I consider it a very great honor to be invited to be chairman of this session. I have been searching for the rationale which lay behind the invitation, and the only explanation I could possibly find is that as a non-oceanographer, I am probably the most naive person here, and perhaps it was hoped that out of the mouths of babes the truth would come. At any rate, I shall derive courage from my naiveté to make some comments.

When one looks at the program of the meetings, one cannot fail to be struck by the extreme diversity of the subjects to be discussed. Every conceivable time and space scale is represented. We are going to talk about phenomena with periods of the order of days, weeks, months, years, and even, I notice in Dr. Hubbs' title, millenia. Although the spectrum is very broad, it seems to have a maximum intensity at about a year. As for the space spectrum, the preliminary data indicate that it is equally broad, ranging all the way from narrow boundary phenomena to phenomena embracing an entire ocean. Of course the atmosphere is also involved, as is the solid earth, and this evening we shall have a lecture on solar events.

So that this makes me feel that oceanography is one of the few fields of human endeavor in which the Renaissance spirit persists, where it is possible in a finite time and in a finite way to encompass a subject so vast as the one we propose to treat here. As in a Renaissance court of the 15th or 16th century, we shall talk about biology, physics, mathematics, astronomy, and, I'm sure, philosophy and ethics.

Yet, I think that the intention has certainly been, despite all the diversity, to discover a unity. I do not know what the unity is going to be, so I shall not attempt to influence the course of the discussion, but I do think that the most desirable method of procedure is to present the facts as concisely and as briefly as possible, and as soon as possible to bring the audience into the discussion, because I think that we should avoid too great a preoccupation with one or another of the facets of a given phenomenon in order not to lose sight of the features it has in common with other phenomena. We may thus hope to discover the causal factors that hold them all together.

It is appropriate that the first speaker is Mr. Namias, who will discuss the atmospheric events that are presumably responsible for the oceanic changes. I wish to say here that we meteorologists have been particularly at fault in regarding oceans as a kind of passive body which merely responds to the motions of the atmosphere. It is clear, if one considers long-period changes, that this cannot be the case. Indeed, for long-term changes, it is probably more the other way around. Ultimately we shall have to consider the oceans and atmosphere as a coupled dynamical system. I would hope to see as a result of these meetings a more fruitful collaboration among meteorologists and oceanographers, resulting perhaps in the discovery of causal relationships between changes in ocean and atmospheric circulations.

A last remark—we have eight speakers today and approximately five hours of time to devote to formal presentation and discussion. I think that the most fruitful method of procedure is to keep the formal presentations brief and to bring the audience in as soon as possible. Then if the speaker has more facts that he wishes to communicate, he can let them come out during the discussion. In keeping with the informal intention of this Symposium, members of the audience should feel free to break in at any point during the discussion. To prevent my own from becoming longer, I will introduce the first speaker, Mr. Jerome Namias, of the U.S. Weather Bureau, who will give us the meteorological picture.