

AIR MAIL

February 6, 1982

Dear Dr. Fein,

I thank you very much for your letter dated 29th January, 1982. I shall send you an outline of my paper soon. The time schedule suggested in your letter is suitable and I wish you much success in the preparation of such a useful book.

With kind regards,

Yours sincerely,

Sd/-

(M.S. Swaminathan)

Dr. Jay S. Fein,
Program Director,
Global Atmospheric Research Program,
National Science Foundation
WASHINGTON D.C. 20550

Copy to Shri K.R. Subramanian, Science
Office, U.S. Embassy, Chanakyapuri, New Delhi-21.

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(M.S. Swaminathan)

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NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550
DIVISION OF ATMOSPHERIC SCIENCES
GRANT PROGRAMS SECTION

January 29, 1982

Dr. M. S. Swaminathan
Yojna Bhawan
New Delhi 11001, India

Dear Dr. Swaminathan:

We received the most welcome news today from Dr. J. Shukla that you will consider writing an article for the book on monsoons that my associate, Pamela Stephens, and I are co-editing. We feel that your contribution would add immensely to the book.

As Dr. Shukla has probably explained, the book will consist of a series of chapters contributed by experts in several fields relevant to monsoons. It will be written on a semi-technical level as part of the successful John Wiley and Sons series called, "Advances in Environmental Sciences and Technology". Since interest in monsoon and climate research is especially high now, it seems to be an ideal time to do this type of book.

The book will explore the following topics:

- Folklore and History
- Impacts: Social, Political and Economic
- Physics and Dynamics of Monsoons
- The Relationships of Monsoons to Global Weather and Climate
- Modeling and Prediction of Monsoons

A preliminary outline of the chapters for the book which incorporates these topics has been developed and is enclosed.

Dr. Shukla has told us about your excellent presentation at the WMO Drought Symposium at Delhi last December. Perhaps that talk could be developed into an article suitable for part of Chapter 3 or for Chapter 7, Section 4, or better yet, for both.

You may be interested in the schedule for completing the book which is:

Outlines from authors due	15 February 1982
First drafts due	September 1982
Revised drafts (if necessary) due	May 1983
Final manuscripts due	September 1983
Book completed	December 1983

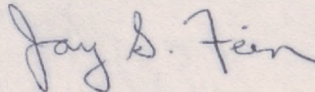
We anticipate that each article will be from 15-25 printed pages, but this is flexible.

We are quite enthusiastic about the book and would be very pleased to have you join with us in producing it. We are aware that you will soon be moving to the International Rice Research Institute at Manila and that your personal schedule must be quite hectic. However, in order to adhere to our schedule we must request that you send us your tentative outlines as quickly as possible. If we can provide any assistance with respect to the book, please let us know.

Correspondence to us can be sent through Mr. K. R. Subramanian, Science Office, U.S. Embassy, New Delhi (telephone: 690 351 ext. 310). Incidentally, Wiley and Sons pays its authors modest royalties.

Looking forward to hearing from you, I remain,

Yours sincerely,



Jay S. Fein
Program Director
Global Atmospheric Research
Program

Enclosure

1.0 Introduction (Fein and Stephens)

1.1 Objectives and scope

1.2 Monsoon systems of the world - similarities and differences

1.3 Basic mechanism of monsoons

2.0 Folklore and History

This section will include monsoons in past and present cultures and popular concepts of the cause and effect of monsoons. It will be expanded and modified in response to specific ideas from people we have contacted.

3.0 Impact of Monsoons

This section will cover social, political and economic impacts. Topics under this section should include resource management, agricultural production, water resources, flood prediction and control, health and natural disaster control. The section will be expanded depending upon the authors selected.

4.0 Physics and Dynamics of Monsoons

This section will be descriptive and aim at a rigorous but not overly technical treatment of how monsoons work. It will include basic concepts such as:

- solar and terrestrial radiation
- heat capacities of land and ocean
- geography and monsoons
- geophysical forces that influence monsoons
- monsoon circulations

5.0 Monsoons and Global Weather and Climate

5.1 Paleoclimate and monsoons

5.2 Monsoon interactions

5.2.1 Global weather systems

5.2.2 Ocean circulations

5.3 Interannual variability of monsoons (Shukla)

This section will describe the relationship of monsoons to other systems in the atmosphere and the ocean. Interactions and feedbacks will be discussed on both long and short time scales and

and small and large space scales. The section will end with a chapter on interannual variability of monsoons in which the observed variability will be described in terms of these interactions and feedbacks.

6.0 Modeling and Prediction of Monsoons

6.1 Evolution of monsoon models

6.1.1 Simulation

6.1.2 Prediction

6.2 Problems in monsoon prediction

6.2.1 Short-range, day-to-day, prediction

6.2.2 Long-range, seasonal, prediction

This section will trace the evolution of monsoon models from the earliest simple concepts to the present day complex models that include detailed representation of the relevant physics. It will conclude with a description of how these models are used in practice in India for day-to-day and for seasonal forecasts of monsoons.

7.0 The Future

7.1 Prospects for observing the monsoon (to include, at least, satellites)

7.2 Prospects for improved short-range monsoon prediction

7.3 Prospects for improved long-range monsoon prediction (Shukla)

7.4 Predictions and warning systems and government and public response: a problem for the future.

The final section of the book will look ahead at prospects for improved monsoon predictions and discuss what might be done to optimize the benefits from such improvements.