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EDITOR'S FOREWORD

The work is believed to be fairly complete from the bibliographic standpoint, for Miss Payne has endeavored throughout to give a synopsis of the relevant contributions by various investigators. Her own contributions enter all chapters and form a considerable portion of Parts II and III.

It should be remembered that the interpretation of stellar spectra from the standpoint of thermal ionization is new and the methods employed are as yet relatively primitive. We are only at the beginning of the astronomical application of the methods arising from the newer analyses of atoms. Hence we must expect (and endeavor to provide) that a study such as is presented here will promptly need revision and extension in many places. Nevertheless, as it stands, it shows the current state of the general problem, and will also serve, as a summary of past investigations and an indication of the direction to go in the immediate future.

In the course of her investigation of stellar atmospheres, Miss Payne has had the advantage of conferences with Professors Russell and Stewart of Princeton University and Professor Saunders of Harvard University, as well as with various members of the Harvard Observatory staff.

The book has been accepted as a thesis fulfilling the requirements for the degree of Doctor of Philosophy in Radcliffe College.

H. S.

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