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BOOKS

Pressure of Thought

THE GROWTH OF PHYSICAL SCIENCE.
By Sir James Jeans. Georgian House.

IT is difficult to believe that this is the last of Jeans's books of popular science. The proofs were revised by the author just before his death. It is fitting that the series that began with *The Mysterious Universe* should end with the history of man's attempts to understand it. For that, in essence, is what "The Growth of Physical Science" sets out to do. All the qualities of the earlier Jeans are here, the systematic approach, the simple explanation, the clear style, the collection of odd and strange stories, all of them superbly appropriate in their contexts.

The book is arranged, in the main, chronologically by topics. The subsections of physical science are treated in them in convenient periods of time. Where this is not possible as, for example, in some of the earliest records, Jeans gathers the whole of science as it existed in civilisation as geographic units. This method consists substantially of a series of biographies. It is possible to doubt the importance of the personal angle. For example, the fact that the calculus was discovered is vastly more important than any controversy as to whether Newton or Leibnitz were its parent. The criterion of the effectiveness of this approach is the coherence of one's view of science at the end, and there may be some lack here. Yet how lively it all is! Quaint folk pop up in the most unexpected places. Good stories are legion and we obtain most unexpected sidelights upon the rise of scientific ideas. Jeans, as usual, has dredged the original sources and has selected the best from a rich store of stories. Stories of Galileo, of the solving of cubic equations, of Newton's eccentricities, of jet propulsion two thousand years ago.

We are led insensibly to quite difficult notions. Jeans observes that science proceeds in the same way as a school-boy learns. While this is not wholly true, it serves to illustrate the method of *The Growth of Physical Science*. Not only are the ideas themselves introduced, we also discover something of how ideas merge, are lost in an unpropitious environment, then reappear in happier times. This is a book for the educated layman. Jeans has had abundant practice in writing for that inquiring person, and this work reflects it. It is a practised work. Yet the educated layman may

well quarrel with the proportion of ancient to modern. It is true that the best stories are all of ancient vintage, but the importance of a history such as this lies in the help it affords Everyman to make those decisions which he must. And that means post-Industrial Revolution science. Jeans does not stress sufficiently that in our century, at long last, technical skill is sufficient to meet all



SIR JAMES JEANS

Six thousand years in 400 pages

the demands of experiment, and the lack of this has been the principal inhibitor of scientific progress in the past.

His own science, astronomy, may perhaps receive a rather generous allotment of space; he may at times skimp a contemporary, at other times over-simplify an idea; yet the reader, at the end, does have some conception of what it is all about.

Some of the illustrations are singularly arresting. The frontispiece (Tenier's "Alchemist"), all the earlier sketches and Sir J. J. Thomson's sceptical look as Lord Rutherford expounds... these linger in the memory. The index consists largely of proper names and this reflects the book. It is primarily a story of people and only secondly a history of ideas.

Yet here we have in fewer than 400 pages a story covering 6,000 years, from the remote beginnings right up to the frontier of knowledge. A story told with charm, in places with power, with clarity and sincerity always. Sometimes it invites comparison with Whitehead, and even if the philosophical background be less profound there is still a fine exposition of the "patient pressure of thought."

—J.D.McD.