

energy are recorded here. The author conveys the results of many illuminating interviews. His own point of view, as a result of direct conversations on the momentous matters concerned, becomes especially interesting, particularly because he pulls no punches in putting his story across. Early in the book he lists candidly the reasons why Oppenheimer should *not* have been head of the Los Alamos operation. Later on the candor turns into brutal frankness when he recounts the Oppenheimer Affair of 1954. This is one of many highlights of the book and will probably stand as the most restrained possible version of the security hearings. Many different opinions from the physics community could properly have been added—but these may fill another book.

Although it is not a historically accurate account, this is a highly commendable work because it broaches forthrightly a wide range of topics of profound concern to basic scientists.



The general and the scientist: Leslie R. Groves and J. Robert Oppenheimer in a 1945 photo. From *Day of Trinity*.

HISTORIOGRAPHY IS CORRECTING THE LAST WORD

KEPLER'S CONVERSATION WITH GALILEO'S SIDEREAL MESSENGER. First Complete Translation with an Introduction and Notes. By Edward Rosen. 164 pp. Johnson Reprint Corp., New York, 1965. \$9.00.

by L. Marton

In reading the present translation of Kepler's work, I was more surprised by the psychological features than the physical ones. The writing of history, be it the history of science or the history of human events, is always full of pitfalls. Anybody writing on a historical subject says what he thinks is the last word and then somebody comes along and corrects him extensively. This happens here, and in view of the very extensive remarks, amounting to corrections, on the part of Professor Rosen, I would like to add one comment myself with regard to assertions that Kepler tended to oppose Galileo.

* * *

The reviewer is chief of International Relations for the National Bureau of Standards.

I had the opportunity to read recently a somewhat related book entitled, *Optics, The Science of Vision*, by Vasco Ronchi. Professor Ronchi is a recognized authority on the history of optics, and on page 46 of his book, speaking of Galileo's publication of the *Sidereal Messenger*, in March 1610, he makes the following comments: "Questioned from all sides, Kepler kept quiet, for he too was perplexed. Finally in August 1610, he laid hands on a telescope made by Galileo, who had sent it to the Elector of Cologne. Kepler carried out observation with the mental disposition of a man intent on destroying, but he ended up agreeing that Galileo was right." That the above statement is inaccurate seems to be proved by the introduction to Professor Rosen's translation. According to this introduction, Galileo sent a copy of his message to the ambassador of Tuscany in Prague early in April (it was published in March). "The ambassador had this copy of

Galileo's message and delivered it to Kepler and on April 8, 1610, the same emissary conveyed an invitation to the Imperial Mathematician to visit the ambassador on April 13. When Kepler kept this appointment, the ambassador read Galileo's request to him. The official couriers were scheduled to return to Tuscany in less than a week, and Kepler promised to have his response to Galileo's message ready before they departed. Kepler's letter of April 19, . . . was put in the ambassador's hand on that day." . . . "Many other people were eager to know Kepler's opinion about Galileo's message. Instead of replying to each one individually, the Imperial Mathematician decided to have his letter of April 19 printed at his own expense. . . ." "Then on May 3, 1610 he dedicated the little work to the ambassador and it was published in Prague."

As to Ronchi's remark about Kepler being perplexed, may I quote another sentence of Kepler's from his

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"Notice to the Reader"? "Yet, let no one assume that by my readiness to agree with Galileo, I propose to deprive others of the right to disagree with him. I have praised him but all men are free to make up their own minds."

It is interesting to note how prone to controversy is the whole book, including Professor Rosen's comments. Kepler makes the following remark in his "Notice to the Reader," "But people in the academic world need not be reminded . . . what it means to defend one's position. . . ." (Italics not mine, but Kepler's) Indeed priority squabbles in those times were much sharper than today. The famous fight between Newton and Hooke is one example. So Kepler, while praising Galileo's achievements, points out his own work all through his book, and also what his teacher Maestlin had done. There are constant references to Kepler's *Optics*, as well as to many other books. Today we seem to be ashamed to put our priority squabbles as forthrightly as it was done in those days.

The other controversial aspect of the book is contained in Professor Rosen's very numerous commentaries. For 49 pages of the translation of Kepler's book, there are 424 commentaries, and they take up over a hundred pages. Professor Rosen tells us right at the beginning that this is the first *complete* translation of Kepler's work because, according to him, the only existing (German) translation by Otto J. Bryk, which appeared in Jena in 1918, does not include the "Dedication" and the "Notice to the Reader." In view of the interesting remarks contained in the "Notice to the Reader," quoted above, I am willing to go along with Professor Rosen's viewpoint. What bothers me a little more is that a great number of the 424 notes are straight polemical comments on either Bryk's translation or other people's interpretation of Kepler's writings. When I first looked at these notes, I started counting the number of occurrences of the word "despite." They became so numerous that finally I gave up counting them. So much ex cathedra attitude becomes suspicious. I wouldn't be surprised if to-

morrow somebody came along and debunked some of the statements of Professor Rosen.

The controversial aspects do not diminish in any manner the merit of Dr. Rosen's work. He has done a masterly and scholarly piece of work in providing us with this new translation, and it is certainly a great contribution to our knowledge of the science of those times.

A SUMMARY OF 35 YEARS

ELECTRICAL CORONAS. THEIR BASIC PHYSICAL MECHANISMS. By Leonard B. Loeb. 694 pp. University of California Press, Berkeley, 1965. \$14.00.

by Sanborn C. Brown

Every creative man dreams of the time toward the end of his career when he can sit down and summarize his field of endeavor and leave for posterity his insight and wisdom gained through a lifetime of work. Few ever bring this dream to a reality, but Professor Loeb has done this in the latest of his many books, bringing together the progress in knowledge of the corona mechanisms which has been made over the last 35 years.

This volume is much more than a textbook on corona discharges. It is a chronicle of the development of our understanding of their physical mechanisms in an age when scientific writing is so rigidly controlled by the economics of the book-publishing trade that the narrative quality of scientific writing has all but disappeared. It is refreshing to find the University of California Press printing a personal account of a man guiding his students, friends, and admirers through the intricacies of a difficult, and yet rewarding, search for the understanding of physical phenomena.

Reading the bibliographies as well as the text, one has the feeling that Professor Loeb could call by first name or nickname over 90 percent of those referred to, and yet the references contain the world's literature on the subject of corona discharges. In unraveling the solutions to the many

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The reviewer is a professor of electrical engineering at MIT.



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