GEOFIZIKA VOL. 20 2003

Book review

Leuchtende Nachtwolken (Geschichte, Entwicklung, Beobachtungen)/ Noctilucent Clouds (History, Development, Observations)

by Wilfried Schröder

The Geophysical Institute library has recently received the newest monograph by Wilfried Schröder. His previous monograph with a similar topic (Noctilucent Clouds/Leuchtende Nachtwolken, 1998) was already presented in Vol. 15 of the *GEOFIZIKA* Journal.

The monograph contains numerous historical details regarding the observations of twilight and noctilucent clouds (NLC), found and collected by the author. It has been issued as »Beiträge zur Geschichte der Geophysik und Kosmischen Physik«, Band IV, Heft 2 (2003), labelled as a science edition and published by the author. The monograph, or booklet, as referred to by the author himself, has 183 pages. The subject matter is divided into eight chapters (not numbered): *The Krakatoa event and associated phenomena, Were NLC caused by the Krakatoa eruption?, A case study of research problems before 1885, Otto Jesse (1838–1901), Volunteers and NLC, An NLC Manual Selected Papers by Otto Jesse.*

The first 100 pages of the booklet contain many tables, graphs, photos (including one in colour), and bits of texts, reprinted from the author's already published articles, describing the phenomenon of twilight and NLC. The author supports the opinion that the NLC phenomenon is the consequence of particle intrusion into the upper atmospheric layers after the giant eruption of the Perbuwaran volcano on the Krakatau Island (between Java and Sumatra) followed by a number of consecutive eruptions during August 1893. Over a period of two years, the particle intrusion reached the layers of the mesosphere.

This opinion is based primarily on numerous studies made by the German astronomer Otto Jesse (1838–1901), who first systematically observed and analysed the phenomena of twilight and NLC over Germany. It stresses the importance of his contacts with scientists all over Germany and in other countries, and the importance of his articles and studies printed in the period 1986–1896. The second part of W. Schröder's booklet is a reprint of ten of Jesse's most significant papers (in German) on the same topic. W. Schröder

considers these NLC studies to have been the very start of upper atmosphere physics.

The articles reprinted in the first part of his monograph are written partly in English and partly in German, including the corresponding literature. The articles contain tables comparing older and more recent data, obtained by different authors, all relating to twilight and NCL observations and research, from the 19th century up to the present. The booklet presents many interesting results and conclusions. However, discussions and conclusions are often repeated, as well as the corresponding references, which, when reading, interferes with the clarity of the main ideas. An extended introductory article, incorporating and categorising the results and conclusions, with a list of still unsolved and open problems, including an undivided reference list, would make the reading of the monograph much easier, and would fulfil an educational purpose.

Inga Lisac