

cians" (presumably the likes of Robert May) do not understand that, in the real world, factors other than population density affect the rates of birth and death. This extraordinary assertion is coupled with a number of misconceptions about the nature of population regulation and the detection of density dependence. Strong views it as a serious flaw that deterministic models do not describe the stochastic variability of real populations. Yet apart from adding noise, the alternative models he suggests contribute little to our understanding, while at the same time clouding the fundamental predictions which the simpler models are able to make.

One could easily come away from this book in the belief that the New Ecology is to be a science without theory, and with no explicit, simple models of dynamical behaviour. Even where the role of quantitative theory is acknowledged, the plea seems to be for increased "realism" at virtually any price. However, to replace linear density-dependent functions in deterministic models by strongly non-linear functions in stochastic models, is only sensible if these increases in complexity expose qualitatively different dynamic behaviour. There is no evidence of this here.

An important theme addressed by several of the contributors — Wiens and Price among them — is the central role of resources in determining community structure and function. There are formidable practical problems in this area; for example, while it is sometimes quite straightforward to determine the *use* of resources (for example to see where a butterfly lays her eggs), it is extremely difficult to measure resource *availability*, and virtually impossible to assess the *suitability* of the resources as the consumer itself perceives them (for example to understand why certain host plants do *not* have eggs laid on them). Problems of measuring "resource quality" in a currency appropriate to the consumer species are fundamental to the plant-herbivore studies which form the basis of so many of the papers in the book. Sad to say, no new approaches to resource assessment are described in these pages.

The title *A New Ecology* suggests a treasure trove of novel ecological insights. While it is far from that, the book may fulfil one of its stated aims by "providing a source of discussion topics", although it certainly will not guarantee that students who are beginning a research career in ecology can "readily assess how to make a major contribution to its development" (p.vii)! On balance, students are likely to benefit more from the good chapters than they will suffer from the poor. A New Ecology which coupled the excellence of the field experiments reported here, with the profound improvements in quantitative theory which are so signally lacking, would be a potent force indeed. □

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Star-watching from Leiden

Pieter B. Bosma

De Leidse Sterrewacht: Vier Eeuwen Wacht bij Dag en bij Nacht.

By Gijsbert van Herk, Herman Kleibrink and Willem Bijleveld.

Uitgeverij Waanders/De Kler, Grote Markt 9, Zwolle, The Netherlands: 1983. Pp.159. Dfl.32.50.

ONE of the oldest and most renowned scientific institutions in The Netherlands is the astronomical observatory of Leiden University: De Sterrewacht. As part of the celebrations on the occasion of its 350th anniversary in 1983, *De Leidse Sterrewacht*, a handsome, large-format history of the observatory was officially released.

The subtitle of the book, which in translation reads *Four Centuries of Alertness by Day and by Night*, needs an explanation. The anniversaries of the observatory are usually counted from 1633, because in that year modest observing facilities on the roof of the university building were put into service. However, lectures in astronomy had been given since the official appointment of Willibrord Snel in 1609. This adds 24 years to the observatory's history, but it does not extend its span to four centuries; 26 years are still missing. These years will be found in the future. As Professor H. van der Laan, chairman of the observatory, points out in his preface, an agreement on the cooperation of British and Dutch astronomers, of great importance for De Sterrewacht, does not expire until the year 2009.

From this it may be seen that the book should not be considered as a purely historical document. It is also not historically orientated in the sense that equal attention is paid to each period described. The average number of pages dedicated to each year grows roughly exponentially with the observatory's age, with about half of the book describing the past sixty years. This imbalance is justified if one remembers that an earlier record was written in 1933 by W. de Sitter, a former director of the observatory.

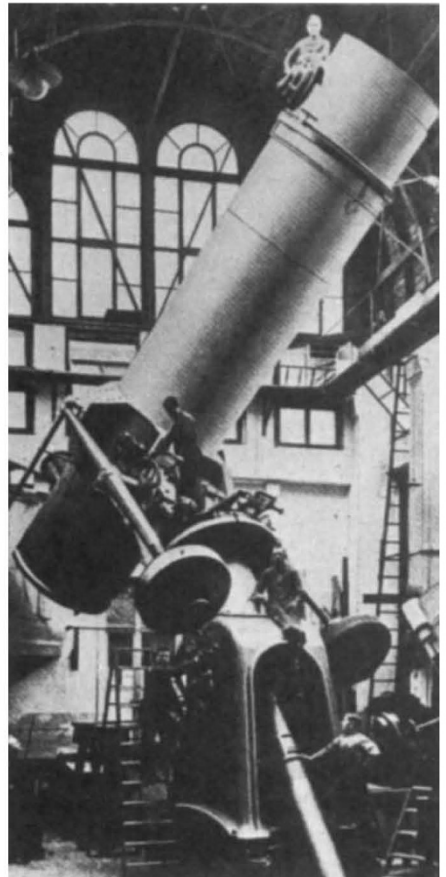
The first half of the book strongly reflects the efforts of successive directors to give a sound basis to the pursuit of astronomy in Leiden — in those days, too, it was sometimes difficult to find the necessary funds. In the second part the emphasis is on modern astronomical and astrophysical work. Although for many years now astronomy has been largely a matter of teamwork, the name of Professor J.H. Oort is prominent in the period after 1945. During this time the radio telescopes in Dwingeloo and Westerbork and the optical telescopes of ESO in Chile were built. Among other achievements, recent

years have witnessed a much better understanding of the structure of our Galaxy and completely new insights into the structure and behaviour of extragalactic systems. These are only two examples of successful scientific work; many more are briefly sketched in the book.

The authors G. van Herk and W. Bijleveld have written a vivid text in almost journalistic style, while H. Kleibrink has skilfully illustrated the book with a fine selection of many photographs and drawings. The text is in Dutch but a comprehensive summary in English together with a translation of the figure captions is given in the final 12 pages. Primarily, the book seems intended for those familiar with De Sterrewacht, but those interested generally in the development of astronomy may also like to read it. First, however, they'd probably better polish up their Dutch. □

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150 years of astronomy



Big science at the turn of the century — assembly work at the Zeiss factory, Jena, on a 120-cm reflecting telescope for Babelsberg Observatory in Berlin. The illustration is reproduced from *The History of Astronomy from Herschel to Hertzprung*, by Dieter B. Herrmann, recently published by Cambridge University Press (price £12.50, \$24.95).