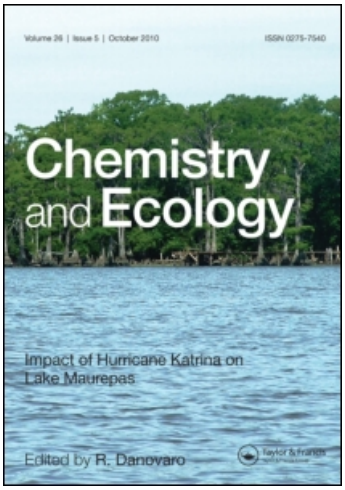

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Book Review

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BOOK REVIEW

B. J. Finlayson-Pitts and James N. Pitts, **Upper and Lower Atmosphere**, published by Academic Press, 1999, 969 pp, Catalog Card Number 99-63218, International Standard Book Number 0-12-257060-x.

P. Warneck, **Chemistry of the Natural Atmosphere**, Second Edition, published by Academic Press, 925 pp, **International Geophysics Series, Volume 71**, Catalog Card Number: 99-64620, International Standard Book Number 0-12-735632-0.

These books on "Atmosphere" came to me in 2000, within a week. It is right to consider them as part of the same story, and so they are together used in one review.

The first book, with a subtitle "Theory, Experiments, and Applications", has an Overview of the Chemistry of Polluted and Remote Atmospheres The subtitles cover the regions of atmosphere. Air Pollution of the Chemistry of our Troposphere, including the London smog (1952), Los Angeles smog (1940s), Acid Deposition. Other views of Chemistry of the natural Troposphere, Chemistry of the Stratosphere, Global Climate Change, Indoor Air Pollution, Discussion of OZPIR Model. Most of the book follows this account to the outline. A useful summary is given at the beginning of the book. They address the basic chemistry deriving key processes in the atmosphere and their critical interactions on local regional and global scales. Much of the work is in the Leighton book "Photochemistry of Air Pollution" (1961), but most references show a number of species covered in earlier works in USA. Some chapters give the London "smog" (1952), including the corporation of sulphate and particles, the Los Angeles "smog" (1940s), involving ozone and photochemical oxidants. In the later years that these two, mid-1970s, are linked through their atmospheric chemistry. Nitric oxide is now known to be converted to nitric dioxide during daylight in a reaction sequence

initiated by the hydroxyl attack on organic, involving water and R-dioxide. The "acid deposition" is from R. A. Smith (1847); he showed that in Manchester followed three types of areas as you go to the city to the countryside. Smith coined the word "acid rain". These oxidation processes show that rain at pH 1.69 is seen in southern California.

The stratosphere is an ozone layer, scattered by the ozone and oxygen reaction. The Antarctic observations are a combination of atmospheric clouds during the polar winter. Greenhouse gases have increased in later years. Carbon dioxide, but also the trace gases, has caused altering cloud properties. Chapter on the "sensitive" issues for precipitation for populations. Particles in the atmosphere, a major source from sand, sea spray, and biogenic emissions and volcanic eruptions. These are scattered and a potential hazard to man.

Other authors are not so well illustrated in this book – where is the Gaia hypothesis of J. Lovelock (1994), where is the J. Houghton book on the atmospheric warming (1994), and where is the J. Brimblecome book on atmospheric changes (1986)?

The second book has a preface of the first and second edition, noting the progress since the first edition, and the little progress in other areas with less attention, perhaps of the organic fraction. Some of the text has been rewritten, other sections have been unchanged, because the concepts are still valid. Some sections have been revised to show new data, perhaps also in perception. The classic topic was covered by C. E. Junge in 1963, "Air Chemistry and Radioactivity". Much has developed over the past few years. Most problems are of local air pollution, while the natural atmosphere has received only a fragmentary treatment. The recognition of human perception of the global atmosphere is now a shift in attention away from local to global conditions.

Much of the second book covers "Bulk Composition of the Atmosphere". "Photochemical Processes", "Chemistry of the Stratosphere", "Chemistry of the Troposphere", "Hydrocarbons and other Volatile Compounds". "The Atmospheric Aerosol", "Chemistry of Clouds and Precipitation", "Nitrogen Compounds of the Troposphere", "Sulfur Compounds in Atmosphere", "Geochemistry of Carbon Dioxide", "The Evolution of Atmosphere". The references are very full (776–904 pp.) and the Index is acceptable. Supplementary

tables provide a useful check of many compounds included in atmosphere, along with the usual conditions of atmosphere.

Much of the book describes the atmospheric oxygen, an a part of the atmospheric methane. Our knowledge of the process is small, covering the last 600 years. Compared to the rich photoscopic period, the sediments present the sediments earlier than that are summarised. However, not all the literature is not resolved.

Altogether these books have a lot of messages, but all the atmospheric knowledge is poor. Perhaps one will have a European vision of the atmosphere, and others will want the Californian one. Perhaps the confidence will show in the important sales of the books; I am sure that the USA one is good, sometimes even with some pleasure.

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