Homogeneous Catalysis – Mechanism and Industrial Applications. Sumit Bhaduri and Doble Mukesh. John Wiley, 605, Third Avenue, NY 10158-0012, USA. 239 pp. Price: $84.95.

Organometallic chemistry has natured over the last fifty years into an important subdivision in chemistry. By its very nature, as an interdisciplinary subject at the interface of organic and inorganic chemistry, it has suffered from peculiar disadvantages. One of them is the lack of good organometallic chemistry textbooks at different levels. In comparison with textbooks available in organic or inorganic chemistry, the choice in organometallic chemistry is truly limited. Hence the practising organometallic chemist would make no apology for introducing yet another book on the subject.

In any book, the authors' background colours her/his view of the subject, resulting in a book with a distinctive flavour. This book is no exception. The authors have a rich experience in the industrial world and it is no surprise that the book reflects their expertise. The book discusses organometallic chemistry that is relevant to homogeneous catalysis. Catalysis by transition metal organometallic compounds however, is the major theme.

Some of the unique aspects of the book that make it special need to be mentioned. Unlike other organometallic chemistry books, this one discusses only processes relevant to industries, and hence it is quite selective. Reactions that are of mere academic interest are not included. Fortunately, it is the industrially important reactions that have been studied extensively and so this is not a serious drawback. Secondly, it is distinctive because it gives process parameters for several reactions. While this is often ignored or glossed over by most authors, it gives the student a very good idea of the conditions required to carry out reactions on an industrial scale. Industrial conditions might often be different from what is necessary or even accessible in the laboratory. The tabulation of various process parameters permits the effectiveness of different processes to be readily compared. It might make interesting reading for chemical engineers and chemists in industries.

The purpose of adding a chapter on unit operations is quite clear. An organometallic chemist rarely has any idea of how reactions are carried out in the industry. This chapter is meant as a quick introduction to chemical engineering aspects ignored by chemists. However, it is at a fairly low level and only explains the various terms involved. Skipping the chapter is not a great loss for the student of organometallic chemistry, nor would it hurt the chemical engineer who would already be familiar with these aspects.

The weakest section in the book is the question and answer section, especially the questions at the end of the first few chapters. The answers are not very helpful to students and some of the questions are clearly beyond the level at which this book addresses the subject. Lastly, it must be mentioned that the decimal enumeration of section equations and complexes permits easy reference. However, the use of similar brackets for equations and compounds leads to some confusion, which could have been easily avoided.

In summary, this is a good book on homogeneous catalysis by transition metal complexes, written in simple style and language that makes easy reading. The book would be an asset for libraries in R&D laboratories. For universities and colleges with chemical engineering students, this book might be a good addition. While it does not discuss organometallic chemistry with the rigour that is required for a student of organometallic chemistry, it gives a rapid introduction to the field. In addition, it addresses topics relevant to industries and what is practised.

A. G. SAMUELSON

Inorganic and Physical Chemistry,
Indian Institute of Science,
Bangalore 560 012, India
e-mail: ashoka@ipc.iisc.ernet.in

Rice Tungro Disease Epidemic – An Analysis. M. K. Satapathy and A. Anjaneyulu. Discovery Publishing House, 4831/24, Ansari Road, Prahlad Street, Daryaganj, New Delhi 110 002. 2001. 119 pp. Price: Rs 225.

One of the authors of the book under review A. Anjaneyulu was a well-known researcher on tungro virus disease in rice. The first author completed research work for Ph D under the senior's guidance. Later Satapathy completed a research assignment on tungro at the International Rice Research Institute, Philippines. The two authors had teamed earlier with Shukla to write a book on rice tungro.

The present book is a monotonous repetition with marginal additions from Satapathy's work. Numerous technical mistakes abound in this book. Contradictory statements appear on every possible issue.

On p. 1, for example, 'Worldwide rice is harvested on 148 million hectares representing more than 10 per cent of the earth's arable land. Total annual production is about 520 million tons of unmilled rough rice'. On p. 69: 'It is now harvested from more than 150 million hectares representing more than 10 per cent of the world's arable land. Total annual production is about 420 million tons of unhusked rice yielding about 275 million tons of milled grain'.

It is important to know in epidemiology as to what really serve as sources for the onset of outbreaks. Consider statements such as this: 'The weeds might be acting as alternate hosts and reservoir for the viruses in the rice fields' (p. 57). 'There is not a single weed species which is known to act as an alternate host...' (p. 79). Innumerable contradictions such as this confuse issues.

The language and spelling errors encountered in every paragraph irritate and prevent a comprehension on what is said. As this reviewer was a colleague of Anjaneyulu at the Central Rice Research Institute (CRRI), Cuttack, it is apparent that the late Anjaneyulu, in all likelihood, did not read this text.

The book contains imaginary statements without any factual evidence tilldate, that tungro causes 'near to famine condition' (p. 2) and that the 1942 great Bengal famine was caused by tungro and not by *Helminthosporium* (p. 80). It is also interesting to note the declaration by the authors that tungro was first detected in 1968 (p. 80), and was 'unknown in 1950s' before introduction of TN 1 and IR 8 into the country (p. 4), and first reported from West Bengal (1967). The authors are apparently not aware of the outstanding contribution made by S. Y. Padmanabhan, former Director, CRRI in understanding the great Bengal famine in 1943, who had meticulously presented all the evidence on *Helminthosporium*

disease epidemic in the *Annual Review of Phytopathology* (1973, **11**, 11–26). The authors have not even cited this work by Padmanabhan under references.

Plate 2 and plate 1 mentioned in that order, on p. 13, and plate 3 mentioned in p. 15 are not included in the print. The figures with incomplete descriptions do not help in understanding tungro. Only the figures and tables from more than a decade-old thesis work are given. Chapters have no clear titles nor do they contain any information that is not repeated several times.

'The disease progress is described by the logistic model (Madden *et al.*, 1990)'. Madden never studied tungro and this reference, on general nonlinear models, including the logistic model, is not cited under reference.

K. MURALIDHARAN

Department of Plant Pathology,
Directorate of Rice Research,
Hyderabad 500 030, India
e-mail: muralidharan_km@yahoo.com

PERSONAL NEWS

Victor Frederik Weisskopf (1908–2002)

Victor Frederik Weisskopf, the well-known theoretical physicist, died on 21 April 2002, aged 93 years, at Newton, Massachusetts, USA. In his passing away, the world of physics has lost one who enriched quantum physics, nuclear physics and elementary particle physics by his contributions for over six decades.

Weisskopf was born in Vienna, Austria on 19 September 1908. He received his Ph D from the University of Gottingen, Germany and subsequently worked at the University of Berlin with Erwin Schrödinger. Later, he was associated with Niels Bohr at the University of Copenhagen. During his long and productive career in theoretical physics, Weisskopf had worked, amongst others, with Max Born, Wolfgang Pauli and Albert Einstein. He chose to emigrate to USA in 1937 during the Nazi regime in Germany. On an invitation from J. Robert Oppenheimer, Weisskopf joined the Manhattan Project at Los Alamos, New Mexico during the Second World War to develop atomic weapons. He was one of the group members who witnessed the Trinity Test, the first test of an atomic bomb. Box 1 provides his eyewitness account of the blast.

Box 1. Weisskopf as an eyewitness to the Trinity Test

On 16 July 1945, at 5:29:45 am, the first atomic bomb was detonated at Trinity Site in New Mexico, USA. Weisskopf was at the base camp and watched the event from a little ridge through a dark glass and he had an indirect view of the landscape in order to see the deflected light.

In the words of Weisskopf, 'When the explosion went off, I was first dazzled by this indirect light which was much stronger than I anticipated, and I was not able to concentrate upon the view through the dark glass and missed, therefore, the first stages of the explosion. When I was able to look through the dark glass I saw flames and smoke of an estimated diameter of 1000 yards, which was slowly decreasing in brightness, seemingly due to more smoke development. At the same time it rose slightly above the surface. After about three seconds its intensity was so low, I could remove the dark glass and look at it directly. Then I saw a reddish glowing smoke ball rising with a thick stem of dark-brown colour. This smoke ball was surrounded by a blue glow, which clearly indicated a strong radioactivity and was certainly due to the gamma rays emitted by the cloud into the surrounding air. At that moment the cloud had about 1000 billions of curies of radioactivity whose radiation must have produced the blue glow.

'The first two or three seconds, I felt very strongly the heat radiation all over the exposed parts of my body. The part of my retina, which was exposed to the indirect light from the surrounding mountains, was completely blinded and I could feel traces of the after-image, 30 min after the shock'.

'The reddish cloud darkened after about 10 or 20 s and rose rather rapidly, leaving behind a thick stem of dark-brown smoke. After this, I remember having seen a white hemisphere rising above the clouds in continuation of the breakthrough of the explosion cloud through the ordinary cloud level'.

'The path of the shock wave through the clouds was plainly visible as an expanding circle all over the sky, where it was covered by clouds'.

'After about 45 s, the sound wave arrived and it struck me as being much weaker than anticipated'.

One is reminded of the statement of Oppenheimer that the explosion was brighter than a thousand suns.

Credit source: US National Archives, Record Group 227, OSRD-S1 Committee, Box 82 folder 6, Trinity.
http: //www.nuclearfiles.org/docs/1945/450716-weisskopf.html.