

## Book Reviews

*Red and Lateritic Soils of the World, vol. 1 + 2*, edited by J. Sehgal, W.E. Blum and K.S. Gajbhiye. A.A. Balkema, Rotterdam, The Netherlands, 1998. Hardcover, 453 pp. (vol. 1), 113 pp. (vol. 2). ISBN 90-5410-2741-3 \* set (Dfl 225).

After Hans Jenny retired, he and his wife wandered through art galleries in the USA and abroad. Being a ‘sabbatical pedologist’ as he put it, Jenny was fascinated by landscape painters, in particular the French painter Paul Gauguin. In 1887, Gauguin spent a few months in Panama and Martinique painting landscapes.

*Parau Parau II, by Paul Gauguin (1849-1903). Yale University Art Gallery.*

When he returned to Paris, his friends noticed a change of colours in his paintings, as they had become more intense and brilliant. It was attributed to the colour-rich tropics that none of the European commentators had ever seen. The change in chroma and hue became emphasized in Gauguin's famous paintings from Tahiti. Some of his pictures caused trepidation, not only because of the semi-naked women, but also because of the unusual soil colours—they were bright red! Ever since Gauguin, red soils have taken their place in the landscape art but it took quite some time before they received fascination and research attention in soil science.

These two books published some 100 years after Gauguin's paintings of red soils, deal with red and lateritic soils and their management. They originate from a seminar organized by the *Indian Society of Soil Survey and Land Use Planning* and the *International Society of Soil Science* held in Bangalore in September 1993. The information is presented in two volumes: 'Managing Red and Lateritic Soil for Sustainable Agriculture' (vol. 1) and 'Red and Lateritic Soils of the World' (vol. 2). It is somewhat ambiguous why the work has been bound in two volumes considering the subject distinction is rather fabricated and a single volume would have yielded a fat though reasonably sized book (556 pp.).

Volume 1 consists of 38 chapters of which 23 focus on research conducted in India. The chapters are loosely grouped into seven sections: Setting the scene, Soil and climatic resource base, Land evaluation for land use planning, Soil-site suitability evaluation for different crops, Soil degradation and sustainability, Resource management, and Future challenges and strategies. The first chapter contains a definition of what the editors consider red, laterite and lateritic soils. This is pleasing as zonal soil terms mean different things to different people and are somewhat obsolete in the FAO–Unesco and Soil Taxonomy classification systems. Red, laterite and lateritic soils are defined as having a hue of 5YR or redder in the subsoil. Laterite soils have plinthite or ironstone in the subsoil and are considered to have lower CECs, base saturations and soil reactions than red soils. Lateritic soils do not necessarily have laterite in the subsoil but have oxic or kandic horizons. The red and lateritic soils are mostly classified as Oxisols, Ultisols, Alfisols, Inceptisols, Entisols, and Mollisols depending upon the presence or absence of oxic, argillic or mollic horizons, the CEC and the base saturation. Well, that means that red and lateritic soils do occur in all important soil orders in the tropics, and they cover an estimated area of  $4.5 \times 10^9$  ha. General guidelines for evaluating the potential of the red soils are given in addition to more specific suitability evaluations for a range of agricultural crops. The agronomic problems with the red and laterite soils are fairly well documented (low fertility, high erodibility, etc.) and various chapters discuss how the soils should be managed in a manner that is productive and acceptable to farmers supported with many examples from India.

Volume 2 consists of 11 chapters in which the distribution, land-use and management of red and lateritic soils of India, Sri Lanka, Bangladesh, Nepal, The Philippines, Vietnam, Kenya, Argentina and Bulgaria are described. There is some overlap with information on the Indian soils presented in volume 1, but the soil information on the other countries is stimulating reading. The international soil classification schemes (FAO–Unesco, Soil Taxonomy) are used in most chapters in addition to national schemes. Apart from a chapter on Argentinean soils and some information in volume 1 in a chapter by A. van Wambeke, there is limited information on red soils in South America where they are of great importance and their management and constraints have been well-researched.

These two volumes bring together useful information on important soils in the tropics but there are some errors and shortcomings which obligate mentioning. In vol. 1, it is stated that Fe toxicity is a serious problem affecting plant growth in red soils. Iron toxicity rarely occurs, however, in upland soils. It is a problem in acid–sulphate soils and in flooded rice soils where excessive iron uptake may cause iron toxicity, so-called ‘bronzing’ resulting from oxidized polyphenols. Some chapters also mention that goethite is a mineral with a red colour. Although several chapters touch upon it, there is no in-depth review of genesis and common pedofeatures of the red soils nor a thorough synthesis of how they should be managed in order to sustain agricultural production. Some of the information is dated and the books are not indexed, contain some unreadable line drawings (e.g., pp. 96, 126, 316 in vol. 1; pp. 761, 75 vol. 2) and numerous misspellings. In conclusion, both volumes should have benefited from slightly more rigorous editing in which a slash-and-burn red pencil was combined with flawless checking. In my opinion, the books are not as significant to the literature of red soils as are the red soils to agriculture in the tropics. They are also a bit expensive. For less, one could buy a beautiful book of Gauguin.

ALFRED E. HARTEMINK  
Amsterdam, The Netherlands

PII: S0016-7061(98)00094-9

*Replenishing Soil Fertility in Africa*, edited by R.J. Buresh, P.A. Sanchez and F. Calhoun. SSSA-ASA Special Publication 51, Madison, WI, USA, 1997. Softcover, 251 pp., US\$22.00. ISBN 0-89118-829-0.

Readers of the international journal of soil science *Geoderma* probably also follow the world news and may thus have noticed an increased political interest of the USA in Africa. I am not qualified to comment on the political motives but it is pleasing to notice that it is accompanied by scientific interest in one of the