

***Sedimentary Petrology* (3rd ed.), by M.E. Tucker, 2001. Blackwell Science, Osney Mead, Oxford OX2 0EL, UK; 262 pages, softcover; £ 28.50, USD 59.95; ISBN 0-632-05735-1.**

It seems to have become a tradition: every ten years a new edition is published of this famous book by Maurice Tucker. Famous, indeed, although the publisher's statement at the backside cover that "it is the standard text on the subject in most British universities and many others throughout the world" may be a bit exaggerated. Nobody will deny that the book is one of the best in its field, but even this third edition still has shortcomings, in spite of the adaptations in the text and the addition of 16 full-color pages with photomicrographs of 74 thin sections.

The book is aimed primarily at undergraduate students. This requires a text at a fairly basic level, and Tucker manages well in this respect with many general handbooks referred to in the text. This makes it even more astonishing that some aspects are dealt with in great detail. Perhaps Tucker's own riding horses? It should also be stressed, however, that Tucker has put a great effort in reading, and referring to, fairly recent literature. It is therefore unfortunate that the readers cannot always profit maximally from these efforts; as an example (p. 197), what is the sense of a reference in the text like "see papers in Glenn et al. 2000" if this is a large overview work?

It is difficult to understand how Tucker decided to divide the space available in the book between the various subjects. The chapter on sandstones, conglomerates and breccias is 82 pages, but the much more frequently occurring (and more problematic, from a sedimentary-petrology point of view) mudrocks have only 18 pages. Part of this unbalance is due to the fact that Tucker did not really manage to adhere to the topic: the very long chapter on sandstones, conglomerates and breccias contains data and photographs (fig. 2.16) of silt- and claystone, and a long part of this chapter is devoted to sedimentary structures, and another part to sedimentary environments.

Does the topic of sedimentary structures really deserve 20 pages (almost 10%!) of an entire book - at a fairly elementary level - on sedimentary petrology? I do not think so, particularly considering the omissions, mistakes and incorrect data presented in this section. Why, for instance, a statement that "sedimentary structures are the *larger-scale* features of sedimentary rocks (p. 21) [my italics, AJvL], and why deal with load casts under the heading of 'slides and slumps' (p. 35)? And why devote so much less attention (about one page) to a topic that is of so much more importance for sedimentary petrology, i.e. heavy minerals (p. 46-47)? And why state that heavy minerals have a specific gravity of 2.9, if values between 2.89 and 2.96 are commonly applied; why state that separation takes place with acetylene tetrabromoethane if so many other liquids are used; and why state that these "accessory grains are present in concentrations of less than 1%" if so many recent and fossil beach deposits are being exploited for their content of specific elements occurring in heavy minerals that are present in much higher concentrations?

It seems that Tucker, also in this new edition, has problems in finding a balance between elementary information and geological practice. It is, obviously, true that many eolian sands are "mature to supermature" (not defined!), but many eolian deposits (such as the small river dunes formed along proglacial rivers) underwent insufficient eolian transport to become that mature. There is, in this context, a fairly unfortunate lack of attention paid to 'inherited' petrological characteristics. The influence of reworking is hardly mentioned at all.

The above criticism might give the impression that Tucker's book is not very useful. Such an impression would be incorrect, because the book contains much information that can

help undergraduate students. But neither Tucker nor the publisher should close his eyes to the too many shortcomings that might easily have been avoided by having the manuscript for the new edition read more critically. In addition, a more careful indexing is needed; the index hardly helps to find the topics looked for, but this is - as mentioned before - also due to the fact that the structure of the book - and particularly the chapter on sandstones, conglomerates and breccias, is still immature. It makes it doubtful, in my opinion, whether this new edition deserves to become the true successor of the two earlier editions that "have been used by successive generations of students for more than 20 years", as stated by the publisher. Revision of a textbook requires more than some colour plates, some words devoted to the 'new' item of sequence stratigraphy, and more recent references.

A.J. (Tom) van Loon
Geocom
P.O. Box 336
6862 WC Oosterbeek
The Netherlands