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 Book reviews
 

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**Bhojwani, S.S.; Razdan, M.K.: Plant Tissue Culture: Theory and Practice. Developments in Crop Science (5).** Amsterdam, Oxford, New York, Tokyo: Elsevier 1983. vii + 502 pp., several tabs. and figs.

This handbook gives the most complete recent review of new and old techniques and developments in plant cell and tissue culture. The listings of species and media for cell culture, somatic embryogenesis, haploid and triploid production, protoplast culture, somatic hybridisation and clonal propagation are complete, up to date and will therefore save scientists working in the field a lot of time. Most listings are revised up to 1983. The chapter on laboratory requirements, however, is incomplete and therefore not very useful, especially the paragraph on the culture room, reviews only some of the recent technical improvements. The physical growth factors (temperature, light intensity, light quality) are poorly described. In the book, only a few light intensities are given and they are expressed in lux, which is difficult to interpret for the various types of growth rooms. In contrast, the chapter on media gives excellent comparisons between the salt compositions, also in mmol, which is often omitted in practical tissue culture. The more theoretical chapters on cellular totipotency and cytogenetics discuss the recent developments well in the background of older hypotheses. Most tissue culture work is done on horticultural crops which makes it understandable that the authors pay most attention to these species. However, since 1975, substantial progress has been made in testing the possibilities of the application of micropropagation to woody species. It is a pity that these species are almost completely omitted in this book. It can be stated that "Plant tissue culture: theory and practice" is the most complete reference book on the subject that has been published in the last years. It is a helpful tool, especially when starting with a new species. The authors have succeeded in combining theory and practice in a balanced manner but have failed to include the woody species in the discussions.

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**Bewley, J.D.; Black, M.: Physiology and Biochemistry of Seeds in Relation to Germination, Vol. 2. Viability, Dormancy and Environmental Control.** Berlin, Heidelberg, New York: Springer 1982. 375 pp., 153 figs. Hard bound DM 128,-.

The first volume of "Physiology and Biochemistry of Seeds" was published in 1978 and dealt with anatomy, maturation, germination and mobilization of reserves. According to references made by the authors themselves, they had planned the second volume in 1979. Apparently, the task was more difficult than expected and the book appeared only in 1982.

The second volume deals with such distinct topics as viability (59 p), dormancy (216 p) and environmental control (64 p). It is not easy to judge the present or the preceding volume. Together they cover the most important areas of seed biology. Written with enthusiasm and in many places with great expertise, the books offer a great deal of primary data. However, several critical remarks should be made. At a cursory glance, the greatest advantage seemed to be that all of seed biology was treated by the same two authors. However, Bewley and Black were unable to integrate the various subjects. In fact, the books are more or less a collection of review articles. Understandably, when such a broad area is covered – volume 2 gives more than 1,000 entries – it is inevitable that the authors will misinterpret some articles. Indeed, Bewley and Black ascribe to one article exactly the opposite finding (Cuming and Osborne's article, quoted on p 204) which makes the reviewer suspicious about the other literature cited by them. Bewley and Black have many times treated the literature rather critically, for example, their discussion of hormones and dormancy. However, sometimes they have been rather casual, for example, when dealing with measurements of the levels of protein synthesis in germinating seeds, they ignore the well-known possibility of differential dilution of applied labelled precursors by the endogenous pool. Their treatment of terminological problems is commendable, e.g. those concerning primary and secondary dormancy. However, their definition of the term germination as all events between initial imbibition and the onset of growth, is confusing. The reviewer fails to understand why they should have treated in Vol. 1 such a distinct post-germination event as the mobilization of reserves extensively in a book which is specifically on germination alone.

Nonetheless, *Physiology and Biochemistry of Seeds, Vol. 2* is quite a good and stimulating book and should be read by all workers in seed biology.

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