
Biotechnology Applications and Careers. Meenakshi Munshi and S. P. Sopory. Viva Books Pvt. Ltd., New Delhi. 2003. 174 pp. Price: Rs 175.

Biotechnology has created a revolution affecting man world over in every walk of life. With the discovery of the structure of DNA in 1953, the immense potential that lies in biotechnology has become evident. Today, scientists from every branch of science are looking at biological models to solve their problems. Industries are keenly watching the developments and are eager to adopt biotechnology. Some of the sick industries have abandoned their ongoing programmes and adopted biotechnology which has helped them not only survive but prosper. Biotechnology has brought new hope for remediation and conservation of environment. In the field of medicine, be it drug designing, drug delivery, replacing damaged tissues or gene therapy, biotechnology is in the forefront. Scores of papers are being published every week demonstrating living organisms from land and aquatic environments as rich sources of pharmaceuticals and other chemicals of interest. With this kind of potential, there is no wonder then that biotechnology is of much interest and is attracting both young minds as well as full-fledged scientists alike to adopt this field. But at the rate at which developments are taking place, the discoveries being made and the new molecular and other technologies being developed; the new terminologies that have come into vogue have made it very confusing not only for the layman but also for scientists and students of biology.

This book attempts to explain in simple terms the developments that have taken place in different branches of biotechnology. This is indeed a very welcome effort. In describing the diverse areas of biotechnology, the authors have successfully introduced a plethora of terminologies that have come into existence concomitant to developments in biotechnology.

Starting with a chapter on the history of biotechnology, the book is organized into eleven chapters out of which the first nine are devoted to introducing different areas of biotechnology such as plant biotechnology, animal biotechnology, medical biotechnology, industrial biotechnology, environmental biotechno-

logy, aquaculture and marine biotechnology and bioinformatics. The very first chapter explains what biotechnology is and its scope. The second chapter traces the history of biotechnology enlisting the major events and discoveries that have contributed to its development. In the third chapter, with a brief description of methods of producing transgenic plants, the applications in improving agriculture, productivity of plants, introducing resistance to plants against insects, viruses, nematodes and herbicides; and vaccine production in plants are explained. The fourth chapter is devoted to methods of producing transgenic animals and importance of biotechnology in animal breeding. The fifth chapter brings out the advances made in medical biotechnology including biopharmaceuticals, pharmacogenomics and stem cell research. The human genome project is one more topic that has aroused a lot of curiosity. It would have been nice if the authors had introduced this topic explaining how it was started and completed, as well as persons and institutions that contributed and the outcome of this great effort.

The sixth chapter is interesting and gives information about biotech industries. The seventh chapter deals with the various advances that have been made in the remediation and conservation of environment using biotechnology. The eighth chapter is significant in that information about marine biotechnology and aquaculture about which information is not as readily available as on the other branches, is provided. The ninth chapter deals with the most sought-after branch of biotechnology, namely bioinformatics. In the 10th chapter, various institutions where biotechnology could be pursued and the fellowships available are brought out. The most frequently asked question by high school and undergraduate students who wish to study biotechnology, as well as postgraduate students studying biotechnology and parents is 'What are the job opportunities after graduating in biotechnology!' The authors have addressed this question and listed out various job opportunities that are open to students who have qualification in biotechnology. In addition, authors have very thoughtfully provided the names and addresses of biotech industries in India and have also introduced eminent personalities in India who have contributed to the growth of biotechnology in India. The references and the website provided at the end help

in gathering further information on topics dealt with in the book.

The book is well written and makes interesting reading. The book is a must for anyone confused about all the news biotechnology is making. It is a very good guide for young aspirants who wish to make their career in this frontier area of science.

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Dawkins vs Gould: Survival of the Fittest. Kim Sterelny. Icon Books Ltd, Grange Road, Duxford, Cambridge CB2 4QF, UK. 2001. 160 pp. Price: UK£ 5.99.

One of the persistent debates in evolution is on the role of random vs deterministic forces. The debate that began on the importance of random events such as genetic drift between Wright and Fisher, has been continued in the recent years by two eloquent and prolific authors, Richard Dawkins and Stephen Jay Gould. Through his many popular books and essays, Gould has constantly emphasized the importance of chance and contingency in both micro- and macroevolution. Dawkins embraces a more deterministic view and has written extensively about the power and beauty of natural selection. The book under review is a brisk introduction to Gould's position on evolution and Dawkins' view on the subject. The author tries to expose the differences between the views of these two scientists. He sees both the scientists offering competitive theories on evolutionary biology and tries to draw a precise outline of the logic of the debate.

Gould spent most of his career supplementing Darwin's theory of natural selection with other evolutionary mechanisms. Dawkins has sought to establish natural selection at the level of the genes. Gould had a taste for the complexity of large systems; Dawkins prefers cutting a phenomenon down to its simplest component. According to Gould, while natural selection explains much evolutionary change