

Atlas of Hematopathology: Morphology, Immunophenotype, Cytogenetics, and Molecular Approaches, 2nd Edition. Faramarz Naeim, P. Nagesh Rao, Sophie X. Song and Ryan T. Phan. Academic Press, An Imprint of Elsevier, 125 London Wall, London EC2Y 5AS, UK. 2018. xiii + 972 pages. Price: US\$ 250.

The textbook under review comprises 66 chapters. The first six chapters discuss normal hematopoiesis, principles of various advanced disciplines in the field of pathology and an overview of abnormal bone marrow morphology and reactive lymphadenopathies. These introductory chapters are well written and make the understanding of subsequent pathologies easy.

It is surprising to note the use of ‘rubriblasts and rubricytes’ in the context of erythropoiesis. The authors have updated the first edition of the book to include the 2017 WHO classification of hematopoietic and lymphoid neoplasms. Therefore, the use of these archaic terminologies seems misplaced.

The remaining 60 chapters cover various neoplastic and non-neoplastic conditions in hematopathology starting with bone marrow aplasia. Myeloid disorders (including myeloproliferative neoplasms, myelodysplastic syndromes and acute myeloid leukemias) are covered between chapter 8 and chapter 23. Lymphoblastic neoplasms are examined in chapters 24 and 25 whereas chapter 26 is on leukemias of ambiguous lineage. Mature B-cell neoplasms are covered in chapters 27–42. Chapter 43 covers plasma cell neoplasms. Mature T and NK-cell neoplasms are covered in chapters 44–54. Chapters 55–57 focus on Hodgkin lymphoma. The final chapters take a look at miscellaneous conditions like immunodeficiency disorders, histiocytic disorders,

anemias and changes seen post therapy. The sequence of the chapters dealing with neoplastic pathology is very similar to the WHO blue book.

The text of *Atlas of Hematopathology* is easy to read with the salient features of each disorder being divided into morphology, immunophenotype, molecular/cytogenetic studies and differential diagnosis. The text is accompanied by plenty of images of microscopy, immunophenotyping, FISH and karyotyping.

The major drawback is the quality of the photomicrographs. The lymph node pathologies in particular have poor low power images.

Although the newer molecular technologies have been adequately addressed, given that this book is meant to be an atlas, minimal residual disease evaluation by flow cytometry gets a only small mention right at the end of the book.

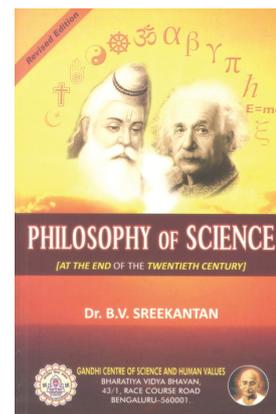
In several places, there is a rather casual use of terms like ‘mostly’ and ‘awesome’, perhaps in an effort to make complex chapters on molecular assays look simple.

Medical students, postgraduates in hematology, oncology and pathology and practising physicians will find this book quite useful as a concise but informative reference for hematology disorder. Even those who primarily practice hematopathology may use *Atlas of Hematopathology* as a quick reference for cases. The readers though would be justified if they are not impressed with the images in the book.

Though its size and price may not make it suitable for individual buyers, *Atlas of Hematopathology* may be of value in a medical library, especially for medical students, postgraduates and anyone looking for quick guidance on a hematology disorders.

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Philosophy of Science (At the end of the twentieth century), Revised Edition. B. V. Sreekantan. Bhavan’s Gandhi Centre of Science and Human Values, Bharatiya Vidya Bhavan, No. 43/1, Race Course Road, Bengaluru 560 001. 2016. x + 106 pages. Price: Rs 120.

Philosophy of science (henceforth PoS) is primarily a sub-discipline of philosophy that has science as its subject of interest. Being interdisciplinary in nature, there are some specific challenges involved while engaging with PoS. For instance, given that enquiries in PoS draw from two different disciplines, it becomes difficult to identify where science ends and philosophy begins. Moreover, in the backdrop of the historical tension between the two disciplines and the present privilege of science as the dominant discipline of knowledge, the relevance of philosophy for science is not straightforwardly granted and the onus is laid on PoS to prove its usefulness. To this list, we can also add the locale-specific problems pertaining to humanities and science education in India.

It is in this broad context of practicing PoS that we should situate the book by B. V. Sreekantan. This book is of interest for two reasons. By presenting the synergy between philosophy and science at the introductory level, the book becomes accessible to the general public. This is a positive contribution to a crucial void given that there are not many books of this kind. Apart from this pedagogic value, the book is also important owing to the author’s unique internalist position in the discourse of PoS. The externalist versus internalist’s perspectives are well recognized in the allied disciplines like history and sociology of science. Similar to these, there is considerable difference

in the way scientists and philosophers engage with PoS. Recognizing this distinction is especially important in the Indian context since PoS has been an activity largely practised by philosophers alone. Given the lack of engagement with it from the science community, this book from an eminent scientist not only sets the much needed precedence but also brings a perspective that is absent in the ongoing dialogue about PoS in India.

The book consists of seven chapters, each of which pertains to either philosophy or science of a specific era, and these are arranged in a historical order. The first chapter begins with a brief introduction about the philosophical thoughts in the ancient Indian and Greek civilizations and later provides an overview of few important European philosophers from the pre-modern period. The second chapter reiterates the often found historical account of the rise of the pre-modern science by narrating the contributions of Copernicus, Galileo, Newton and others up until the end of the nineteenth century. This chapter sets the context for discussing the nature of science in the twentieth century. The third chapter focuses on the well-known developments in modern physics and the fourth chapter mentions the key milestones in modern life sciences.

In the fifth chapter, the author continues the discussion on philosophy and summarizes the contributions by the prominent European philosophers in the last three centuries. The remaining part of the chapter deals with a pertinent topic – the influence of modern science on philosophy. Here, through the views of Heisenberg and Pauli, the author suggests that the reality propounded by modern physics is an idealistic one that can be captured only through the language of mathematics. And by citing the views of Schrödinger, Wheeler and others, the monistic notion of reality, which denies the dualisms like mind-matter and observer-world, is argued for. Even though the topic considered in this part is of significance, there are issues with the way the author engages with it. The discussion largely comprises quotes from various scientists and with no further substantiation from the author, the coherence of the arguments is lost. Thus, it remains unclear in what sense modern science affected philosophy.

The sixth chapter dwells on the views of Indian philosophical schools. The

presence of this summary is in itself a salient aspect of the book since the usual works on philosophy of science presume that only western philosophy is relevant for the study of science and neglects philosophies developed in other regions. In the seventh chapter, even though the author states that the aim is to analyse how science and philosophy have responded differently to certain questions, the discussion found here does not directly deal with this topic. The author starts with the modern cosmological account about the origin of the universe and states how all the known physical entities – space, time, matter, force – arose from the big bang. In this cosmological process, consciousness is interpreted as an emergent property. Through this presentation, the notion of ‘oneness’ is again emphasized. And, this proposal of single unified reality is further motivated by portraying how various scientists and philosophical traditions have vouched for this view. The revised edition of the book (in 2016) consists of an appendix, where the author reiterates the same argument about consciousness by supplementing it with some details from modern neuroscience. The larger arguments found in these concluding chapters have similar problems as mentioned above. For instance, it is claimed that varied proposals – Śankara’s interpretation of brahman and ātman, Buddhist notion of śūnyatā, Tao’s yin and yang, Einstein’s field theory, Dirac’s theory of quantum mechanical vacuum, Heisenberg’s proposal based on Plato’s idealist philosophy – are essentially the same. As historians and philosophers would caution, even though some interesting parallels can be drawn between the views that belong to different conceptual frameworks, it would be inappropriate to claim that all these propose the same notion of reality.

With a brief overview of the book provided, it is pertinent to ask what kind of relation between science and philosophy is presented in this work. Since the author has not directly articulated this point, the book’s discussion can be closely looked into to bring forth his presumption. In the concluding chapter, he begins by stating ‘we will focus our attention on some of the quintessential questions of philosophy and examine to what extent the developments of science in the last four hundred years have provided satisfactory answers to these questions. We will also consider to what

extent the various streams of philosophical thoughts ... are relevant and meaningful and whether they supplement or complement the scientific explanations or entirely contradict them’. As this statement suggests, the author seems to consider philosophy and science to be different disciplines of knowledge, the only overlap between them being the similar set of questions which they engage with in their unique way. This characterization of the relation between the two disciplines is highlighted in several other places in the book.

Therefore, the book attempts to introduce two disciplines – philosophy and science – and as the above review recounts, it succeeds in doing this. However, this strength of the book is also its weakest aspect because it does not engage with what it conveys to do: philosophy of science. The modern PoS is a rich discipline that has contributed immensely to the understanding of science. The fundamental queries pertaining to science – the demarcation problem of science, the structure of scientific theories, the integral link between theory and observation, the relevance of mathematics for science, the nature of scientific reality, etc. – are dealt rigorously in PoS. None of these gets mentioned in the book that bears the title ‘philosophy of science’.

One way to make sense of how the book characterizes the relation between philosophy and science, and what it overlooks, is by acknowledging the internalist’s perspective of the author. Nevertheless, this lapse is not an issue specific to this book. This is rather a symptom of a larger problem where philosophy is largely neglected and misunderstood in India. For instance, unlike other countries, there is not even a single history and philosophy of science department in India. In this scenario, the book, in spite of some oversight, exhibits the much required support for PoS by engaging with it. Thus, by introducing philosophy and science concurrently and highlighting their overlap, the book provides a unique route for the young and general audience to understand and appreciate both these disciplines.

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