The Neuroscience of Tinnitus - Jos J. Eggermont.
Oxford University Press 2012.

The Neuroscience of Tinnitus is a single-author book which covers neuroscientific mechanisms underlying tinnitus. Jos Eggermont is one of the most renowned scientists in the field of the auditory system and his work has contributed substantially to the current knowledge about the neural correlates of tinnitus.

After an introduction containing a definition of tinnitus and some essential information about its epidemiology and etiology, psychoacoustic and psychological aspects of tinnitus are described. This is followed by a scientifically sound summary of the most important results of human subject research which examines the correlates of tinnitus using neuroimaging and electro-/magnetoencephalography. A large part of the book is then devoted to a critical review of different behavioral animal models for tinnitus and the advances that have been made in studying them. Additionally, recent findings are presented which support the idea of tinnitus being a network disorder. After explaining the relation between tinnitus and aging, the book concludes with a chapter on tinnitus management and an outlook on future research.

All in all, The Neuroscience of Tinnitus provides a comprehensible, detailed and very up-to-date overview over the most important models and findings concerning the mechanisms underlying tinnitus. What is truly remarkable about the book is that – although it is a single-author book - it includes thorough information about animal studies and human research. Having a scientific background in both, Jos Eggermont is perfectly qualified to address and critically review the results coming from both areas – and he succeeds in doing so. Besides the necessity of animal research for developing an in-depth understanding of the neural substrate of tinnitus, the book does not neglect the shortcomings of and inconsistencies between the different animal models. It becomes clear that the changes within the auditory system which are induced by salicylate or noise (“bottom up mechanisms”) and which are object of investigation in animal models might only be one part of the process which finally leads to a chronic manifestation of tinnitus. Top-down mechanisms which involve synchronous activity within widespread brain networks constitute the second important part – a part which is mostly known from human research. Animal and human research sometimes seem to coexist without interacting or benefitting from each other. The book is a very important step in the direction of integrating the knowledge from both and might be inspiring for any scientist who is doing research on tinnitus.

Therefore, the book is a must read for anyone who is engaged in the neuroscience of tinnitus and who believes that she/he actually has a lack of knowledge concerning the findings of animal/human research respectively. Furthermore, the book provides an excellent overview for anyone who is new to the topic. In addition to scientists, clinicians who have to treat the tinnitus patient will also benefit from the profound knowledge the book imparts.

Astrid Lehner
University of Regensburg