

reviews

Robert E. Kohler. Landscapes and Labscapes. Exploring the Lab-Field Border in Biology. (Chicago/London: The University of Chicago Press, 2002). xvi+326 p.

*By Jesús Catalá-Gorgues**

During the last fifteen years, research on place-located practices has emerged as one of the most fruitful approaches in historical and social studies of science. The present book falls into this category by making specific places of scientific practice its focal point. In this sense, Kohler's book can be considered a good example of a cultural geographical approach to science. Kohler is a well known author by his celebrated *Lords of the Fly: Drosophila Genetics and the Experimental Life* (1994), also published by the University of Chicago Press, and by his remarkable career as an expert historian of biochemistry and related medical disciplines. Lately, however, he has moved to a different research area: rather than focussing on experimental disciplines, he has devoted himself to the history of field sciences. This book is the most outstanding result of his recent intellectual pursuits.

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Kohler offers a stimulating and penetrating narration on how the border zone located between the increasingly powerful realm of experimental biology and the unceasingly disturbed region of natural history was negotiated in the United States, between the last decade of 19th century and the 1950s. More specifically, he explored the border zone where new disciplines such as ecology and evolutionary biology germinated and grew for almost sixty years. At the turn of century, some laboratory-trained biologists felt that experimental developments in biology, in particular microscopic morphology which in those days attracted much attention, began failing the targets they were set to achieve. A problem laid in displacing laboratory techniques to the study of life as it presents itself in nature. Laboratory-based biological research entails the dislocation of objects out of their natural environments, that is, living beings are studied in undisturbed laboratory conditions as against unpredictable field ones. But these laboratory practices were found to have their own limitations. Although they facilitated the understanding of structural patterns, they failed to unveil functional processes as a whole. It was realised that the relations with other living beings and the environment, distinct behaviours, evolutionary pressures, etc., could only be properly studied and understood in the field. However, the traditional approach to field studies in the natural sciences was then poorly considered because not only were their methods seen as unscientific when compared with laboratory ones, but also their obsession with description and collection rather interpretation made them suspicious. Only by combining naturalists' field familiarity with the standards of

good scientific practice associated with laboratory-based research one would have a new scientific natural history, a thought which disenchanted biologists.

The idea of a new natural history was an ephemeral episode rather than an effective research programme, as Kohler points up, but it produced some effects in the second and third decades of the 20th century. It opened a process that attempted to incorporate laboratory techniques into fieldwork and some seminal theories in ecology were produced in this context. However, this kind of mixed scientific practice was doomed to failure because techniques which had been conceived for the laboratory usually failed or did not produce optimal results when applied in field conditions. Nevertheless, some authors were determined to walk along this path. For personal reasons and the sake of careers, or for matters of status of scientific disciplines, laboratory-based science represented the desiderata of many practitioners, because the association of field science with laboratory techniques had the potential of increasing personal and disciplinary recognition. Between the 1930s and the 1950s, the landscape began to change as naturalists increasingly oriented themselves towards the development of proper field techniques that could match laboratory standards. This process proved itself to be more fruitful as it produced deep-rooted theories and helped to consolidate ecology and evolutionary taxonomy as respectable scientific disciplines in all senses. Although it seems paradoxical, field biology attained success not because it imported laboratory techniques to the field, but because it revised and designed its own methods

and techniques according to standards that were acceptable by laboratory-based biologists.

Kohler describes the fascinating history of this complex process and its numerous main characters with brilliant prose and convincing arguments. He uses copious primary sources, especially letters, but also printed works and unpublished reports, as well as presenting a detailed and comprehensive secondary literature. One only misses some references to French historians of ecology in his contextualization. To some extent, Kohler's book is a traditional historical narrative based on the usual sources; but it is also an important contribution full of rich and suggestive metaphors, searching out an interpretative model for contested cultural territories in science. At the same time, it represents an example of interbreeding between historiographical territories along a border zone: on the one hand, traditional descriptive accounts, full of citations but barely interpretative; on the other, charming and persuasive exercises of imagination that are aimed to open new ways of historical work, with bold proposals often based on scarce critical apparatuses. Both dimensions are not mutually exclusive but indispensable to the development of history of science, which, I believe, is substantially enriched by that interbreeding terrain occupied by books such as Kohler's.