

## Comparative Chaos: Microscopic Comparative Anatomy and Physiology in the 1830s and 1840s.

What can legitimately be compared with what? This was a key question animating debates across Britain and Europe in the 1830s and 1840s, over the comparative anatomy and physiology of both animals and plants. While the Cuvier-Geoffroy debate of 1830 is the paradigmatic clash with respect to the legitimacy of large-scale taxonomic comparisons, it was by no means the only scene of biological inquiry in which comparisons were contested. As I show in this talk (which draws on work in progress for a book on the history of 19<sup>th</sup>-century ideas about biological individuality, parts, and wholes), microscopic anatomy and physiology in this period revealed many new biological entities and structures whose functions were mysterious. Comparison was a main means of bringing order to this chaos, but the rules of comparison—across taxonomic categories, between unicellular and multicellular organisms, and across physiological processes like generation—remained contested in practice, leaving uncertain methodological grounds on which scientists were to make sense of these new phenomena.