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## ► To cite this version:

Pauline Guenser, Bertrand Lefebvre. Historical, sampling and gender bias in palaeontological collections: Stylophora (Echinodermata) as a case study. 11th European Conference on Echinoderms, Bertrand Lefebvre; Thomas Saucède, Oct 2023, Villeurbanne, France. hal-04271133

**HAL Id: hal-04271133**

**<https://hal.science/hal-04271133>**

Submitted on 5 Nov 2023

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# ECE 11

Lyon, France

## ABSTRACT BOOK

11<sup>th</sup> European Conference on Echinoderms (ECE11)

October 16–20, 2023

Lyon, France

## Historical, sampling and gender bias in palaeontological collections: Stylophora (Echinodermata) as a case study

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The class Stylophora corresponds to a relatively small clade of extinct echinoderms (around 130 species and 70 genera) known from the middle Cambrian (Wuliuan) to the Late Carboniferous (Bashkirian). From their first descriptions in the 1850s (Billings, 1858; Hall, 1859) to the 1950s, stylophorans were almost exclusively described from Europe and North America.

We analysed an extensive data set that includes all stylophoran species, the publication year and the location of the holotypes, the nationality and the gender of the taxonomists who described them. Based on multivariate statistics analyses, we assessed two main biases. First, although stylophoran occurrences have been documented from all continents except Antarctica for the last 75 years, our knowledge of this class remains strongly biased historically. Indeed, about 75% of all described taxa are from only four countries (France, Czech Republic, USA, and UK). Moreover, prolific countries (e.g., Morocco) do not have holotypes registered in their public collections, although the material was discovered in their territory. Second, although female geologists sometimes contributed extensively to fieldwork and the discovery of new taxa (the most famous example being Mrs Elizabeth Gray, after whom *Cothurnocystis elizae* Bather, 1913 was named), only a single species was described by a female palaeontologist, "*Phyllocystis*" *salairica* by Yulia Dubatulova (*in Rozova et al.*, 1985).

We might explain this pattern with parachute palaeontology (or scientific colonialism). The impact of colonialism on biodiversity study in deep time has been recently approached in the literature (Monarrez *et al.*, 2022, Raja *et al.*, 2022, Chacon-Baca *et al.*, 2023). Women in paleontology is an older topic (e.g., Aldrich, 1982, Berta and Turner, 2020), even if gender parity has not been reached yet (Warnock *et al.*, 2020). We rely on these studies to propose perspectives in order to foster diversity and inclusion in the stylophorans research community such as: supporting women and local collaborators in fieldwork and the description of the material; keeping the material in its country of origin after primary study; maintaining strong scientific collaborations with foreign universities that hold the material to diversify author nationalities in publications and generate fundings.

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