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Taxonomic papers on Collembola in *Zootaxa*, 2001 to 2020

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We summarise here publications on Collembola in the journal *Zootaxa* over the years 2001 to 2020 and include numbers and nationalities of authors and referees. We also list numbers of new species and genera described. For a relatively small pool of taxonomists, we conclude their output has been considerable and *Zootaxa* has provided a useful vehicle in which to publish their research findings. Of interest, is the shift away from a Eurocentric origin of authors to a Chinese and Brazilian one. Reasons for this change are suggested.

The Class Collembola has received less taxonomic attention compared to other taxa of a similar size and rank. So far, 8,000 species have been described and approximately 730 genera but it has been estimated that this represents only a quarter of the total fauna. The group is currently divided into fewer than 30 families of which a third comprise few genera and species as they are only found in specialised habitats such as forest canopies, marine littoral sites, ants or termite nests etc. The group are almost ubiquitous; the only habitat they have not conquered is that of marine and fresh water although littoral habitats are colonised and also the surface of fresh, still water. Endemism is high as few taxa are highly vagile and, in Australia in some habitats, it is as high as 80%.

The number of specialists is low, despite the significance of the group in terms of distribution and taxon diversity. Bellinger *et al.* (2021) lists 240 names in his list of relevant taxonomists but the majority of them are no longer active and some are deceased. We suspect that, at most, a quarter (i.e. 60) are still publishing regularly, that is they are not students who after study almost invariably move into different areas of speciality. This paucity of specialists for the group may be because of the small size and cryptic habits of Collembola which makes studying them a challenge.

Ever since its outset, the journal *Zootaxa* has provided an invaluable vehicle in which to publish in both long and short manuscripts with descriptions of new taxa. From 2001 to 2020, 333 papers, including six monographs, have been published on Collembola indicating that a relatively few number of specialists are highly productive. Of the 333 papers, nearly eight percent [26 papers] are for open access. The number of authors involved has been deceptively high at 216 from 38 countries and the number of new taxa has also been high with 588 new species and 28 new genera. We have used 80 referees for these papers from 29 countries (Figure 1). In the first period of *Zootaxa*'s activity (2001–2006), manuscripts on Collembola were edited by a range of experts. From 2006 W.M Weiner started as Collembola Editor, and two years later, in 2008, also Greenslade.

Collembola taxonomy for the 19th and 20th centuries was dominated by European authors, particularly French and German, but also Italian and a few taxonomists were from the Iberian Peninsula and Poland. Authors from the Southern Hemisphere were practically absent. However, in recent years, probably for resource reasons, Asian and South American authors have come to the fore. For instance, of the 216 authors, most came from China, see Fig. 2 where the number of authors from 15 countries are graphed (11 countries with two authors and 12 with one author not shown).

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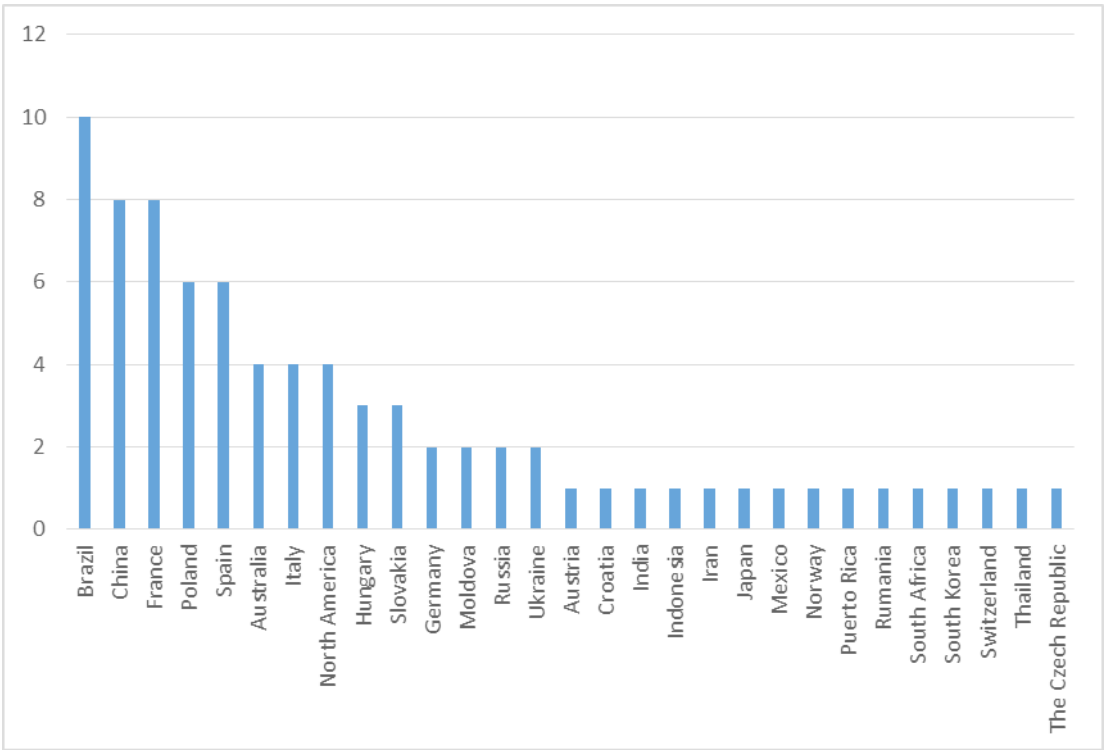

FIGURE 1. Histogram showing countries from which referees came.

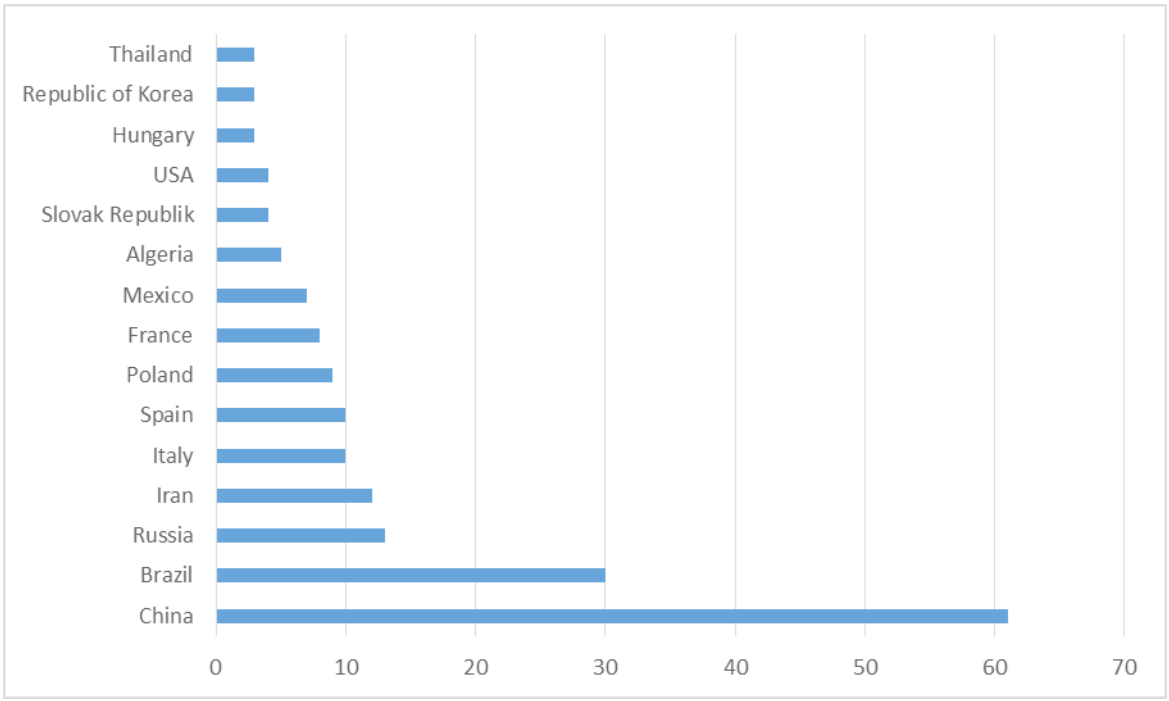

FIGURE 2. Histogram showing numbers of authors from fourteen most numerous countries.

Zootaxa has several advantages over other taxonomic journals. Firstly, no costs are incurred by authors, which is particularly helpful for students and retired or unemployed taxonomists. Secondly, it attempts to be a rapid vehicle for publication. Thirdly, and perhaps most importantly, it accepts morphological descriptions only without molecular phylogenies and trees based on morphological characters alone are welcome. Until 40 or so years ago, such journals as *Invertebrate Taxonomy, Austral Entomology* and other international journals specialising in systematics, accepted

morphologically based descriptions of new taxa. This policy has since changed and molecular data is now a requirement.

One disadvantage a specialised journal such as *Zootaxa* may suffer from is that papers tend to include more self-citations especially where there is a small group of taxonomists such as those as typical for Collembola (Zeppelini *et al.* 2020). Self-citations can be interpreted as a method of inflating Impact Factor scores, at least they are interpreted as that by inflexible computer programmes (Pinto *et al.* 2021). It has taken a considerable effort by numerous authors to request for a reverse of the decision to cancel the journal's listing in Journal Citation Reports in 2020.

Finally, we do not decry the value of molecular data and agree that the now named "integrated taxonomy" is the most desirable format as it provides additional insights into evolutionary history of taxa. In fact, 15 of collembolan papers included molecular data. Many authors, however, are not able to provide this type of data as molecular analysis requires specialised laboratories and trained technicians as well as scientists well versed in the computer programmes needed for analysis of the results. These resources are costly for many of us, especially students in developing countries, who do not have access to them let alone the funds to pay for them. This is where *Zootaxa* is particularly valuable as by allowing morphological descriptions alone, more rapid progress in the knowledge of faunas can be made.

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