CSIRO PUBLISHING

Environ. Chem. **2019**, *16*, 149
https://doi.org/10.1071/ENv16n1_FO_CO

Corrigendum

Foreword to the research front on 'Microplastics in Soils'

Moritz Bigalke and Montserrat Filella

(Vol. 16, no. 1, pp. 1–2)

The publisher wishes to draw the reader's attention to errors in the above paper.

In the following two paragraphs, the names of the authors should be as follows:

Knowledge about the transport of microplastics in soils is necessary to correctly assess their possible transfer to ground and surface waters as well as their impact in the soils themselves. Microplastics mostly enter soils from the surface, but little is known about their later distribution and fate. Yu et al. (2019) explore whether biogenic activities can be a pathway for microplastics to be transported in soils and into groundwater, and conclude that biogenic activities need to be considered in microplastic dynamics in soil systems.

The role of microplastics as vectors for organic micropollutants has been widely studied in aquatic systems, but much less so in soils. Rodríguez-Seijo et al. (2019) investigate whether earthworms (*Eisenia fetida*) could be carriers of pesticides in these media. Interestingly, they could not demonstrate that microplastics can be carriers of pesticides to earthworms, but found that these organisms avoided pesticide-contaminated microplastics.

RESEARCH FRONT

CSIRO PUBLISHING

Environ. Chem. **2019**, *16*, 1–2
https://doi.org/10.1071/ENv16n1_FO

Foreword

Foreword to the research front on 'Microplastics in Soils'

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The growth of plastics production since the mid-20th century has substantially outpaced any other manufactured material, with 8300 Mt having been produced from 1950 to 2015 (Geyer et al. 2017). The properties that make plastics so versatile – durability and resistance to degradation – also enable them to persist in the environment for very long periods of time. Around 60 % of all plastics ever produced have been discarded and are accumulating in landfills or in the natural environment (Geyer et al. 2017). The result is that contamination with plastic waste is a growing global concern. Plastic waste is now so ubiquitous in the environment that it has even been suggested as a geological indicator of the Anthropocene era (Zalasiewicz et al. 2016). Increasing attention has been paid to particles known to be of a few millimetres down to micrometres in size. Research into the environmental presence and impact of these 'microplastics' in marine and freshwater environments has accelerated in recent years, but little is known about their impact in land-based ecosystems (Andrady 2015). Soils, however, receive high loads of plastics from a wide variety of sources (Bläsing and Amelung 2018), and are not only important ecosystems but also form the basis for human food production, and, as a result, research on microplastics in soils is now a 'hot' rapidly developing field.

As is the case for other environmental compartments, no standardised method for the analysis of microplastics in soils exists, and consequently results from different research groups are not comparable. Pinto da Costa et al. (2019) overview the most recent data regarding the presence and prevalence of microplastics in this environmental compartment and evaluate their recognised impacts and potential consequences. They discuss the current sampling, isolation and identification methodologies and suggest methods that may contribute to the development of standard operating procedures for the sampling and characterisation of microplastics in complex matrices such as soils.

Knowledge about the transport of microplastics in soils is necessary to correctly assess their possible transfer to ground and surface waters as well as their impact in the soils themselves. Microplastics mostly enter soils from the surface, but little is known about their later distribution and fate. Rodríguez-Seijo et al. (2019) explore whether biogenic activities can be a pathway for microplastics to be transported in soils and into groundwater, and conclude that biogenic activities need to be considered in microplastic dynamics in soil systems.

The role of microplastics as vectors for organic micropollutants has been widely studied in aquatic systems, but much less so in soils. Yu et al. (2019) investigate whether earthworms (*Eisenia fetida*) could be carriers of pesticides in these media. Interestingly, they could not demonstrate that microplastics can be carriers of pesticides to earthworms, but found that these organisms avoided pesticide-contaminated microplastics.

The ubiquity of microplastics in soils, as well as the possible implications for soil organisms, makes them a relevant, albeit unexplored, factor in soil ecology. Rillig et al. (2019) discuss the potential evolutionary implications of the presence of microplastics in soils and raise new questions about microbial adaptions to the changing soil environment.

We are pleased to present this collection of papers at the forefront of the current active research on microplastics in soils, and hope that these studies will provide a useful base for further research in this very dynamic field. We thank the authors and referees for their contributions to this research front.

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Guest Editors
Environmental Chemistry

Conflicts of interest

The authors declare no conflicts of interest.

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