

Foreword

This is the first ever Special Issue of *Sibbaldia*: all papers are connected with the subject of plant health and management of pathogens. Horticulturists have always contributed to the study of plant pests and pathogens and come up with a range of creative solutions to tackle them. Today, occurrences of problems which are causing fundamental change in our gardens and landscapes are noticeably more frequent and dramatic. 2020 is the International Year of Plant Health. The level of prominence being given to this issue is welcomed by plant health professionals as an opportunity to increase research activity and communication about the rise in the impacts of pathogens on livelihoods. This volume contains enlightened opinion, management perspectives, technical information and activities from three continents, along with collaborative initiatives to inform at a professional and public level, and suggestions for solutions.

In the Guest Essay, Janis Antonovics and Katherine Hayden provide a refreshing overarching perspective on pathogens as part of biodiversity. Many may think of them as an 'evil' because they get in the way of our plans and productivity, and while we may resist welcoming them with good reason, we do need to manage them. They too have their role in the evolution of life on earth.

The incidence and impact of diseases, pathogens and pests is undoubtedly making a huge impact on our landscape. The Garden Profile and Student Project in this issue provide a perspective on this, and outline the actions taken for destination and heritage gardens. Kevin Frediani, in his profile of Inverewe in the north-west of Scotland, describes the immense impacts on the landscape and management of this heritage and highly regarded public garden. Since its

first plantings in 1864, the garden has been a centre for experimental approaches to establishing and growing tender woody and herbaceous perennials. Kevin continues this tradition, and is sanguine about the challenges that three significant pathogens have effected in the garden. His attitude is that resistance is not an option and garden managers will do well to acknowledge, work to reduce and manage the effects. Sharp *et al.* describe their research into box blight, which has devastated heritage hedges and parterres in many gardens, and the contributions they have been able to make to reinstate the displays.

One of the greatest risks to garden collections comes from pathogens in soil associated with the roots of transplanted or potted plants, and it is no coincidence that many of the papers in this issue are concerned with managing soil-borne transmission. Green *et al.* document the high diversity of *Phytophthora* pathogens that can be found in soil, and how historic links between gardens are reflected in those assemblages, while Frankel *et al.* present a case study of transmission of these pathogens from and among conservation nurseries and collections. They discuss practical actions to minimise spread of the problem which has occurred over the last 20 years. Summerell & Liew provide a case study in the precarious situation of safeguarding the tiny populations of *Wollemia nobilis* in the wild, ensuring that reintroductions of this iconic species are proven to be phytophthora-free.

Botanic and destination gardens offer an excellent resource for research into the pathogens which are affecting our landscapes, agriculture and industry, and we hope that this issue demonstrates that with its array of articles. However, the collections within them

are also at risk and we must safeguard them with careful management and policies, and use the opportunities they offer to engage and educate visitors and plant professionals. Katherine Hayden describes the approach that the Royal Botanic Garden Edinburgh (RBGE) is taking to manage this risk with protocols in quarantine and horticultural practice, expanded visitor engagement and public education. She takes a precautionary approach towards plant distribution, supported by close working with statutory authorities.

Julian Ives of Dragonfli describes the implementation of a pest control strategy which is increasing in popularity and requires departure from a traditional approach which used to involve extensive application of chemicals. He argues that biocontrols increase diversity and resilience and offer gardens that use them an opportunity to communicate a bigger conservation message to visitors. The case study based at RBGE and Cambridge University Botanic Garden describes how such a programme has been working, and shows that every season is a learning exercise and that working with living organisms is never the same twice.

If we acknowledge that we cannot 'solve' or prevent pest problems, then engagement, information and communication are the key to managing what are, in many cases, new situations and considerable changes. The International Plant Sentinel Network (IPSN) operates worldwide by connecting gardens, arboreta and similar institutions that are watching plants all the time. *Sibbaldia* published a paper on the subject when the IPSN was newly launched (Barham *et al.*, 2015). Marfleet & Sharrock provide a welcome update here on what has become a valuable communication tool.

Finally, Gerry Saddler describes the programmes, initiatives and role that the Scottish Government has played to increase

communication within the professional sector in order to ensure that all benefit from current research and knowledge. A crucial outcome of this has been engagement programmes which bring the travelling and plant-buying public on board to play their part and increase awareness countrywide.

Kate Hughes would like to extend huge thanks to Katherine Hayden, Plant Pathologist at RBGE, for joining her as Editor in producing this issue, and Peter Hollingsworth, Director of Science at RBGE, for suggesting the production of a volume dedicated to this topic. Katherine has provided a depth of understanding of the issues and rigorous evaluation of the topics as well as introducing new contributors to *Sibbaldia*. The usual editorial processes of producing *Sibbaldia* have really benefited from her input. We both very much hope that this volume will bring new readers to *Sibbaldia* too. As ever, all papers are available to download without charge at <https://journals.rbge.org.uk/>

This Special Issue is timed to coincide with the launch of the International Year of Plant Health 2020 (IYPH) and as Editors of *Sibbaldia* we are delighted to be able to contribute to it with this volume and to share information about the vital issues and the measures taken worldwide. We hope that it provides a fitting snapshot of the work underway across the globe to assess, evaluate and communicate about problems which affect us all. The IYPH will enable greater engagement and collaboration to the benefit of all.

Kate Hughes, and on behalf of Katherine Hayden.
Editors

References

BARHAM, E., SHARROCK, S., LANE, C. & BAKER, R. (2015). An International Plant Sentinel Network. *Sibbaldia*, 13: 83–98.