

Nematology News

33rd Symposium of ESN, Ghent 2018

Scientific programme available



September 9th is approaching at high speed and we are looking forward to welcome +400 nematologist from around the world in Ghent for the 33rd ESN symposium. We feel privileged with this success. In total 355 abstracts were submitted from which 144 were selected for oral presentation. Due to the high number of abstracts we will organise two poster sessions, one on Monday and one on Tuesday. The scientific programme (subject to change) can be found on the ESN website conference pages (<https://www.esn-online.org/conference>).

Ghent is a popular city. During the week of our symposium several other conferences take place. Make sure you book your accommodation as soon as possible if you have not yet done this.

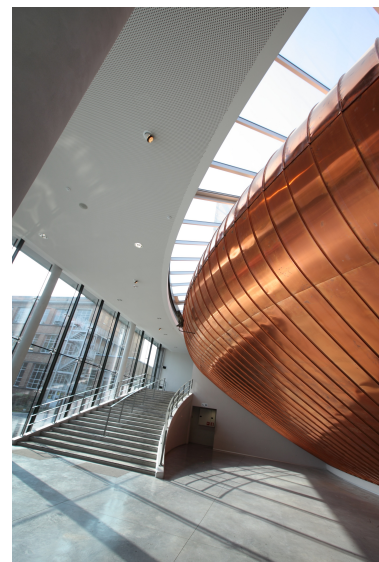
If you want to join, (late) registration is possible till 31st August.

More info on page 7

Hope to see you in Ghent,

Wim Wesemael

on behalf of the organising committee



2018 Governing board elections

Earlier this year Raquel Campos-Herrera and Catherine J. Lilley joined the ESN Governing board in replacement of Jim Baldwin and John Jones. In September Soledad Verdejo-Lucas will step down as board member as she recently retired. During the general meeting of ESN in Ghent (13/09/18) an election for her replacement will be organised. We have received three nominations: Sebastian Eves-van den Akker, Sara Sánchez Moreno and Shahid Siddique. A short bio can be found below and on the esn website.

Sebastian Eves-van den Akker

Department of Plant Sciences, University of Cambridge, UK.

I was introduced to the world of nematology during my undergraduate project in the Plant nematology lab at the University of Leeds. Their enthusiasm got me hooked and they are largely to blame for everything that followed. From 2010 to 2014, I studied for a PhD at the University of Leeds and The James Hutton Institute, jointly supervised by Peter Urwin and John Jones. I learned the fundamentals of plant nematology and started to use bioinformatics to address biological questions, working on several genomes and transcriptomes including the first cyst nematode genome project.



In 2015, I secured an independent fellowship to continue my research on nematode “effectors” at the University of Dundee and the John Innes Centre, Norwich. Those institutions are renowned for their molecular research into plant–pathogen interactions and I wanted to borrow some of the techniques used in other plant-pathogen systems and apply them to plant nematology. For example, in collaboration with Paul Birch and Mark Banfield, we applied structural biology to solve the first crystal structures of plant parasitic nematode proteins.

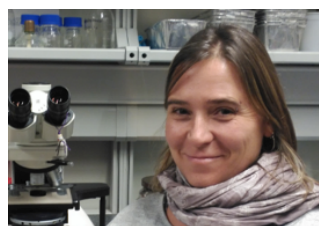
During this time, I became interested in the regulatory processes underlying plant-nematode parasitism. Discoveries made while leading the *Globodera rostochiensis* genome consortium ultimately led to the award of a subsequent 5 year fellowship to establish a new nematology research group at the University of Cambridge. I understand it is more than 60 years since there was plant nematology at Cambridge (and those are big shoes to fill), but I look forward to the opportunity to pass on my enthusiasm to the next generation of nematologists. Current projects range from understanding the genomic regulation of parasitism to the elusive transformation “problem”, and we feel fortunate to be tackling these projects with our collaborators and colleagues around the world.

Throughout my academic career I have been a member of the ESN, and have benefited enormously from the support they offer young scientists. I’d like to join the board to give something back to the society that has helped me so much.

<https://www.plantsci.cam.ac.uk/research/sebastianevesvandenakker>

Sara Sánchez Moreno

Instituto Nacional de Investigación y Tecnología y Alimentaria
Unidad de Productos Fitosanitarios, Madrid , Spain



Dr. Sara Sánchez Moreno is a doctor on Biology by the University of Alcalá, Spain. She developed her PhD at the Natural History Museum in Madrid on nematode ecology in polluted areas and conducted post-doctoral research at the University of California at Davis, focusing on the role of soil nematodes in soil functioning in agroecosystems. Back in Spain, she joined the National Institute of Agriculture and Food Research and Technology, in which she was granted a Tenured Scientist position in 2010. Her research focuses on the role of beneficial nematodes in ecosystem services and the use of nematodes as bioindicators. She has been an invited speaker in national and international events, and supervised PhD and MSc students, and has collaborated with the industry in the search of environmentally friendly pesticides. Currently, she is involved in several projects at national and international levels focused on long-term effects of tillage on soil communities, nematodes as indicators in tropical systems, and nematodes as indicators of climate change effects on the soil system.

https://www.researchgate.net/profile/Sara_Sanchez-Moreno

Shahid Masood Siddique

Department of Molecular Phytomedicine
University of Bonn, Germany



I am a plant-nematode interaction researcher with a background in plant molecular biology and stress signalling. In 2004, I completed my master's in botany at the Institute of Pure and Applied Biology, Bahauddin Zakariya University (BZU), Multan, Pakistan. In 2006, I moved to Vienna, Austria, to pursue a PhD at the Department of Plant Protection, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria. It was at BOKU that I started my long-term association with nematodes and nematologists. My PhD research focused on characterising the role of the *Arabidopsis* MIOX (myo-inositol oxygenase) gene family in its interaction with beet cyst nematode *Heterodera schachtii*. In 2006, I attended my first ESN meeting in Blagoevgrad, Bulgaria, and since then, I have contributed to presenting and chairing sessions at ESN meetings. I also helped organize an ESN meeting in Vienna (2010) and the German Nematology meeting in Bonn (2018).

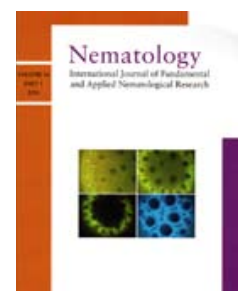
I began working as a lecturer at the University of Bonn's newly established Department of Molecular Phytomedicine in 2010. I played a key role in organizing its labs and streamlining its protocols while also establishing nematode cultures and training technical staff members and PhD students. During the three years the department spent preparing to begin producing publication-quality data, these activities helped me acquire the skills necessary for managing a nematology lab. Then, in 2015, I was invited to establish my own junior research group and to write grant proposals as a principal investigator.

My research group consists of 10 members (2 postdocs, 4 PhDs, and 4 master's) and my research aims to enhance the basic understanding of plant-nematode interaction and translate the resultant knowledge into the development of tools/resources for the better management of plant-parasitic nematodes. The impact of my research includes over million USD in research funding, around two dozen publications, and two book chapters. I have supervised four bachelor's students and 12 master's students and co-supervised five PhD students. I also currently supervise five PhD students. I have served as a reviewer for over 15 international journals (e.g., *PLOS Pathogens*, *New Phytologist*, *Nematology*, *The Plant Journal*) and PhD theses from various Pakistani Universities. Since 2010, I have regularly taught courses at the University of Bonn, Germany. Most of my teaching involves instructing students on the parasitic strategies of phytopathogens, particularly nematodes, which has allowed me to extend my research directly into the classroom. My objective as a teacher has been to train students to understand the basic aspects of plant nematology and to motivate them to further their learning in advanced nematology.

<https://www.mpm.uni-bonn.de/staff/dr.-shahid-m.-siddique>

Discounted subscription to *Nematology* for ESN members

Members are reminded that they can subscribe to the 2018 Volume of *Nematology* at the special individual e-only member subscription rate of € 141/US\$ 159 (excluding VAT). Please send your order to brill@turpin-distribution.com, quoting action code 70258. Price group/type to be entered as "society/member"



Highlights from recent Nematology issues can be found on pages 4-5

Nematology highlights

Nematology will now consider Review articles for publication, in addition to the full Research papers, Forum articles and Short Communications that are currently published.

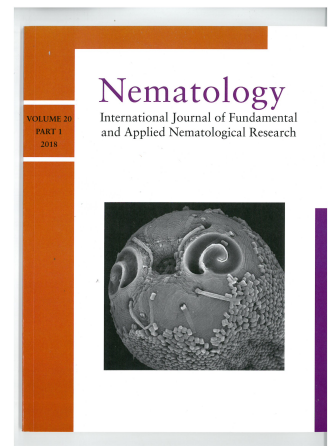
Nematology papers, including the earlier papers of *Nematologica*, are available on Brill's online platform at: <http://booksandjournals.brillonline.com/content/15685411>; all articles are available online with a DOI immediately corrected proofs are returned.

The first five issues of *Nematology* volume 20 (2018) comprised 2 Forum articles, 33 full research papers, 1 short communication and 1 book review. Here, Roland Perry highlights a paper from each of the first five issues.

Highlights of Vol. 20 (2018) Issues 1-5

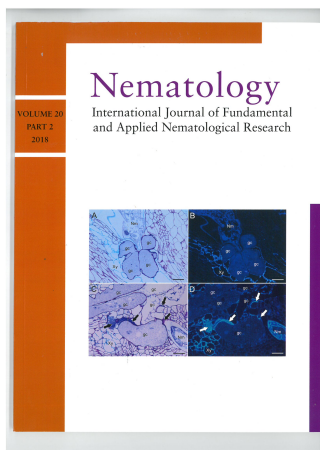
Issue 1

The pinewood nematode *Bursaphelenchus xylophilus*, the causal agent of the devastating pine wilt disease, is vectored by the cerambycid beetle *Monochamus alternatus*. In a paper entitled *Effect of Monochamus grandis (Coleoptera: Cerambycidae) on phoretic stage formation of Bursaphelenchus xylophilus (Nematoda: Aphelenchoididae) and the transfer of nematodes to the beetle* (pp. 43-48) Noritoshi Maehara and co-authors examined the ability of the related species, *M. grandis*, to carry *B. xylophilus*. They tested the effects of *M. grandis* on the formation of the fourth-stage dispersal juvenile (JIV) of *B. xylophilus*, the phoretic stage carried by vector beetles, and also examined whether JIV of *B. xylophilus* transferred to *M. grandis*. *Monochamus grandis* induced JIV formation and carried similar numbers of JIV as *M. alternatus*. Moreover, the percentage of JIV transferred to *M. grandis* to total JIV was higher than for *M. alternatus*. The authors concluded that *M. grandis* had potentially equal ability as *M. alternatus* to carry *B. xylophilus*.



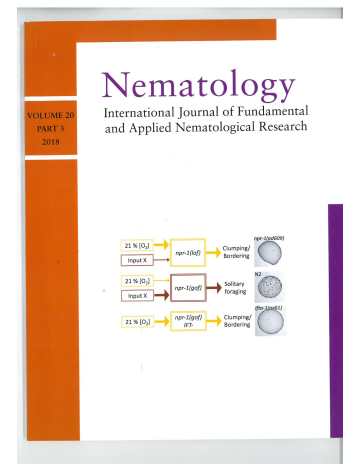
Issue 2

In a paper by Miguel Talavera-Rubia *et al.* entitled *Differential feeding site development and reproductive fitness of Meloidogyne incognita and M. javanica on zucchini, a source of resistance to M. incognita* (pp. 187-199), the development of *M. incognita* and *M. javanica* on zucchini 'Amalthee' was compared to characterise critical events in plant parasitism. *Meloidogyne incognita* was much less successful parasitising zucchini than *M. javanica* despite similarities in penetration rates and juvenile development. The increased frequency of undersized individuals, immature females and empty galls evidenced a failure in *M. incognita* development. *Meloidogyne incognita* induced larger feeding sites that contained more and larger giant cells than did *M. javanica*. Critical events in parasitism differentiating the nematode isolates were the transition from fourth-stage juveniles to females, and the reduced fertility of the egg-laying females. The authors concluded that zucchini can be considered a source of resistance to *M. incognita* because it restricted nematode proliferation by supporting less fertile egg-laying females and producing fewer egg masses and total eggs.



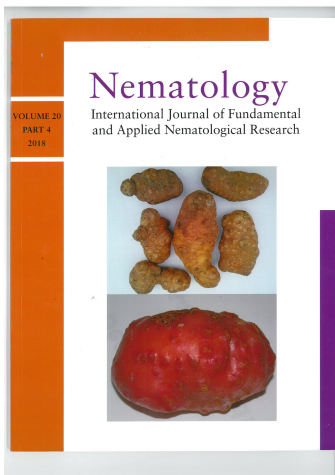
Issue 3

In *Caenorhabditis elegans* and *Pristionchus pacificus* social behaviours of clumping and bordering have been described as a mechanism of hyperoxia avoidance. A recent study in *P. pacificus* revealed a novel regulatory pathway that inhibits social behaviour in a response to a yet unknown environmental cue. This environmental signal is recognised by ciliated neurons, as mutants defective in intraflagellar transport (IFT) proteins display social behaviours. The IFT machinery represents a large protein complex and many mutants in genes encoding IFT proteins are available in *C. elegans*. However, social phenotypes in *C. elegans* IFT mutants have never been reported. In a Forum article entitled *A cilia-mediated environmental input induces solitary behaviour in Caenorhabditis elegans and Pristionchus pacificus nematodes* (pp. 201-209), Eduardo Moreno and Ralf Sommer examined 15 previously isolated *C. elegans* IFT mutants and found that most of them showed strong social behaviour, which indicates conservation in the inhibitory mechanism of social behaviour between *P. pacificus* and *C. elegans*.



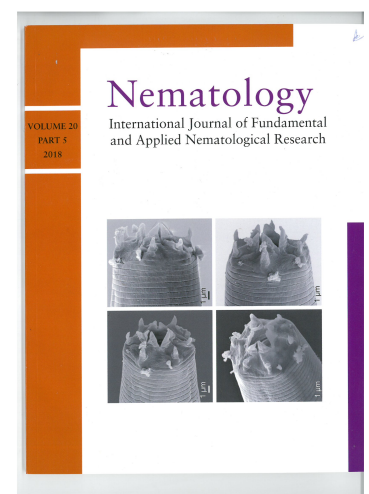
Issue 4

The genus *Hemicycliophora* presently contains 132 valid species of sheath nematodes. In *Morphological and molecular characterisation of two new Hemicycliophora species (Tylenchida: Hemicycliophoridae) with a revision of the taxonomic status of some known species and a phylogeny of the genus* (pp. 319-354), Van den Berg *et al.* used samples from surveys in Canada, South Africa, Spain and USA and distinguished six valid and six putative unidentified species by integrating the results of morphological and molecular analyses. Valid species included: *H. californica*, *H. gracilis*, *H. parvana*, *H. poranga*, *H. raskii* and *H. signata*. The authors described two new species from Spain and the USA, *H. onubensis* sp. n. and *H. robbinsi* sp. n., respectively. *Hemicycliophora wyei* is proposed as a junior synonym of *H. parvana* and *H. ripa* is proposed as a junior synonym of *H. poranga*. Eighteen valid and 13 unidentified species of sheath nematodes were characterised using the partial *COI* mtDNA gene. A total of 94 new sequences of which 77 were for the *COI* mtDNA gene were obtained. Phylogenetic relationships within *Hemicycliophora*, using the D2-D3 expansion segments of 28S rDNA, ITS rRNA and *COI* gene sequences, are presented as inferred from Bayesian analysis.



Issue 5

Nicotiana benthamiana is widely used as a model plant to analyse cell biology and to obtain insight in the molecular host-pathogen interaction because it is susceptible to many pathogens. Since *N. benthamiana* can be transformed easily, it is also used to study pathogens for which it is not a known host. *Meloidogyne graminicola* has a fairly broad host range of mainly monocots and some dicots but no data were available on the ability of *M. graminicola* to infect *N. benthamiana*. In a study entitled *Nicotiana benthamiana as model plant for Meloidogyne graminicola infection* (pp. 491-499), Diana Naalden and co-authors show that *M. graminicola* is able to infect and complete its life cycle in *N. benthamiana*. In addition, *M. graminicola* was also able to develop in *N. tabacum* but the reproduction was very low. The authors conclude that *N. benthamiana* can be considered as a host, while this is not the case for *N. tabacum*.



Roland N. Perry

Editor-in-Chief, *Nematology*

ESN 2022 host selection



Blagoevgrad 2006 Vienna 2010 Adana 2012 Braga 2016 Gent 2018

Three bids for the organization of the ESN Symposium 2022 were submitted: **Córdoba** (Spain), **Edinburgh** (Scotland) and **Tel Aviv** (Israel).

Córdoba

Organisers: National Institute of Agricultural and Food Research and Technology (INIA) & Andalusian Institute of Agricultural and Fisheries Research and Training (IFAPA)

Proposed time: 12 - 16th June

Edinburgh

Organisers: The James Hutton Institute & Edinburgh University

Proposed time: mid July

Tel Aviv

Organisers: Division of Nematology, Institute of Plant Protection, Agricultural Research Organization (ARO)

Proposed time: 4 - 9th September or 11 - 16th September

The three bids will be presented during the ESN general meeting (13th September) in Ghent after which the members can vote.

Change in membership fee transfer

Dear ESN members,

The payment of the membership fees has been organised over many years on an annual basis and with the national representatives and I would like to thank them for their long term support in collecting the fees. We would now like to change the payment procedure since bank transfer using IBAN and BIC does not cause any additional costs compared to a national bank transfer. In order to reduce the bureaucratic burden for our treasurer Hans Helder, we also would like to change to biannual payment so the fee will be 40,00 € for two calendar years. This amendment will be submitted to your votes during the next ESN General Assembly that will be held on Thursday 13th September, the last day of the Ghent Symposium. Once adopted this amendment would immediately enter into force for the 2019-20 membership fee.

The ESN board

Why join the ESN? - the movie

Please have a look at our video "Why join the ESN ?" made from some interviews during the last ESN meeting. You can access this video via the homepage of our website <https://www.esn-online.org>

Also available at this address

https://www.dropbox.com/sh/ebk0lvge179crq2/AABu_zaqEM-YJayZB1Zr9ZC8a?dl=0

Twitter link : <https://twitter.com/ESNematologists/status/869574031032365056>

Upcoming meetings

ONTA Annual Meeting 2018, August 19-23, 2018. Arequipa, Peru. <http://www.ontaweb.org>



33rd Symposium of the European Society of Nematologists, September 9-13, 2018. Ghent, Belgium. <https://www.esn-online.org/conference>

Advances in Nematology, aab, 11th December 2018. London, UK.
Deadline abstract submission: 12th October.

<http://www.aab.org.uk/contentok.php?id=184&basket=wwsshowconflist>



7th International Congress of Nematology, 3 - 8th May 2020, Antibes, France

<https://www.alphavisa.com/icn/2020/index.php>

3 to 8 MAY 2020 - CONFERENCE CENTRE OF ANTIBES JUAN-LES-PINS - FRANCE



"Crossing borders: a world of nematode diversity and Impact to discover"



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Information needed for the newsletter

The ESN Governing Board would like this newsletter to be a Forum that is more widely used by the membership to share news and information. So, if you have any information and/or images that might be of interest to ESN members please send a note to the editor (Wim Wesemael - wim.wesemael@ilvo.vlaanderen.be). All that is needed is a small amount of text in a word file or an email message, along with an accompanying image.