



ORGANIZATION OF NEMATOLOGISTS OF TROPICAL AMERICA
ONTA NEWSLETTER

<http://www.ontaweb.org/>

November 2019

SEVENTH INTERNATIONAL CONGRESS OF NEMATOLOGY

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



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



3 TO 8 MAY 2020 ANTIBES JUAN-LES-PINS-FRANCE

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Antibes-Juan-les-Pins

Bienvenue en France! We hope to see you all soon

The 52nd NTA Annual meeting will be held next year from 3 – 8 May 2020 in **Antibes Juan Les Pins (France)** within the frame of the Seventh International Congress of Nematology hosted by the European Society of Nematologists (ESN) under the auspices of the International Federation of Nematology Societies (IFNS). Juan-les-Pins (Fig. 1), one of the most celebrated seaside resorts of the French Riviera since the ‘Belle Epoque’ of the 1920s. Every effort has been made by the Local Organizers to make the meeting comprehensive, cutting edge, and affordable to all. So register now to take part in the Congress next spring – a perfect time of year on the Riviera.



Fig. 1. Palais des Congress

ICN 2020 Second Announcement

Make a note on your diary for:

- Early registration and abstract submission until 15 January 2020.
- Register now at <https://www.icn2020antibes.com/>
- Applications for student and early career travel bursaries must be received by 30 November. Successful applicants will be informed by the first week of January.

Program and congress highlights

- ✓ **Springtime congress on the Riviera (3-8 May 2020) – perfect weather, beat the summer crowds!**
- ✓ **12 keynote talks ranging from “nematodes in space” to “microbiomes of nematodes in the seas,” to “nematode management in agrosystems.”**
- ✓ **12 workshops/symposia**
- ✓ **32 oral sessions**
- ✓ **Poster sessions in the spacious surroundings of the Palais des Congress**
- ✓ **3-minute flash previews during the regular oral sessions.**
- ✓ **Four organized tours (or enjoy the day exploring the medieval town, its shops, markets, museums, restaurants and beaches)**
- ✓ **Special registration rates for middle and lower income countries**

For Students!

- ✓ **100 bursaries up to €1200 for students and early career scientists (must have been applied for by 30 November, 2019!)**
- ✓ **Special congress hotel rates beginning at €35**

- ✓ Low registration rates
- ✓ Student Poster Awards

Registration includes lunches, coffee breaks, a welcome reception, mid-week tours, and the congress banquet.



From the Newsletter Editor

Dear All,

The next year the 52nd ONTA Annual meeting will take us from the Americas to Europe (France). On this occasion, we will meet with all nematology societies worldwide as part of the Seventh International Congress of Nematology (3 to 8 May 2020 Antibes Juan-les-Pins, France). The International Congress of Nematology is organized every six years and previous venues have included:

- 1984 – Guelph, Ontario (Canada)**
- 1990 – Veldhoven (The Netherlands)**
- 1996 – Goiser, Guadeloupe (French West Indies)**
- 2002 – Tenerife (Arona), Canary Islands (Spain)**
- 2008 – Brisbane (Australia)**
- 2014 – Cape Town (South Africa)**
- 2020 – Antibes Juan-Les-Pins (FRANCE)**

Some of us have had in the past the unique opportunity of attending at least one ICN, and we would like to share with you part of the history behind the gathering of all nematology societies on a six year basis as described by

Perry and Starr (2008). Nematology societies started to be developed in the 1950s and their activities soon included the organization of scientific meetings from the 1960s onwards. At that time, meetings facilitated interactions among nematologists from countries worldwide and, as a result, it became clear for the need of an official forum to link the existing nematology societies. Thus, the three largest societies the ESN, the SON and ONTA joined in the organization of the 1st International Congress of Nematology (ICN) in Guelph, Canada in 1984 (Fig. 2). During this Congress the proposal to create an International Nematological Society was made that would eventually change its name to the International Federation of Nematology Societies (IFNS). The second ICN was organized in 1990 at Veldhoven, The Netherlands, and it was agreed to hold the ICN every six years. This apparently long period of time is just enough to allow for bidding to host the Congress and the preparation of the congress. Each Congress is the result of an enormous amount of work carried out behind the scenes by the winning host society under the auspice of IFNS. There are a many anecdotes to recall from ICN but one memorable event occurred during the third ICN in Goiser, Guadeloupe (French West Indies) in 1996 as a hurricane and an

earthquake during the first couple of days caused an initial commotion among delegates. Many of us who attended the Congress can remember the candles and matches that we were given as electricity failed. The fourth International Congress of Nematology (Fig. 3) was held in Tenerife (Arona), Canary Islands (Spain), and the fifth was held in Brisbane, Australia, in 2008 and hosted by the Australasian Association of Nematologists. In 2014 we met in Cape Town, South Africa, for the sixth INC, organized by the Nematological Society of Southern Africa, and we will soon meet again in May 2020 in France. On this occasion, the seventh ICN in Antibes, France will be organized and hosted by the ESN.

It is worth mentioning that the increased interaction between nematology societies and the success of the first three

International Congresses of Nematology, were facilitated by the establishment of IFNS as a global communications forum (www.ifns.org). The establishment in 1996 and success of the Federation was due to Kenneth Barker of North Carolina State University who became the first President of the IFNS. At present the IFNS includes 16 different nematology societies.

The goals of IFNS are:

- To foster global awareness of nematodes and advancement of the science of nematology.
- To serve as a worldwide interface for nematology societies, promoting communication, education, research and outreach.



Fig. 3. First International Congress of Nematology 1984 – Guelph, Ontario (Canada)



Fig. 3. Fourth International Congress of Nematology 2002 – Tenerife (Arona), Canary Islands (Spain)

References:

Perry, R.N. and Starr, J.L. (2008). Dynamics of nematological infrastructure. In B. Eriksson, D. McNamara and J. Webster, eds. *An Anecdotal History of Nematology*. Pensoft Publishers, Bulgaria, pp. 258-271.

Highlights XLI ONTA Annual Meeting 22 – 25 July 2019, San José, Costa Rica

The **XLI ONTA annual meeting** was held this year in San José (Costa Rica) from 22 – 25 July. The meeting was attended by 148 delegates from 16 countries worldwide. They include ONTA members, non-members, stands, one day meeting, students and accompanying persons. The **Windham San Jose Herradura Hotel and Convention Center** hotel venue (Fig. 4A) and facilities were excellent and all attendees enjoyed a

warmth reception from our Costa Rican host the **Universidad Nacional (UNA)**, the Local Organizers Committee, a varied scientific program and the traditional friendly camaraderie of the ONTA annual meetings. The Local Arrangements Committee was chaired by **Fabio Chaverri Fonseca**, from UNA with the support of other Costa Rican higher education and research institutions, as well as local ONTA members.

The opening ceremony (Monday 22) and welcoming words were given to ONTA members (Fig. 4B-D) by **Daniel Rueda** (Vice Chancellor for Research, UNA), **Edward McGawley** (ONTA President), and **Fabio Chaverri** (Local Arrangements President). The scientific program kick off took place on Monday morning with three key note speakers and conferences: “Managing nematodes in high-value crops: increasing sustainability in a challenging environment” (**Johan Desaeger**, University of Florida, USA), “The nematode threat to food security in Sub-Saharan Africa” (**Danny Coyne**, IITA, UK), and “Progress and priorities for nematodes as indicators” by **Deborah Neher** (Vermont University, USA). The conference sessions were followed by oral presentations by delegates and the Banana Symposium; the latter event awakened a lot of interest for local farmers and agribusiness. The Symposium included various topics related to banana and ensete plant-parasitic nematodes and their management in Africa (D. Coyne), nematicide (fluopyram) control efficacy (**Randall Vargas**, Costa Rica), agricultural management of nematodes and *Helicotylenchus dihystrera* *Radopholus similis* and *Meloidogyne incognita* interactions in *Musa* AAB (Subgroup Plantain) “Dominico Hortón” seedlings (**Oscar Adrián Guzmán**, Colombia), effects of nematicide rotation (Mario Araya, Costa Rica), and opportunities for the integrated management of *Musa* AAA cv. Grande Naine root health by microbial stimulation of the soil and its environment (**Pedro Emilio Torres**, Costa Rica).

Tuesday 23 began with the morning Symposium of Nematode Systematics (Fig. 4E-F), which included topics such as biodiversity of free-living nematodes in Mexico (**Hugo Mejía**, Mexico), DNA barcoding as a tool for nematode diagnostics, species discovery and mapping distribution (**Tom Powers**, USA), nematode diversity (**Reyes Peña Santiago**, Spain, Fig. 4E),

historical overview of nematological diversity studies in Costa Rica (**Alejandro Esquivel**, Costa Rica), and the virus-vector family Trichodoridae, hidden diversity and state of the art (**Wilfrida Decraemer**, Belgium). There was an ‘Ignite talk’ entitled “Nematodes: tale of ecosystem function” (Deborah Neher, USA). The afternoon Symposium of Biological Control included talks on a metagenomic study of banana nematode antagonists in Canary Islands (**Aurelio Ciancio**, Italy), the potential use of entomopathogenic nematodes and their bacterial symbionts in the management of agricultural pests (**Lidieth Uribe**, Costa Rica), trends of biological pesticides in the US market (**Lee Simmons**, USA), and the process of bringing a new crop protection product to the market (**Luis Payán**, USA).

On Wednesday morning, the Symposium of Nematode Genomics covered topics such as “What have we learnt after more than 10 years of root-knot nematode genomics?” (**Étienne Danchin**, France), “How an applied nematologists uses genomic tools to address plant-parasitic nematode research?” (**Inga Zasada**, USA), “Monitoring and tackling genetic selection in the potato cyst nematode *Globodera pallida*” (**Eric Granier**, France), “Phylogeny and phylogeography of the cyst nematodes from the genus *Globodera*” (**Sergei Subbotin**, USA), and “Genomics of the soybean cyst nematode, shaping future solutions” (**Benjamin Mimee**, Canada). The scientific program included 36 oral papers, 24 posters and the Rodríguez-Kábana best poster student competition. The Poster session was held on Monday 22 July (17:15 till 19:15). The presentation of the posters was this time in a new electronic format. Individual posters were allocated to three different “totems” to be displayed, each poster having 15 minutes to be shown and presented to the audience. The banquet and awards ceremony took place on Wednesday evening.

Highlights XLI ONTA Annual Meeting 22 – 25 July 2019, San José, Costa Rica (Cont.)



Fig. 4. A: Venue; B: Fabio Fonseca, Chair Local arrangements Committee; C: Ed McGawley, ONTA President; D: Delegates; E: Reyes Peña-Santiago; F: From left to right: Hugo Mejía, Tom Powers, Reyes Peña-Santiago, Wilfrida Decraemer.

Awards Ceremony and Banquet

Travel awards

The ONTA travel awards are annually sponsored by the ONTA Foundation with the aim to help and encourage nematology students to attend the ONTA meetings, and participate in the Rodrigo Rodríguez-Kábana best poster students competition. On this occasion, the travel awardees were (Fig. 5): **Nathalia Fitoussi** (Ph.D., Israel), **Leonardo L. Freire** (Ph.D., Brazil), **David A. Moreira** (M.Sc. Honduras), and **Elizabeth González Córdoba** (B.Sc., Costa Rica). The awards were announced by Janete Brito (ONTA Foundation Chair) and Alejandro Esquivel (Local Arrangements Committee).



Fig. 5. ONTA Travel Awardees. A: Nathalia Fitoussi; B: Leonardo L. Freire; C: David A. Moreira; D: Elizabeth González Córdoba.

Rodrigo Rodríguez-Kábana Students Poster Competition



Fig. 6. Poster sessions. A: Totem and poster display; B: Presenting a poster; C: Audience visiting the posters.

The winners (Figs 7-9) and title of the poster presented by each student were as follows:
First place Kanan Saikai (Ph.D., Japan) University of Wisconsin-Madison (Fig).
A search for the best yield predictor for root lesion nematodes. A case study of Pratylenchus penetrans on soybean.



Fig. 7. First place. From left to right: Janete Brito, Kanan Saikai and Alejandro Esquivel



Second place: Clemen Oliveira (Ph.D., Brazil) University of Florida (Fig. 8, centre). *Morphological and molecular identification of two Florida populations of foliar nematodes (*Aphelenchoides* spp.) isolated from strawberries with notes on their bionomics.*



Fig. 9. Third place: Elizabeth González Córdoba (B.Sc., Costa Rica) Instituto Tecnológico de Costa Rica (Fig. 9, centre). *Determination in vitro of the biological effectiveness of different nematophagous microorganisms on *Pratylenchus brachyurus* in pineapple crop.*

Appreciation Awards

Local Sponsors

Gold Sponsors AEP (Asociación de profesionales en Enfermedades de Plantas de Costa Rica) and Colono Agropecuario/Bayer, Corbana (Corporación Bananera de Costa Rica), ICAFE (Instituto del café de Costa Rica).

Local Arrangements Committee

M.Sc. Fabio Chaverri (Chair), M.Sc. Walter Peraza, M.Sc. Alejandro Esquivel, M.Sc. Lorena Flores, Eng. Ingrid Varela, Eng. Randall Vargas, Dr Mario Araya, Eng. Mainor Rojas, Eng. Roy Artavia, and Marian Bermúdez (Fig. 10A, B).



Fig. 10A: Martín and Fabio



Fig. 10B: Fabio and members of the Local Arrangements Committee

Honorary Members



Fig. 11. Honorary Member Dr Janete Andrade de Brito receiving her award from Ed McGawley



Fig. 12. Martín Delgado and new Honorary Member and Extraordinary service in nematology awardee, Dr Ignacio Cid del Prado



Fig. 13. Martín Delgado delivering the Past President Award to Dr Edward McGawley

Our Traditional Banquet and dancing party



Fig. 14A. Banquet venue



Fig. 14B: ONTA members ready to dance

Field trip

On Thursday morning all delegates went for a technical field trip that include a visit to a coffee plantation, managed by Starbucks, where we were welcomed and given an introductory talk by Carlos Mario Rodríguez (Director Global Agronomy Starbucks). We were treated to tasty coffee drinks before attending a short presentation on management of coffee plant-parasitic nematodes (Fig. 15).



A



B

Fig. 15. A: Talk on management of plant-parasitic nematodes of coffee; B: ONTA Members attending the talk and exhibition of grafted coffee plants.

After an interesting field visit we were treated to a Costa Rican cuisine lunch courtesy of local sponsors of the ONTA meeting (Fig. 16).



Fig. 16. A-C: Lunch time at a wonderful venue! D: Elizabeth González Córdoba and Julia Meredith.

After the meeting, some of us extended our stay in Costa Rica to give talks to banana farmers (Danny Coyne) about management of plant-parasitic nematodes and perspectives for the biological control of phytoparasitic nematodes in Latin America (Rosa H. Manzanilla-López) at Instituto Regional de Estudios en Sustancias Tóxicas de la Universidad Nacional (IRET-UNA). These activities were part of the sponsorship program of the Local Organizers Committee to support the attendance and participation of speakers at the ONTA meeting. We would like to thank M.Sc. Fabio Chaverri (IRET Director) and Dr Danny Humphreys for their help and the unique opportunity to help disseminate the information about plant-parasitic nematodes to other institutions and stakeholders that could not be present at the ONTA Annual Meeting venue.

On behalf of ONTA, we would like to give a big thank you to all our Costa Rican hosts and sponsors.

ONTA Officers Reports

Vice-President

On April 25, Fabio informed me that the reception of papers had been closed and the program was preliminarily established with the following topics:

1. Welcome cocktail
2. Two magisterial conferences
3. Five symposiums (Crops, Diversity and Systematics, Biological Control and Integrated Management, Genomics, Chemical Control)
4. Oral Presentations
5. Poster Session
6. Stand Area
7. ONTA business meeting
8. Presidential Reception (by invitation only)
9. Awards Ceremony (Poster Competition) and Recognitions
10. Gala Dinner
11. Field Trip to the Tarrazú Zone (coffee plantation, nematode management)

Post-congress tour tours were already defined, the options were multiple (1 or several days, adventure tours, city tours, volcanoes, beaches, etc.) and each person had to make the booking.

On June 22, Fabio told me that up to that date we had:

- a) 60 people who had cancelled their registration, b) 84 papers received, c) the data of the posters were not given because the presentation date had been extended, d) facilities and timetable were arranged for the Presidential Reception (only by invitation) that the ONTA usually gives to the President.

As you may know, I was not physically well enough to attend the Local Arrangements Committee (LAC), but I tried to maintain permanent coordination with Fabio, who announced in Arequipa that the LAC-Costa Rica had decided to entrust the general organization of the ONTA-2019 Meeting to a private company linked to the Costa Rica University.

Respectfully submitted,

Martín Augusto Delgado Junchaya

ONTA Vice-President

Secretary Report

During August 2018, the Secretary intensified cooperation with the Local Arrangements Committee (LAC) of ONTA's meeting in Arequipa, Peru, to receive additional registrations, membership payments and donations to ONTA Foundation. Meeting expenses were coordinated with Carolina Cedano in Arequipa. Progress information was presented at intervals to ONTA's Treasurer, Renato Inserra, and a final report was sent to the Executive Committee.

Minutes of the Executive Committee Meeting held in Arequipa, August 19, 2018, were recorded and are published in the Newsletter Vol. 49 (1):14-15.

Secretarial work has continued to update member information with current email addresses. Membership Directories were posted on ONTA's website. Larry Duncan receives special thanks for prompt and efficient posting. New member names and email addresses were provided to Deborah Neher for inclusion in ONTA's ListServ, to *Nematropica* Submissions and Business Manager. General correspondence with regular members and sustaining members was carried out as needed. ONTA's PayPal system was monitored regularly to receive membership payments and enrol new members. New members received an additional acknowledgement and welcome email.

During the first part of this year, a general call for payments due was sent out to all members using ListServ, which is maintained by Deborah Neher. Her efforts in establishing and maintaining this service have been vital to efficient and rapid ONTA communication. She receives special thanks and recognition for her help and continued attention to details that update and improve ONTA's interaction with members. Many members used the new PayPal system to pay

dues; however, others preferred processing through ONTA's bank account, and some required official invoicing and receipts in addition to the PayPal receipt.

As of June 30, 2019, ONTA has 237 members in active status from 34 countries and 6 continents. Since the last report in July 2018, ONTA has 26 new members. Twelve of these registered in the latter part of 2018, and 14 in 2019. Between 2018 and 6 months of 2019, 53 new members or former members reactivated their ONTA memberships.

Files are ready to be passed over to the newly elected secretary, Maria Mendes.

Julia Meredith
Former Acting Secretary

Treasurer Report (2018-2019)

Gainesville FL, July 4, 2019

Dear Colleagues:

I am submitting, in an attached file, a tabulated account of received deposits and incurred expenses by ONTA from July 24, 2018 to July 4, 2019. Deposits were divided into different categories, including regular member dues, sustaining member dues and other payments related to ONTA activities.

ONTA FL, Inc. is a tax-exempt corporation, which is considered by the state of Florida and the US federal government a charitable 501(c) (3) organization operating for scientific and educational purposes. However, a tax return must be filed each year. I filed the return for 2018 electronically, following new procedures for this type of filing.

The 50th Annual Scientific Meeting in Arequipa, Peru, was financially sound because of the cooperation between Julia Meredith, ONTA Secretary, and Carolina Cedano, Local Arrangement Committee. These two persons spent much time in collecting registration fees (US\$ 9,850) by PayPal and from on-site

participants attending the meeting. The amount of collected fees was deposited in the ONTA Treasury to reimburse the funds (US\$ 5,000) given in advance by ONTA to initiate the preparation of the meeting. After subtracting refunded registration payments and reimbursement for expenses specified in the tabulated reports, there was a surplus of about US\$1,600. Both Julia and Carolina receive my sincere thanks and those of ONTA members.

During 2018-2019, we had an increase in income of US\$ **9,490.35**, because of funds from the organization of the 50th Annual Scientific Meeting in Arequipa and from contributions totalling US\$9,000 from Sustaining Members, including the following donors, cited in alphabetical order: Agbiome, Corbana, Corteva Agriscience, J. Desaegeer, E-Nema, FMC and Marrone Bio Innovations as shown in the tabulated report. Some of these contributions are for the year 2018 and others for 2019.

I would like to emphasize the generous gift of US\$ 5,000 from Corteva Agriscience made possible by John Wiles. Let me add that **Corbana, Corteva Agriscience, and Marrone Bio Innovations** are not only sustaining members but also supporters of our organization. We welcome also the contributions from our sustaining members including those of Luis Payan (**Syngenta**) who will help ONTA defray the costs of award plaques and booklets. These sustaining members maintain the financial vitality of ONTA and receive the gratitude of ONTA members. The efforts of Johan Desaegeer in raising funds for ONTA are very commendable.

Available funds for the organization amount to US\$ **48,315.69** compared to US\$ **38,825.34** in the previous year (Table 1).

Dues collection via PayPal from ONTA website has been successful and is still under evaluation. The efforts of Larry Duncan in adjusting the ONTA website for receiving PayPal payments are greatly appreciated. Payment by credit cards through ONTA's bank account is still maintained to meet the

needs of many ONTA Sponsors who cannot use PayPal.

Let me thank again the above-mentioned persons for their generous time and loyalty to ONTA. Their detailed work and dedication have strengthened the financial status of our Organization.

Please contact me anytime if you need more explanation concerning this report.

Respectfully submitted,

Renato Inserra
ONTA Treasurer

Table 1. Tabulated Treasurer's Report 2018-2019

Balance Previous Year, 2017-2018	US\$ 38, 825.34
DEPOSITS RECEIVED	
Members dues	US\$ 1,700.36
Sustaining member dues:	
AGBIOME (3/20/19)	US\$ 500.00
CORBANA (9/5/18)	US\$ 1000.00
CORTEVA AGRISCIENCE (6/17/19)	US\$ 5000.00
DESEAGER JOHAN (5/23/19)	US\$ 500.00
E-NEMA (3/17/19)	US\$ 500.00
FMC (4/1/19)	US\$ 500.00
MARRONE BIO INNOV. (6/4/19)	US\$ 1000.0
Donation for ONTA Foundation	US\$ 220.00
<i>FUNDS FROM 2018 ONTA MEETING IN AREQUIPA, PERU PayPal (5,000+4,300+550</i>	US\$ 9850.00
TOTAL DEPOSITS	US\$ 20,770.36
EXPENSES INCURRED	
Credit card processing fees	US\$ 1,139.55
<i>Nematropica</i>	
Vol. 48 (2) 2018	US\$ 1,855.00
Vol. 49 (1) 2019 (Partial)	US\$ 1,465.00
Incorporation fees 2019	US\$ 61.25
Award Plaques Arequipa 2018	US\$ 428.20
Award Booklet + Plaques Costa Rica (F. Robinson)	US\$ 630.05
Bank charges for wire transfer from CORBANA	US\$ 16.00
ONTA website modifications, (Andrew Persaud):	
US\$ 775 (Nov. 2018) + US\$ 1,350 (Mar. 2019)	US\$ 2,125.00
Transfer to ONTA Foundation	US\$ 220.00
Bank cost for booklets of checks	US\$ 103.21
Cost of office supplies incoming Secretary	US\$ 40.95
<i>Refunded registration payment to C. Wiggins (US\$ 537) and reimbursement of expenses incurred by Julia Meredith (US\$ 1,063.79; US\$, 1,350.68) and Carolina Cedano (US\$ 244.33) to finalize the financial settlement with on-site organizers of the ONTA Meeting in Arequipa, Peru</i>	US\$ 3,195.80
TOTAL EXPENSES	US\$ 11,280.01
BALANCE July 24, 2018	US\$ 48,315.69

Balance reflects US\$ 9,490.35 increase over last year's funds of US\$ 38,825.34.

Business Manager Report (July 2018-July 2019)

Total formatting charges for *Nematropica* (2018) Vol. 48, No. 1 amounted to US\$ 1,875.00. Fifteen manuscripts were published in this issue. The cost for formatting each submitted article was US\$ 120.00. The total cost for the articles published (manuscripts) in this issue amounted to US\$ 1,800.00.

The other cost amounted to US\$ 75.00 (US\$ 1,875.00 – US\$ 1,800.00) reflects the expenses for formatting Table of Contents, front matter and inside cover for *Nematropica*.

Total formatting charges for *Nematropica* (2018) Vol. 48, No. 2 amounted to US\$ 1,855.00. Nine manuscripts and the abstracts of the L ONTA Annual meeting, 19-23 August, 2018, Arequipa, Peru, were published in this issue. The cost for formatting each submitted article was US\$ 120.00. The total cost for the articles published (manuscripts) in this issue amounted to US\$ 1,080.00.

The other cost amounted to US\$ 775.00 (US\$1,855.00 – US\$1,080.00) reflects the expenses for formatting and edits to abstracts of the L ONTA Annual meeting, 2018, Arequipa, Peru (US\$ 700.00), formatting and edits of the Table of Contents, and front cover for *Nematropica*.

The total costs of *Nematropica* (2018) Vol. 48, Nos. 1 & 2 amounted US\$ 3,730.00 (US\$ 1,875.00 + US\$ 1, 855.00).

The partial formatting charges for *Nematropica* (2019) Vol. 49, No. 1 amounted to US\$ 1,225.00. Ten manuscripts have been formatted to be published in this issue. The cost for formatting each submitted article was US\$ 120.00. The partial cost for the articles (manuscripts) to be published in this issue amounted to US\$ 1,200.00.

The other partial cost amounted to US\$ 25.00 (US\$ 1,225.00 – US\$ 1,200.00) reflects the expenses for a corrigendum for the MS#701, Vol. 48; No.1.

The Business manager received a

donation of US\$ 500.00 from FMC Agricultural Solutions concerning its Sustaining memberships' annual dues. We are greatly appreciated for its support.

Should any ONTA member or contributor have any questions, comments, or suggestions, please don't hesitate to contact me.

Respectfully submitted,

Dr Janete A. Brito

Business Manager, *Nematropica* – ONTA

Nematropica EIC Report

Two issues of Volume 48 were published in July 2018 and in mid-January 2019. Issue 1 contained 15 research articles and reports. Issue 2 contained 9 research articles and reports as well as the abstracts of the 2018 meeting. We continue an intensive edit of each article (at submission, after author revision, after first formatting, and then at final copy) to ensure as few errors as possible in the final paper. We have encountered difficulties in having continual publication because of the Florida platform we publish on. Thanks are given to our Copy Editor, Ms. Cathy Howard, for her good work and commitment to the journal. Thanks are also given to reviewers for their efforts on the manuscripts.

Brent Sipes, EIC

Honors and Awards Committee Report

As recommended in the ONTA Operations Manual, a first call for awards proposals was kindly sent by Past President Deb Neher to the membership by electronic mail, on 15 April 2019, with a second call published in the April Newsletter by Rosa Manzanilla, released on May 1. Honors and Awards Committee members also were encouraged to propose awards as they are among the most highly

qualified persons to do so within ONTA. Proposals were carefully considered by all Honors and Awards Members, and unanimous agreement was achieved via discussion and voting by all members on 12 June 2019. On 12 June, the Honors and Awards Committee's recommendations were forwarded to President McGawley, and within 2 days approval of the proposed awards was received from Dr McGawley and the Executive Committee.

The 2019 ONTA Awards include an appreciation plaque presented to the **Chair, Fabio Chaverri**, of the **Local Arrangements Committee (LAC)** listing him and the 10 other LAC members: **Mario Araya, Roy Artavia, Marian Bermúdez, Alejandro Esquivel, Lorena Flores, Danny Humphreys, Walter Peraza, Ingrid Varela, Randall Vargas and Mainor Rojas**, in appreciation of their contributions, with each also receiving a separate Certificate of Appreciation with the ONTA logo. Four plaques were also prepared for local sponsors: The Costa Rica Association of Plant Pathology Professionals (APEP) – Gold Sponsor, El Colono Agropecuario S.A./Bayer (Gold Sponsor), the Costa Rican Coffee Institute (ICafe), and the National Banana Corporation (Corbana). **Honorary Memberships** were bestowed on **Dr Janete Andrade de Brito** and **Dr Ignacio Cid del Prado** for their many years of continued contributions to ONTA and the science of nematology. **Dr Cid del Prado** also received the **Extraordinary Service In Nematology Award** in recognition of his 50 years of excellence in teaching and research, and outstanding contributions to the science of nematology. A **Past President's Award** plaque was made for presentation to **Dr Edward McGawley**. Further, preapproval was obtained from the Honors and Awards Committee and the Executive Committee for **Dr Edward McGawley** to receive the **Honorary Member Award in 2020** at the joint meeting of ONTA with the International Federation of Nematology Societies in Antibes, France with the aim of presenting that award at a formal setting along with an

attractive bilingual biography with portrait distributed to attendees at the 2020 Annual ONTA Business Meeting in Antibes. That plaque and the one to be presented to **outgoing President Martín Delgado in Antibes in 2020** have already been made and Dr Larry Duncan has kindly agreed to hold them till the 2020 meeting.

The Chair of the Honors and Awards Committee found the committee, as last year, to be dedicated, helpful and prompt in responding to requests for input, with special gratitude to **Dr Erwin Aballay, Dr Ignacio Cid del Prado** and **Dr Rosa Manzanilla** (not on the committee) for help with biography translations. Their work facilitated getting 11 plaques made and 100 banquet booklets written, translated, edited, checked by awardees, formatted, bound and shipped from Texas en route to Florida within 2 weeks after obtaining Executive Committee approval. The booklet includes attractive colored logos of four local sponsors, kindly provided by **LAC Chair Fabio Chaverri**, and all sustaining members on the back cover (kindly confirmed by **Chair Johan Desaegeer**), with an two large logos inside for sustaining members providing the biggest donations.

I reiterate two recommendations I gave in 2018, and add two more for the Executive Committee to consider:

- . 1) Continue to address our backlog in deserving honorary members by awarding Honorary Membership more frequently in the near future than on average during the last 20 years.
- . 2) Draft and approve qualifications and Honors and Awards Committee procedures to be included in the Operations Manual for bestowing a generic industry award (re-namable as appropriate) so that proposals for that award can be solicited and evaluated concurrently with proposals for all other awards, facilitating bestowal of that award with the same rigor and stature as other ONTA awards, in the

event that any sustaining member in the future should decide it wishes to bestow an industry award at an upcoming ONTA meeting.

- . 3) Guide the evolution of the membership of the Honors and Awards Committee so as to include primarily members who already have received the more prestigious of the ONTA Awards (Honorary Membership, Distinguished Service Award, and Extraordinary Service in Nematology Award) to facilitate selection of deserving awardees who might otherwise be reluctant to propose or support themselves for awards they richly merit.
- . 4) In view of the poor response to calls for awards proposals the last two years, modify the Operations Manual so that the guidelines for the Chair of this committee stipulates at least two rather than one call for awards proposals by mail (or email) in addition to the one in the spring newsletter, and if the committee has not been formed and confirmed by the end of October, make it incumbent upon the President to personally send out that call. Better participation by the ONTA membership is needed in this process.

Submitted by Forest Robinson

Nominations Committee Report

As chair of the ONTA Nomination Committee I am very pleased to report that M.Sc. Fabio Chaverri Fonseca and Dr Fahiem EL-Borai Kora accepted their nomination as candidates for the Vice-Presidency election. Drs Marisol Quintanilla and Maria de Lourdes Mendes also kindly accepted to participate in the election of the new ONTA Secretary. Results of both

elections will be given at the ONTA meeting in San José, Costa Rica (21-15 July 2019).

On behalf of the Nomination Committee, I would like to thank and praise Fabio, Faheim, Marisol and Maria for their enthusiastic commitment to participate in the ONTA elections for 2019.

I especially would like to thank Drs Julia Meredith (acting Secretary) and Deborah Neher (past President) for their help in organizing the elections and sent the ballots to ONTA members. Thanks also to EC members for their hard work and commitment to our organization during 2018 and 2019.

Kind regards,

Rosa H. Manzanilla-López

Newsletter Report

Two issues of the ONTA Newsletter [Vol. 48 (2) and Vol. 49 (1)] were prepared and posted on the ONTA website (<http://www.ontaweb.org>) for access by ONTA members. Volumes 48 (2) and 49 (1) were posted in December (2018) and May (2019), respectively.

Rosa H. Manzanilla-López

Newsletter Editor

Website Committee Report

Since the meeting in Peru last year, the ONTA webpage got a facelift designed by Andrew Persaud, the webpage technician. A substantial portion of the information on the page (honors/awards, Nematopica issues, etc.) was updated. Andrew also worked with Julia Meredith to install a new membership list and to configure PayPal to accept dues and registration payments.

Respectfully submitted,

Larry Duncan

Local Arrangements Committee Report

The 51th ONTA annual meeting was coordinated by a Local Committee Arrangements, with the support of distinguished Nematologists and related specialists in Costa Rica.

Main objective of the meeting: Create a space to disseminate the results of investigations carried out in public and private institutions in the area of nematology, with emphasis in the Tropical American region, to promote national and international cooperation in the study of nematodes and its integrated management options, and allows to analyze the impacts of these organisms in agricultural production and analyze new trends of mitigation options.

1) Local Arrangements Committee (LAC).

The LAC-Costa Rica ONTA 2019, started working before the ONTA 2018 Annual Meeting (Arequipa, Peru), preparing and selecting the hotel and field trip options. At Arequipa 2018, LAC-Costa Rica presented a promotional video and a book marker to disseminate the information.

After ONTA 2018, LAC-Costa Rica held 15 official meetings and four field trips, and the president of LAC (Fabio Chaverri) and Alejandro Esquivel (LAC member) maintained contact with the President (Dr Ed McGawley) and the Vice President of ONTA (Dr Martín Delgado) to report on the progress of the next Annual Meeting.

Organizing Committee

- M.Sc. Fabio Chaverri. IRET–Universidad Nacional (**President**)
- Ph.D. Danny Humphreys. Universidad de Costa Rica (**President Scientific Committee**)
- M.Sc. Walter Peraza. ECA. Universidad Nacional
- M.Sc. Alejandro Esquivel. Accredited participant ECA/IRET. Universidad Nacional
- M.Sc. Lorena Flores. Universidad de Costa Rica
- Eng. Ingrid Varela. Instituto Tecnológico de Costa Rica
- Eng. Randall Vargas. El Colono Agropecuario
- Dr Mario Araya. AMVAC Chemical. Costa Rica

Support Staff

- Eng. Roy Artavia. ECA – Universidad Nacional
- Nuvia Ramírez, Marian Bermúdez, Marian Barrantes, José Navarro from COMEXP (Logistics advisor)

Field trip advisors

- Eng. Mainor Rojas and Eng. David Ramírez – ICAFE
- Eng. Carlos Mario Rodríguez – Starbucks Costa Rica

2) Names of the institutions and companies organizing and/or providing support for the meeting.

Organizing institutions and companies

- Universidad Nacional de Costa Rica (main local host) and FUNDAUNA

- Universidad de Costa Rica
- Instituto Tecnológico de Costa Rica
- ICAFE Instituto del Café de Costa Rica

Institutions and companies that collaborate with ONTA 2019 (Sponsors)

- APEP (La Asociación de Profesionales en Enfermedades de Plantas de Costa Rica) GOLD SPONSOR
- El Colono Agropecuario S.A./Bayer GOLD SPONSOR (Fig. 17A)
- CORTEVA (ONTA Sustaining member)
- CORBANA Corporación Bananera Nacional Costa Rica
- Opmided S.A.
- G y H Steinvorth Limitada
- Laboratorios Doctor Obregón (Fig. 17B)

3) Number of payments received (July 3th, 2019)

- a. 55 Participants
- b. 11 Students
- c. 5 accompanying persons

4) Number of abstracts received and reviewed:

- a. 81 (July 3th, 2019)

5) Congress General Program

- a. Welcome cocktail
- b. Two magisterial conferences
- c. Five symposiums (Nematode Ecology and Diversity, Biological Control, Chemical and Integrated Management of Nematodes, Diversity and Systematics, Genomics)
- d. Oral Presentations
- e. Poster Session
- f. Stand Area
- g. ONTA business meeting
- h. Presidential Reception (by invitation only)
- i. Awards Ceremony (Poster Competition) and Recognitions
- j. Gala Dinner
- k. Field Trip to the Alsacia Farm (coffee, nematode management)

6) Targets of the Congress:

- a. Provide a hotel (Wyndham San José Herradura Hotel & Convention Center) with the following characteristics:
 - i. Affordable prices for rooms and meeting place.
 - ii. close to the main airport of Costa Rica
 - iii. that can handle at least 200 people
 - iv. that can offer a space for lunch and coffee breaks (specially to avoid expending too much time looking for lunch places)
- b. Implement and evaluate the use of information and communication technologies for:
 - i. Meeting promotion: use of email, web page www.onta2019.com , and Spanish Facebook account

- ii. Online payments: administration by the Foundation of the National University (FUNDAUNA)
 - iii. Poster presentation: use of digital format
 - iv. Implement simultaneous translation: so the participant does not have to make pauses during his presentation. The translation was expected to respect the content, the important details and the emphasis on key ideas, in order to be able to really transmit the message of the speaker to the audience within the times according to the event program.
- c. Strengthen the interest of nematology in the agricultural sector of Costa Rica: support for the country's banana and coffee sector was achieved.
 - d. Involve at least three public universities in Costa Rica: Universidad Nacional, Universidad de Costa Rica e Instituto Tecnológico de Costa Rica.
 - e. Involve the main companies that sell and develop chemical and non-chemical methods for the control of plant-parasitic nematodes in Costa Rica and the Tropical American region
 - f. Promote and assist young researchers and students interested in nematology
 - g. Provide a strategic place for the field trip (Alsacia Coffee / Starbucks Costa Rica / ICAFE), to show a general view of nematology research and local agricultural systems.
 - h. Evaluate the outsourcing option for logistic support: COMEXP

7) Targets to achieve (July 3rd 2019)

- a. Increase the number of registration or sponsors payments to cover the remaining costs, specially to cover 6 grants for local students (Cost of US\$ 1800)
- b. Final details of the field trip.
 - i. Nematology research examples in coffee plantations.
 - ii. Catering service for the field trip lunch.
- c. Logistics for local payments with FUNDAUNA (cash, data phone, receipts)
- d. Design a digital survey focus on evaluate level of satisfaction of participants, to establish improvement opportunities for the next ONTA meetings.



Fig. 17A: Gold sponsor



Fig. 17B Dr Obregón

From the ONTA Past President



Fig. 18. Ed McGawley

Letter sent to ONTA members (01 August 2019)

Dear fellow members of ONTA,

I hope you agree that the 2019 ONTA meeting in Costa Rica was a great success in providing a perfect atmosphere for the exchange of nematological information, social interaction with colleagues and students and an enhanced appreciation of the agriculture and ecological richness of the San Jose area. The local arrangements committee did a truly outstanding job of organizing an attractive and informative website and providing an excellent venue for the meeting at the Wyndham Herradura Hotel and Convention Center.

One of the last, but VERY IMPORTANT, items on the program was the membership business meeting. If you were unable to attend this meeting, let me summarize highlights of the discussion.

First, we acknowledged and welcomed Martin Delgado, Fabio Chaverri and Maria Mendes as President, Vice-President and Secretary, respectively for 2019-2020. Furthermore, Drs Inga Zasada and Louise-Marie Dandurand graciously agreed to assume the position of Co-Editor-in-Chief of our journal, *Nematropica* effective in January 2020.

Second, I emphasized that our website and journal are the two elements that serve as

the “windows of the world” for our society. Having an attractive, informative and engaging website and a journal highlighting current research findings in nematology posted in a timely manner are essential for growth, peer-awareness and respect for our society within the plant protection community. Posting research papers to the website as soon as they are accepted rather than just twice a year as formal journal editions will eliminate formal publication delays. Additionally, we need volunteers to form a website committee to aid Dr Larry Duncan to collect and post current information that is attractive and easily accessed by members.

Third, I suggest we consider having the Rodrigo Rodríguez-Kabana Student Competition include BOTH poster and oral competition elements. I suggest this modification for the sole benefit and training of the students. Several indicated to me that trying to explain their work in a very crowded and noisy environment to a handful of judges was a less than optimum experience. Additionally, I suggest that it is a rare occasion when a student applying for a job is asked to set his/her poster and explain the data rather than giving a traditional oral presentation to an attentive and quieted audience.

Fourth, I purpose a possibly controversial point of discussion involves making ENGLISH the official and required language of *Nematropica*. That 93% of scientific research papers published are in English, makes the point that science authors, and especially the student researchers of the future, must have a working knowledge of English not only for publication activities BUT ALSO to access the wealth of scientific information published in English.

Lastly, I suggest we consider establishing an ONTA-sponsored apprentice program with oversight by our new Education Committee chaired by Dr Ignacio Cid del Prado Vera. Summer internships, with funding from both industry and home institutions,

could place senior-level undergraduates or masters level graduate students from North America into nematology programs in South America and *vice versa* for time periods ranging from 3 weeks to 3 months. Students gain valuable experience and industry funders gain potential new employees with experience in basic and applied nematology. An intern program such as this, in collaboration with Zamorano University has worked marvellously in the Plant Pathology Department at LSU for the last 7 years.

I conclude that time is a precious commodity for us all. Tasks including grant proposal writing, student teaching and advising and the ever-increasing day-to-day paperwork obligations pull us farther and farther away from our microscopes, laboratories and field activities. Regardless of time constraints, a flourishing organization requires input and volunteerism from the membership, not just the officers and committees. So, please agree to review a manuscript when requested, join the new Education Committee, help solicit funds to support the organization, and practice writing in English.

In closing, I say to each of you that it has been a pleasure to serve as your President

for the last year. I look forward to seeing you next year in Antibes, France at the 7th ICN meeting. Please consider these points I have raised and send your thoughts to me or to any other member of the Executive Committee (EC). EC members and their email addresses are: **President Martin Delgado** (mdelgado@upao.edu.pe), **Vice-President Fabio Chaverri** (fabio.chaverri.fonseca@una.ac.cr), **Secretary Maria Mendes** (mlmendes@ufl.edu), **Treasurer Renato Inserra** (renato.inserra@freshfromflorida.com) and **Business Mgr. Janete Brito** (janetebrito@freshfromflorida.com).

Edward C. McGawley



ONTA OFFICERS FACING NEW DUTIES

From the ONTA President



Fig. 19. Martín Augusto Delgado Junchaya

Hello my dear ONTA-friends,

More than 100 days after the 51st ONTA Annual Meeting, in San José, Costa Rica, I am pleased to greet you warmly. I regretted not being able to participate physically during the development of the Meeting, because I had to remain at rest by medical prescription. I could only stay for a moment during the final ceremony.

Today I want to express my immense gratitude for having granted myself the privilege of being the President of ONTA. When, in 2012 in Cancun (Mexico) ONTA Meeting, I had the honor of making my first presentation, I indicated that my doctoral training was not as a nematologist but as a plant pathologist and, therefore, I never dreamed that one day I could become the President of an important Organization of nematologists as it is ONTA.

Carolina and I have had the honor of working together, under the leadership of Ed, in the organization of ONTA-Arequipa, Peru, during the past annual meeting (2018) and this time, in Costa Rica, Fabio and his brilliant

team have organized the event very rigorously in important details offering us, in addition, an extraordinary atmosphere of cordiality for the development of the 51st Meeting.

The interpersonal and affectionate relationship between us, which is cultivated by those who have constituted the first generations of nematologists and are still in ONTA, is already an inherent part of the annual meetings and we must congratulate ourselves for having achieved in this 52 years of institutional life such type of human interaction, which is not common in other international institutions. This image transcends the new generations of nematologists, especially in the Americas, with a deep pedagogical content which magnifies the academy. Such an achievement is the result of the efforts of the forgers and we must continue it.

I believe that the permanent scientific search, which is so well accredited in the publications of our members, must always remain linked to that warm and compatible interaction that makes our annual meetings pleasantly remembered.

My thanks to the members who have the responsibility to coordinate the actions for our participation in the next Meeting in Antibes, France, I refer in a special way to Larry, also my recognition to Ed for his final message, to Mary for the large report on what was discussed at the Meeting of the Executive Committee ONTA 2019 (Costa Rica) that has sent us, to Rosa for her good job with the Newsletter and the whole team that constitutes the institutional pillar of ONTA.

With my best wishes to meet soon at the 52nd Meeting of ONTA during the 7th International Congress of Nematology (ICN-2020).

Best regards,
Martín

ONTA OFFICERS FACING NEW DUTIES (Cont.)

From the ONTA Vice-President



Fig. 20. Fabio Chaverri Fonseca

Dear ONTA members,

I hope you are all very well and I wish you many successes in your work and personal life for the next year 2020. First, I would like to thank the members of the ONTA 2019 Organizing Committee in Costa Rica, the success of this activity was due to the selfless work of each one of them. In addition, thank all ONTA members who in one way or another supported us in organizing this meeting (Fig. 21).

This 2019 ONTA Annual Meeting took place between July 21 and 25, 2019, in the form of a Scientific Congress, and allowed to know the work carried out by world-renowned nematologists in areas of basic research as applied, oriented to the sustainable management of productive systems, development of alternatives and many other topics of interest.

Within the framework of internationalization and academic exchange sought by ONTA, these kinds of academic engagement activities represent an opportunity to strengthen collaboration among all ONTA members, and I hope that it has favored the creation of opportunities to develop joint research projects and generate an openness between institutions that may even in the future facilitate the exchange of undergraduate and graduate students.

Just to have a general idea, 148 people from 16 different countries attended our last ONTA 2019 meeting (Figs 22-23, Table 2).



Fig 21. A: Opening ceremony



Fig. 21. B: Field visit

ONTA OFFICERS FACING NEW DUTIES (Cont.)

Table 2. Total number of participants attending the 51 ONTA Annual Meeting in Costa Rica.

Participants (ONTA members, Non-members, Stands, one day meeting)	125
Students	10
Accompanying persons	13
Total	148

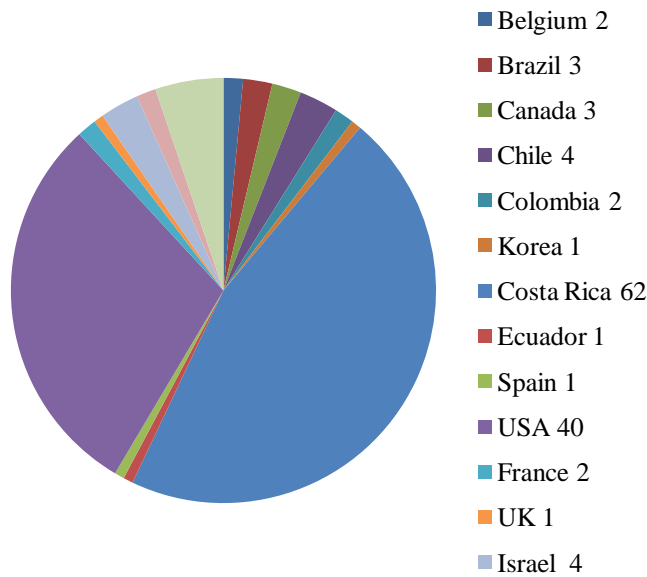


Fig. 22. Attendants per country to the 51 ONTA Annual Meeting in Costa Rica



Fig. 23. A: From right to left (Benjamin Mimee, Rosa Manzanilla, Ma. Gabriela Medina, Kirsten Powers, Inga Zasada, Tom Powers, Frida Decraemer, Hugo Mejía, Sergei Subbotin, Paula Agudelo. **B:** Costa Rican hostess wearing traditional costume.

Thank you Costa Rica!

ONTA OFFICERS FACING NEW DUTIES (Cont.)



Fig. 24. Maria Mendes



Fig.25. Louise Marie Dandurand and Inga Zasada

We are pleased to welcome our new Officers Maria Mendes (Secretary) and *Nematropica* Co-editor-in-Chief Louise Dandurand and Inga Zasada.

ONTA MEMBERS NEWS

Cuba

CENSA's Fiftieth anniversary

The National Center for Agricultural Health (CENSA) was created on January 14, 1969 and its current facilities were inaugurated on September 1, 1980. It is inserted into a group of scientific, productive and educational institutions, which form the Scientific-Teaching Complex of the Mayabeque province. CENSA is a center of Science, Technology and Innovation that in its 50 years of existence has contributed to the sustainable development of animal, plant and human health, the execution of basic projects, technological innovation, academic training, product development and specialized technical scientific services, under the approach of **UNA SALUD (ONE HEALTH)**. CENSA research is currently organized in more than 30 national and international projects that impact food

production, health and defense of the country. CENSA develops advanced technologies and provides technical scientific services in the detection and diagnosis of emerging, reemerging and cross-borders diseases and pests in animals and plants. That is why CENSA works together with the Ministry of Agriculture and the General Staff of Civil Defense in the early warning of the country, early diagnosis and rapid response, to any health emergency. During the year 2019, CENSA celebrates its 50th Anniversary with a large number of activities, among which the scientific ones stood out. They included the **III Seminar on Agricultural Sanitation (SISA 2019)** May 6-10 that hosted the **XX Annual Meeting of the Latin American Association of Phytopathology (ALF)** and the **American Society of Phytopathology-Caribbean Division (APS-CD) meeting**. The seminar was held in the **Hotel Meliá Marina, Varadero** (Fig. 26) with the attendance of more than one hundred specialists from North

and South America, Europe and Africa countries. The III SISA also hosted the **Annual Meeting of the Microbial Uptakes for Sustainable Management of Major Banana Pests and Diseases MUSA H2020 PROJECT 727624** (Fig 26B), and the **Cuba-United States Bilateral Meeting**, with the participation of numerous nematologists. The **Agricultural Nematology Laboratory of CENSA** was founded in 1984 and from that date to the present has contributed to the

training of undergraduate and postgraduate students and producers from Cuba, El Salvador, Haiti, Ecuador, Venezuela and Mexico, among other countries. CENSA has developed activities within the framework of projects with Sweden, United Kingdom, Mexico, Italy, Venezuela, Switzerland, Spain, Costa Rica, Kenya, among other countries. CENSA was the host and Chair of the Local Arrangements Committee for the ONTA Annual Meetings of 2001 and 2015.



Fig. 26. A: Hotel Meliá Marina Varadero; B: MUSA Project meeting; C: From Right to left: Belkis Peteira, Sarah Sánchez-Moreno and Mayra Rodríguez; D: Hotel El Nacional, Habana.

This year is also the Fifth Centenary of the Foundation of the Habana City. Congratulations to our ONTA Cuban colleagues!

ONTA MEMBERS NEWS

Microbial Uptakes for Sustainable Management of Major Banana Pests and Diseases MUSA H2020 PROJECT 727624

The second annual meeting of the MUSA Project was held within the frame of the III International Seminar of agricultural sanitation (SISA 2019) in Varadero, Cuba (6-8 May 2019). Oral presentations on project progress were given by participants from CENSA (Cuba), CSIC (Spain), CNR (Italy), COPLACA (Canary Islands), University of Alicante (Spain), University of Leuven (Belgium), Earth University (Costa Rica), and Real IIPM (Kenya). A field visit was included to two farms,

where MUSA experiments are carried out with the participation of agriculture professionals, farm cooperatives and participative farmers. We had the opportunity to talk to Santa Elena 1 (Nueva Paz Municipality) and El Mulato (San José de Las Lajas Municipality) growers and also researchers from the Center for Biotechnology production of banana and plantain *in vitro* plantlets (Mayabeque) premises; all of them located in the Mayabeque province. The visit was organized by CENSA but it had to be extended to III SISA delegates due to great interest showed in this activity that was originally planned only for MUSA participants.



Fig. 27. A: Santa Elena 1 Farm banana production system; B: Santa Elena 1 Farm Cooperative members Yuleidis Hernández Pérez and Alexic Pérez Díaz; C: El Mulato Farm. From left to right: Mayra Rodríguez with participative farmers Idarmis Castillo and Joel Hernández; D: Center for technology production of banana and plantain *in vitro* plantlets.

ONTA MEMBERS NEWS

Mexico

A pre-congress course-workshop “Phytopathogenic nematode of importance in Mexico”, was taught on August 24 and 25 on the premises of the Institute of Agricultural and Forestry Research (Instituto de Investigaciones Agropecuarias y Forestales, IIAF) of the Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), within the framework of the XXI International Congress / XLVI National Congress of the Mexican Society of Phytopathology, which was hosted by UMSNH in Morelia, Michoacán, Mexico.

The course-workshop (Fig. 28) was organized in conjunction with the Network of Plant Nematologists of Mexico (RedNeMex) and coordinated by Drs **Angel Ramírez Suárez** (National Service for Agri-Food Health, Safety and Quality, CENASICA) and **Alejandro Tovar Soto** (National School of Biological Sciences of the National Polytechnic Institute of Mexico ENCB-IPN). The course-workshop was well attended, thus demonstrating congress delegates interest in different aspects of plant pathogenic nematodes. A large group of enthusiastic undergraduate and postgraduate students attended the course-workshop. They came from different higher education and research institutions, i.e. UMSNH, the Autonomous University of Sinaloa, the Technological

Institute of Tlajomulco de Zúñiga (Jalisco), ENCB-IPN, as well as some professors from the Autonomous University of the State of Mexico. There was also attendance of professionals and technical advisors from different companies dedicated to Phytosanitation, e.g. Natural Technologies International Association, CIDAM, Fertilab, Altus Biopharm, Santi-Agro, Driscolls, among others. Invited speakers from various institutions addressed topics of great interest including: *The economic impact of phytopathogenic nematodes in agriculture*, *Nematodes biology and symptomatology*, *Diagnosis and importance of reference materials*, *Quarantined nematode species for Mexico*, *The root-knot (*Meloidogyne spp.*) and false root-knot nematode (*Nacobbus aberrans*)*, *The reniform nematode (*Rotylenchulus reniformis*) and its importance in Mexico*, *Impact of phytopathogenic nematodes in berries*, and the *Integration of tools for the management of nematodes in agriculture*. A practical root staining session was conducted to identify genera of sedentary endoparasitic nematodes, i.e. *Meloidogyne* and *Nacobbus*. We would like to give a very special thank you to the local organizer committee of the Mexican Society of Phytopathology headed by Dr Sylvia Fernández Pavía (UMSNH), local organizers, students and other collaborators who provided us with the necessary support at all times.



Fig. 28. A, B: Course-workshop participants; C: Laboratory session.

ONTA MEMBERS NEWS (Cont.)

USA

Congratulations to Don Dickson on his retirement!



Fig. 29. Janete and Don

Retirement of Don W. Dickson, Nematology Professor, University of Florida

Effective **30 June 2019**, Don W. Dickson, began a new life phase, retirement. Dickson began his career at the University of Florida in 1968 as a plant pathologist responsible for disease management on agronomic crops. Shortly thereafter an opportunity came open

for him to return to his true passion, nematology. He assumed duties for extension nematology where his responsibilities included nematode management on all crops grown in the great state of Florida. Again, another opportunity opened for him to assume duties for research and teaching nematology. This is the role where he spent the majority of his professional career. Don’s love for nematology is contagious and inspiring. He really enjoyed attending the ONTA meeting and meeting “old friends” and making new ones. Dickson directed numerous PhD and MS students and hosted numerous visiting scientists from the United States and around the world and taught 100s of student’s plant nematology. Don and his wife Janete (Fig. 29), really enjoyed having students at their house to celebrate some of their favorite holidays such as Christmas, Thanksgiving and 4th July. He did step away from this role for a short period to assume duties as pesticide coordinator for Florida. Don is currently an emeritus professor at the University of Florida.

Janete Brito



Fig. 30. Don and his family



Fig. 31. Don and his students

ONTA MEMBERS NEWS (Cont.)

Across the Atlantic

**5th Symposium of Potato Cyst Nematode Management, 10-11th September 2019
Harper Adams University, Newport, UK**

Potato cyst nematodes (PCN) are intractable, quarantine pests of potatoes in temperate and tropical regions. Their feeding damage on the roots of potato can cause yield losses of up to 80%. The 5th Symposium of PCN Management, held at Harper Adams University (HAU), was attended by 65 delegates from a wide range of countries including Kenya, Indonesia, the US, Holland, Portugal and Belgium. The aim of the conference was to discuss new research and initiatives concerned with the biology and management of PCN.

The programme covered an excellent variety of topics including biology, modelling, distribution, novel control strategies, such as trap cropping, and cultivar resistance.

Discussions were lively and engaging, and often continued through coffee breaks and mealtimes. During the conference, we remembered our former colleague, the late Dr Pat Haydock, particularly at the conclusion, where student prizes were awarded in his name. The platform prize was awarded to Ulrike Gartner of the James Hutton Institute for her excellent talk on the identification of resistance from *Solanum spegazzinii*. Morven Anderson, M.Sc. student at HAU was the recipient of the prize for the best poster. I should like to thank the AAB for all their support with the organisation, the Short Course and Conference Office at HAU, Agrico for their sponsorship and CABI for providing a student prize.

Matthew Back, Reader in Plant Nematology and Convenor of the AAB Nematology Group

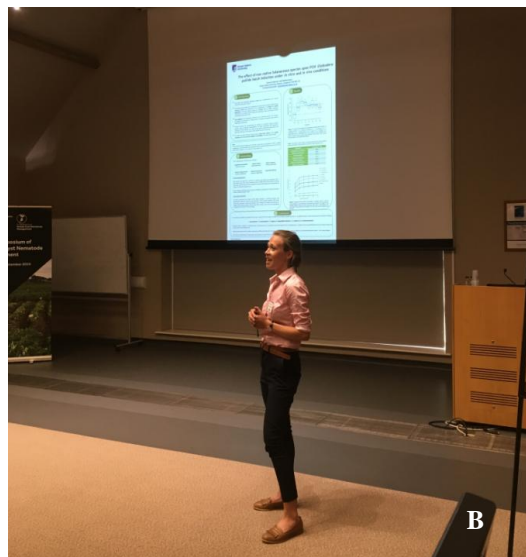
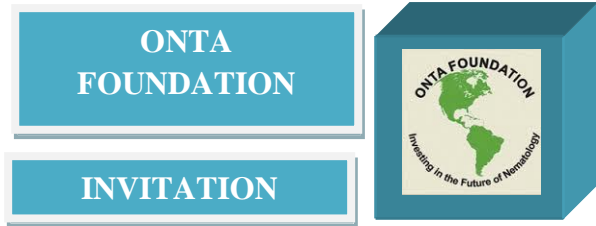


Fig. 32. A: Professor Thomas Been (Wageningen Research) discusses PCN decline; B: Morven Anderson (HAU) presents her 'flash' poster presentation

ONTA GALLERY



Fig. 33. ONTA-SBN Joint Meeting in Maceio, Brazil (2009). Back row (from left to right): Patricia Stock, Luis Payán, Paula Agudelo, Patrick Quénehervé, Larry Duncan, Marcelo Doucet. Front row (from right to left): Rodrigo Rodríguez-Kábana, Jenny Escobar, Janete Brito, Paola Lax, Rosa H. Manzanilla, Emma Zavaleta.



Get busy! ONTA Foundation, Inc. status is clear and high. Open your wings and take a flight!

Dear ONTA member,

ONTA Foundation is ready for a campaign to request donations and expand its contributor base in a big way. ONTA Foundation can receive funds through several means: 1) checks made out to the ONTA Foundation and mailed to Janete Brito; 2) credit card, same information required as for membership payment; 3) wire transfer. Janete Brito and

Renato Inserra have full codes for wiring if requested.

Please give generously to support the activities and projects of the ONTA Foundation.



Fig. 34. Janete Brito

**ONTA ACTIVE MEMBERSHIP
UPDATING**

Dear ONTA Member,

A list of active members with their e-mail addresses and countries has been posted on the ONTA website (<http://www.ontaweb.org/onta-membership-directory/>). Please verify your membership status on the posted list. Contact Julia Meredith (jmeredith@cox.net) if your membership status is not updated.

Thanks,

Julia Meredith
ONTA Acting Secretary



Fig. 35. Julia Meredith

ONTA NEWSLETTER INVITATION

Dear ONTA member,

Do you have a passion for nematodes and nematology? Would you like to share nematology news with our ONTA members? If so, welcome aboard!

We would like to extend to you a warm invitation to send or share information for our next ONTA Newsletter issue.

Please contact us. We are looking forward to hearing from you and to learn about your local nematology events and news.

Thanks,
Rosa

ONTA Newsletter Editor



Fig.36. Rosa H. Manzanilla-López (Varadero, Cuba, 2019)

ACKNOWLEDGEMENTS

The editor would like to thank all ONTA Newsletter contributors for sending and sharing information through the year of 2019. Thanks also to Ed McGawley ONTA's Christmas season cards.

Rosa H. Manzanilla-López
ONTA Newsletter Editor

BOOK REVIEW

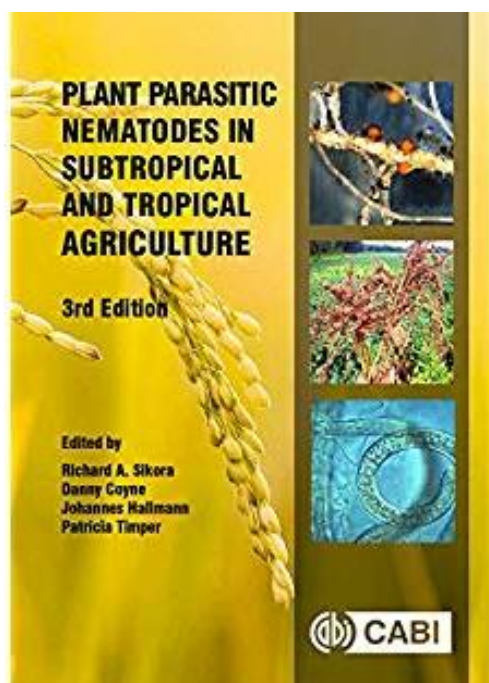


Fig. 37. New edition

RICHARD A. SIKORA, DANNY COYNE, JOHANNES HALLMANN & PATRICIA TIMPER (Eds). *Plant parasitic nematodes in subtropical and tropical agriculture, 3rd edition*. Wallingford, UK, CAB International, 22018, xxi + 876 pp. ISBN: 9781786391247 (hardcover); 9781786391261 (ePub); 9781786391254 (PDF). Price: €195.00, US\$250.00 (hardcover).

You may be asking the obvious question: ‘Is there is a need for a third edition of any plant nematology book?’ I am not aware of any non-taxonomic work that has reached the enviable revisionary status attained by this volume, which is based upon the 2005 second edition edited by Michel Luc, Richard Sikora and John Bridge (and reviewed excellently in this journal by Moens (2006), whose comments remain largely apropos to the third edition). The second edition was a massive update of the 1990 edition edited by the same trio. One indication of the demand for the out-of-print

second edition was immediately revealed when I was asked to prepare this review – if purchased from the usual online book sellers and resellers, prices for the second edition ranged from €719 (new) to €1642 (used). The availability of the third edition has coincided with a decline of a used copy to €710. Interestingly, the 1993 companion-of-sorts volume *Plant parasitic nematodes in temperate agriculture* remains unrevised and can be purchased for €68-€168. The lack of a revision of the temperate volume could be reflected in the statements of Luc *et al.* and Sikora *et al.* that most, if not all, of the major agricultural problems caused by nematodes in temperate countries had been discovered before 2005. Such is not the case in the tropics.

The format of the third edition closely follows that of the previous editions: 18 crop-specific chapters and an overarching chapter on nematode management are preceded by three chapters encompassing general reflections and challenges, identification and

biology, and extraction and detection methodology. Additionally, a new Nematode ecology and soil health chapter reflects the ever-growing awareness of the importance of nonphytophagous nematodes, nematode community ecology, as well as systems-based approaches to pest and pathogen management.

As before, at least two co-authors with expertise in tropical or subtropical nematology have written or revised each chapter. The editors have selected a truly international spectrum of authorities. Over half of the co-authors are new, a fact assuring that a relatively fresh outlook permeates the book. The foreword states that authors were “chosen on the basis of their practical expertise, research work and their understanding of different regions of the world, as well as their experience with a variety of crops and different types of agriculture.” The lattermost quality is particularly important because of the different research needs of subsistence farmers *vs* large operations.

In the first section (Nematology and practical agriculture) of the first chapter (Reflections and challenges), the four editors establish the target and set the tone for the entire book. Indeed, the first half of this chapter could serve as an ethical and moral yet pragmatic compass for any practising plant nematologist. This chapter clearly yet succinctly summarises the challenges and constraints involved in feeding a world in which 1% of the farms control 65% of the agricultural land, yet smallholder farms provide 80% of the world’s food. The differing pest management practices and research needs of these two types of research end-users are summarised. Although the initial context created within this chapter and details within the subsequent smallholder-relevant paragraphs are somewhat pessimistic, the authors eventually segue into optimism: “The challenge is great, but not insurmountable.” The editors next describe the current status and research needs related to subtropical and tropical nematode problems – emerging threats, global spread and quarantine,

diagnostics, establishment of pathogenicity, interactions with other organisms to increase yield losses, climate change, multispecies infections, nematode management and research funding capacity building. Nearly all of these aspects of nematology are more challenging in the tropics. Ending this chapter with a list of 24 challenges faced by tropical nematologists, the editors boldly add two tables that: *i*) describe the current status of 19 aspects of tropical agriculture and 24 aspects of tropical nematology; and *ii*) predict the status of these 43 aspects in 2050 and 2100. This chapter is required reading for any plant nematologist. For the most part, the authors have admirably followed the charge assigned by the editors. The Identification, morphology and biology chapter that follows summarises the rudiments of nematode life cycles and behaviour. Because systematics is a dynamic discipline, many references are new. The genus-by-genus presentation of line drawings in combination with major diagnostic criteria may not sufficiently enable a novice to identify accurately every genus of nematode in a sample but does provide solid fundamentals. The presentation on novel approaches to identification has been expanded, with readers being urged to consult Chapter 4 (Methods for extraction, processing and detection) for a more thorough treatment of contemporary molecular methodology. Although the insertion of the Nematode ecology and soil health chapter between Chapters 2 and 4 may initially strike the reader as peculiar, in reality the line drawings of nematode anteriors in Chapter 3 recall figures in Chapter 2 and are necessary knowledge for anyone attempting to categorise the nematodes in an agroecosystem. Not only does the ecology chapter provide an excellent summary of anthropogenic damage to soil health, as quantified by various ecological indices, but also the authors provide a detailed guide to calculating various nematode community metrics and footprints and properly interpreting them; concrete examples are presented. This rather enjoyable chapter is essential reading for any ecology

novice. All chapters have been solidly updated, and most have been revised substantially – a fact resulting from the energy of chapter co-authors, the vitality of newer contributors, as well as the editors' statement of “the increasing importance of these crops in the tropics”.

For the most part, the 18 crop-specific chapters are organised similarly, beginning with statistics about the importance of each crop, the symptoms caused by the major nematodes afflicting the different crops and, for each nematode, descriptions of diagnostic methods, life cycles, survival strategies, dissemination mechanisms, environmental influences, other hosts, involvement in disease complexes, economic importance and management strategies. The extent of revision does vary somewhat: as stated by the editors, there are very few applied nematologists currently working with some crops in the tropics and subtropics. Some chapters contain long passages of only slightly edited text, with newer information added when available and appropriate. This comment is not a criticism; any author tasked with revision knows that the rewriting of already excellent existing material is inefficient and sometimes counterproductive. Moreover, as time passes, symptomatology and the basics of nematode biology remain relatively unchanged. My only major disappointment resulted from an occasional chapter containing a Conclusions or future prospects section that differed no more than slightly from the corresponding 2005 section. Additionally, the infrequent failure to update decades-old crop production statistics is a minor oversight.

Although the space available for this review precludes a detailed description of the 18 crop-specific chapters, some highlights follow. The coffee and cocoa chapter may be the most extensively revised; its completely rewritten pages include a description of coffee production and cultivation as well as contemporary details about root-knot nematode distribution, biotypes, economic importance, methods of diagnosis and

management. The cereals chapter has also been greatly revised; recent global collaborations have yielded great improvements in nematode identification methodologies and the development of management strategies based upon resistance, chemicals, biologicals or cultural practices. The section on root-knot nematodes of rice contains a more detailed presentation of symptomatology, population dynamics, molecular diagnostics and management. The potato chapter has been thoroughly contemporised and contains much new information on cyst nematode genetic diversity, pathotype virulence and historical spread. The groundnut/peanut chapter now contains excellent descriptions of breeding for root-knot nematode resistance *via* classic and molecular strategies, as well as an interesting section on the involvement of root-knot nematodes in aflatoxin levels in peanut seed. Five pages on grape nematodes have been added to the miscellaneous fruit crop chapter. The rear cover of the book names several chapters that have been significantly revised “where major advances in nematode management have occurred”, changes particularly noticeable in chapters focusing on tropical root and tuber crops, banana and plantain, peanut, food legumes, vegetables, citrus, sugarcane, tobacco and cotton.

Combining the management strategies contained in the 18 crop-specific chapters with the personal experience of the authors, R.A. Sikora and P.A. Roberts provide in the final chapter an overview of integrated management technologies for tropical and subtropical nematodes. They document the transition from control strategies based on the misperception that nematodes can be eradicated, describe the progression toward systems-based management strategies, and enumerate seven forces that have driven nematode research in ten specific directions. The differing needs of subsistence farmers raising food for survival are again contrasted to those of larger operations raising food for the marketplace. Like the first chapter, this is essential reading

for plant nematologists, all of whom should be cognisant of the development of our science, its deficiencies, and its future directions. Detailed descriptions and illustrated examples of many preplant and at-plant management strategies then follow.

As in 2005, the volume ends with an appendix containing a list of the species mentioned in the entire volume and their taxonomic authorities, followed by an index. Owners of the second edition should note that much of the content of its other appendix, the list of nematicides, has been relocated to a table in the integrated management chapter.

To make way for newer content, some older information has necessarily been jettisoned. Some of the deletions are essential or readily justifiable, such as those related to nematicides that are no longer utilised, to nematode species of no more than highly limited importance, or to temperate country research superseded by tropical or subtropical studies. Perhaps the most irritating deletions for users may occur in situations in which well-referenced content in the second edition has been replaced with a third-edition summary referring readers to the second edition in order to locate primary literature references. The deleted section that once detailed the development of nematology in the tropics will also be missed by some nematologists. One solution to the unavoidable problem of deletions (and perhaps providing an interesting marketing strategy) could be for the publisher to provide a PDF of the second edition to anyone who purchases the third edition.

Nearly all of the 23 chapters in this work are meticulously documented; over 5500 literature citations are housed in 220 of the 838 chapter pages. The editors state that the authors have examined “over 10 000 publications on nematodes of subtropical or tropical crops published over the past 12 years”. According to my examination of the literature citations, over 1500 of them (27.3%) are dated 2005 or later. I did not compare the pre-2005 citations in every chapter to those in

the second edition, but one-tenth of the pre-2005 references in a representative sample (five chapters) were new to the 2018 edition. Therefore, approximately one-third of the literature citations in the third edition are new.

Prospective buyers should note that although the second and third editions differ in quantity by only five pages, the third edition is far more comprehensive because of its closer word spacing and its slightly smaller yet highly readable font. Moreover, the new edition is much better illustrated in both quality and quantity. The colour plate section containing 140 colour photographs in the second edition has disappeared; all figures are now at appropriate locations in each chapter, yielding much smoother reading. Three-fourths of the illustrations are new to the third edition and all of them greatly enhance the informative content. With the exception of graphs and line drawings of nematodes, nearly all of the figures are in colour.

Presumably because all chapters (excluding the new ecology chapter) include substantial amounts of text from corresponding chapters in the second edition, each chapter states in a footnote the names of the corresponding chapter co-authors from the second edition, whose chapters similarly acknowledged the first edition’s contributors. The consequence is that the third edition does not include the name of any first edition contributor who did not contribute to the second edition. Because the omitted co-authors undoubtedly composed substantial amounts of text printed in 2018, let us acknowledge the following: Pierre Baujard, Eli Cohn, Parvis Jatala, Janet E. Machon, Norman A. Minton, Caspar Netscher, Sam L.J. Page, John A. Shepherd, Ponniah Sivapalan, Carlos Sosa-Moss and Gopal Swarup.

As expected, the staff of CAB International have printed a first-class volume from the standpoint of production. A list of the few technical errors I noticed has been sent to the four editors to forestall inclusion in any fourth edition.

Overall, the third edition of *Plant parasitic nematodes in subtropical and tropical agriculture* is a necessary revision, one that has a well-deserved spot in the library of any plant nematologist. The four editors, especially the distinguished expert who has edited all three editions and written critical chapters therein, should be commended for producing a revision required by any user of the previous volumes. The unique perspective of this revision makes it essential for anyone working with nematodes in or from the subtropical and tropical areas of the world. Any plant nematology graduate student would appreciate a kind gift of this unique resource from his or her major professor.

“We wish you success in your work towards improving crop yields in a world in transformation” is the good natured but slightly ominous closing message from the editors in their foreword. Some of the transformations are described several times in the pages that follow: the loss of several broad-spectrum biocides, the development of newer products and methods for nematode management, globalisation, changes in farm size, population growth and climate change.

One transformation is understandably omitted – the political. Given the seeming increase in global instability and conflict as well as the decreasing societal and governmental value being placed upon evidence- and logic-based science in some countries, success in nematology is not guaranteed. If a fourth edition of this book is written, the perspectives of the editors will be most interesting.

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We wish all ONTA members a happy and productive 2020





We would like to extend to all of you our best wishes for this Christmas season, and also to thank our colleague and friend Ed McGawley (ECM) who says farewell, after his retirement this year.

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