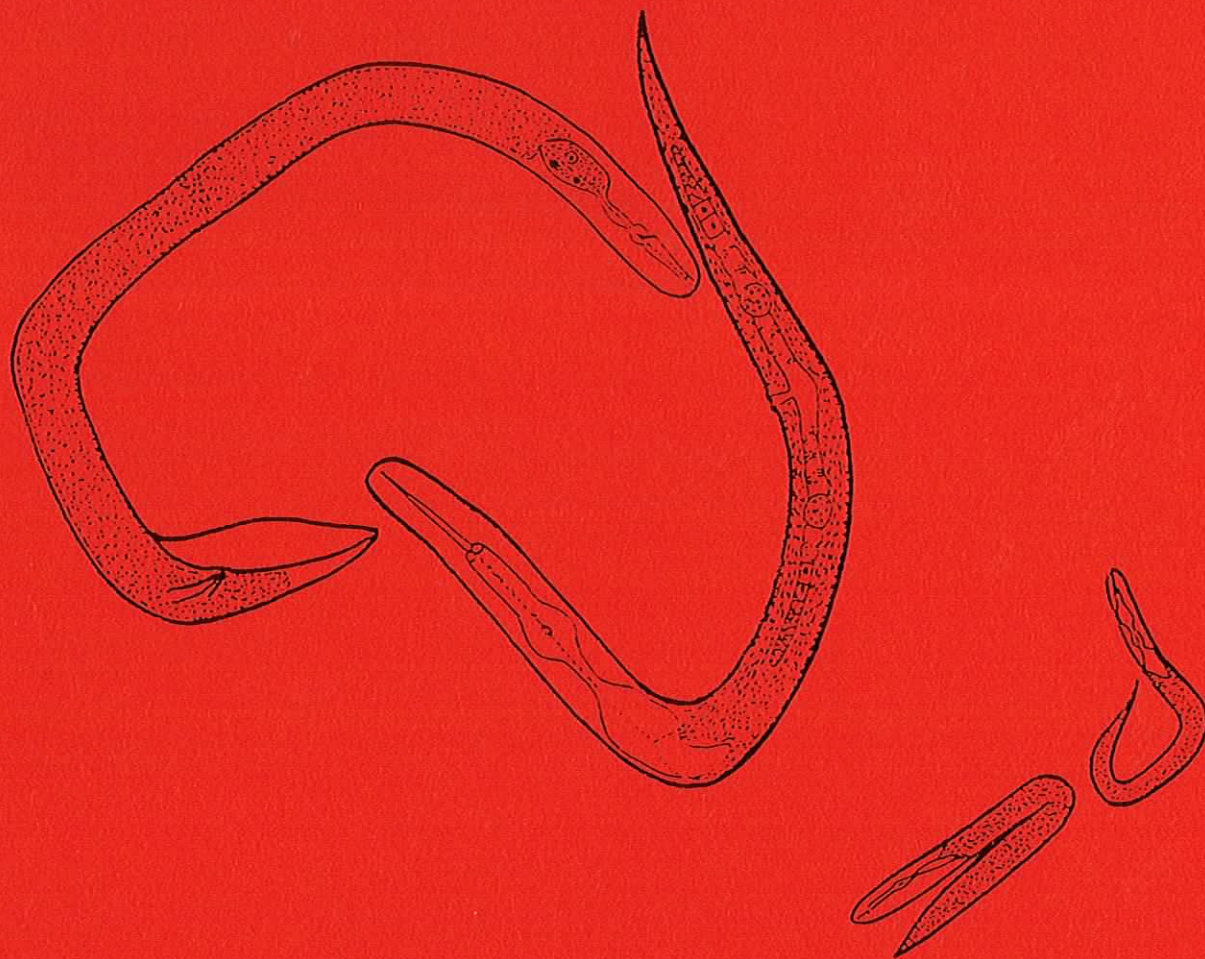


# AUSTRALASIAN NEMATOLOGY NEWSLETTER

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WAITE CAMPUS  
UNIVERSITY OF ADELAIDE



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## FROM THE EDITOR

A constitution has now been formulated for Australasian Association of Nematologists, thanks to Graham Stirling. You will find it in this issue in Association News.

We now have 51 members. The newest eight members are listed in this issue. With this issue you should also find your subscription notice. Subscriptions for 1991 are now due so please send your money.

The "Review of Nematology in Australasia" is well under way but is delayed because we are still awaiting contributions from certain nominated people. If you are one of these, please help us by sending your piece of the review.

My attention has been drawn to an error in the last issue. In "News from New Zealand" the fax no. for Ure Pacific Traders should be (07) 882 278.

Once again we have received a good number of contributions for the newsletter. Those who have not contributed for this issue should send a few paragraphs for the next one. The deadline for the July 1991 issue is 15 June 1991. Please send all articles to:

Dr J.M. Stanton  
Plant Pathology Branch, QDPI  
Meiers Road  
INDOOROPILLY Q 4068

877 1547

AUSTRALASIAN ASSOCIATION  
OF NEMATOLOGISTS

New members since 1 July 1990

Mr Gil J. Hollamby  
Roseworthy Agricultural College  
ROSEWORTHY SA 5371

Breeding for cereal cyst  
nematode resistance and  
tolerance in wheat.

Telephone: (085) 248 244  
Facsimile: (085) 248 007

Dr David T. Kaplan  
USDA Horticultural Research Lab.  
2120 Camden Road  
ORLANDO FL 32803  
UNITED STATES OF AMERICA

Citrus nematology,  
resistance mechanisms,  
recognition phenomena,  
biological control.

Telephone: (305) 897 7364

Mr Mel Lowe  
Managing Director  
Box 321  
BARMERA SA 5345

Advice/sales and  
application of  
nematicides.

Telephone: (085) 882 228  
Facsimile: (085) 882 211

Mr Christopher F. Mercer  
Department of Scientific and  
Industrial Research  
Plant Protection  
Private Bag  
Palmerston North  
NEW ZEALAND

Resistance in white clover  
to *M. hapla* and  
*H. trifloii*. Effect of  
grass endophytes  
on nematodes.

Telephone: (063) 68 019  
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Prof Davabhai J. Patel  
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Gujurat Agricultural University  
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Mrs Janet S. Patterson  
Welsharp Pty Ltd  
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Dr Ian T. Riley  
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KUNUNURRA WA 6743

Telephone: (091) 681 166  
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Dr Maria I. Scurrah  
Department of Agriculture  
Field Pathology Unit  
Waite Agricultural Res. Inst.  
PMB 1  
GLEN OSMOND SA 5064  
Telephone: (08) 272 2343

Management and taxonomy  
of plant parasitic  
nematodes.

General interest in  
nematology and  
biological control.

*Anguina/Clavibacter*  
associations.

*Pratylenchus negiectus*  
Does it damage wheat?  
*Ditylenchus dipsaci*  
Resistance in oats,  
beans, peas, lucerne.  
Ex-interest: potato cyst  
nematode; races and  
breeding.

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## ASSOCIATION NEWS

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### NOMINATIONS FOR THE NEXT AAN EXECUTIVE

Your Executive committee had accepted responsibility for establishing a constitution for AAN and has come up with a simple set of rules which are set out elsewhere in the newsletter. This has been approved by the APPS executive. There is provision in the constitution to modify these rules if members so wish.

Since the next APPS meeting will be held in Sydney from 7 - 11 October 1991, the incoming Executive should be elected before then. Consequently, if you are interested in nominating for one of the positions, please contact me by 15 June 1991. Nominations will be announced in the next issue of the newsletter and if a ballot is necessary it will be held in August or September.

AAN will only be a worthwhile society if there is active participation by all members, so hopefully there will always be some new faces on each incoming committee.

(G.R. Stirling, Secretary)

### Nematode Identification Workshop

APPS members should have received a preliminary announcement about the 8th APPS conference in Sydney from 7 - 11 October 1991. In conjunction with the conference, it is proposed to conduct a two-day workshop on identification of the major nematode groups.

Dr James Baldwin from the University of California at Riverside has agreed to help with the workshop and, over the next few months, he will be helping us develop a suitable programme. At this stage, we have in mind spending ½ day on general problems in identification, after which we will cover specific nematode groups (1 day) and some of the new molecular methods being used in nematode taxonomy (½ day).

If you intend coming to the workshop, please let Graham Stirling know which topics you would like covered. The workshop will be most valuable if we use the time to study nematodes of most interest.

(Chris Green/Graham Stirling)

## Rules of the Australasian Association of Nematologists

### 1. Relationship to Parent Body

The Australasian Association of Nematologists (AAN) shall function as a special interest group within the Australasian Plant Pathology Society (APPS).

### 2. Objectives

The objectives of AAN shall be the advancements and dissemination of the knowledge of nematology and its practice, particularly but not exclusively in relation to Australia, New Zealand and neighbouring countries. These objectives may be achieved in any or all of the following ways:

- (a) by fostering communication and exchange of information between members and between other local and overseas Societies with similar aims and objectives.
- (b) by organising scientific meetings, workshops and training courses.
- (c) by increasing political and public awareness of the functions and achievements of nematologists.

### 3. Membership

All persons interested in nematodes shall be eligible for membership of AAN upon payment of an annual subscription. Membership shall be terminated if a subscription is more than one year in arrears.

### 4. Officers

A five-person Executive consisting of a President, Secretary, Treasurer, Newsletter editor and one other member shall be responsible for administration and management of the affairs of AAN. A majority of these officers must be members of APPS, and they shall be elected by simple majority of AAN members voting by postal ballot. Elections shall be held approximately once every two years, generally prior to an APPS conference.

### 5. Subscription

The annual subscription to the Association may be altered by a simple majority of members voting at a postal ballot of all members.

### 6. Amendments to Rules

These rules may be amended by financial members of AAN, provided not less than two months notice of the proposed amendment has been circulated to members. The resolution shall be passed by a two-thirds majority of members voting in a postal ballot.

### 7. Reports to Parent Body

At the end of its period of office, the Executive of AAN shall present a report of its activities and a financial statement to the Executive of APPS.

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## CURRENT RESEARCH

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### NEMATOTOLOGY IN GUJURAT

The Department of Nematology was started in 1977-78 at B.A. College of Agriculture, Gujarat Agricultural University, Anand Campus, Anand, Gujarat (India) with the posts of Professor, Associate Professor and Assistant Professor. It is mainly engaged in teaching nematology at undergraduate as well as postgraduate level.

Field and nursery experiments for management of nematodes affecting various crops like tomato, okra, banana, groundnut, sugarcane, tobacco, pulses and other crops are being undertaken. The key nematodes are root-knot (*Meloidogyne incognita*, *M. javanica* and *M. arenaria*), reniform (*Rotylenchulus reniformis*), stunt (*Tylenchorhynchus vulgaris*), burrowing (*Radopholus similis*) and spiral (*Helicotylenchus* spp.). The Department has microplots (2m x 1m) for maintaining pure cultures of different nematode species and for varietal screening as well. Beside this, there are two nematode-sick fields (about 2.5 hectares) for conducting field experiments on nematode management. Root-knot resistant varieties in tomato, cowpea, tobacco, chilli and castor have been identified. Besides *M. arenaria*, *M. javanica* has been observed attacking peanut in some regions of the State; it may be a new pathotype. A new species, *Tylenchorhynchus microcephalus* from sugarcane, and *Paurodontus similis* from garlic were recently recorded.

Dr D.J. Patel, an eminent scientist and Professor and Head of the Department presented a paper "Soil solarization through clear polyethylene tarping for management of root-knot nematodes in tobacco nurseries" at the XI International Congress on the Use of Plastics in Agriculture" held on February 26 - March 2, 1990 at New Delhi.

Mr B.A. Patel, Assistant Professor of Nematology attended the First All-India Advanced Training Course on Nematode Pest Identification held at Aligarh Muslim University, Aligarh (UP) on December 19-31, 1988. He, along with Mr S.K. Patel, Assistant Nematologist, AICRP on Nematodes, also participated in a Summer Training Course on "Nematode Diseases of Pulses and Oil Seed Crops and their Management" at Rajasthan College of Agriculture, Udaipur, Rajasthan on June 20-29, 1989.

Similarly, Mr H.V. Patel, Assistant Nematologist, AICRP on Nematodes presented a research paper on "Comparative Efficacy of LDPE Plastic Films Tarping for Soil Solarization in Control of Root-knot Nematodes in Tomato Nurseries" at the XII Annual Conference of the Society of Mycology and Plant Pathology held on July 5-7, 1990 at Rajasthan College of Agriculture, Udaipur, Rajasthan.

To date, eleven students have been awarded the M.Sc. (Agri.) degree in Nematology and two students are working for their M.Sc. (Agri.) at present.

## RESEARCH ACHIEVEMENTS (1988-89):

1. Carbofuran (Furadan 3G) applied @ 1.5 g/plant at 6 and 7.5 months after planting effectively reduced root-knot and burrowing nematodes and increased banana fruit yield (ICBR 1: 2.71).
2. Wheat and pearl millet, either whole grain or crushed, and neem, mahuva and karanj cakes supported good growth and sporulation of the nematophagous fungus, *Paecilomyces lilacinus*.
3. Application of dry azolla in the soil @ 3 per cent w/w or above significantly reduced root-knot disease in okra and ultimately enhanced okra plant growth.
4. Application of dry azolla and leaf powder of perwinkle (*Catharanthus roseus*) and *Clerodendron enermi* significantly reduced root-knot disease on okra and consequently increased okra plant growth.
5. During random and intensive surveys, wheat was found attacked by stunt and root-knot nematodes, castor by reniform nematode, groundnut by root-knot, *M. arenaria* in Saurashtra and *M. javanica* in middle Gujarat regions and banana by root-knot and burrowing nematodes.
6. Tomato varieties SL 120, Punjab NR-7, VFN Bust, Patriot, Rossol, Ronita, Breach and F 38 F2 were identified as resistant to *M. incognita* and *M. javanica*.
7. Organic amendments viz. neem, mustard and castor cakes @ 500 kg/ha (spot application) effectively reduced root-knot disease and increased tomato yield in nematode-sick fields.
8. Phenamiphos and FMC 67825 proved effective in root-knot control in tomato and tobacco crops.
9. Rabbing with pearl millet husks effectively reduced root-knot disease in tomato nurseries and increased transplantable seedlings (ICBR 1: 5.1).
10. The field losses estimated due to root-knot nematodes in groundnut, mungbean and cowpea were 60, 13 and 12 per cent, respectively.
11. Castor wilt disease increased in the presence of reniform nematode.
12. Tobacco variety GT 5 has been identified as resistant to root-knot, stunt and reniform nematodes.
13. Soil solarization through 25 micron (100 gauge) LDPE clear film for 15 days during summer months (42 - 45 °C atmospheric temperature) proved excellent to economically manage root-knot nematodes and weeds in tobacco and tomato nurseries.
14. A rotation of castor cv. Anand 39-1 with tobacco in alternate years reduced root-knot disease by 74 per cent and increased tobacco yield by 28 per cent over two cycles.
15. *Catharanthus roseus* (Barmasi) efficiently trapped and reduced populations of *Meloidogyne incognita* and *M. javanica* in tobacco nurseries and in the field.

(D.J. Patel, Gujarat Agricultural University, India)



## *Pratylenchus thornei* IN MEXICO AND ITS LABORATORY CULTURE ON CARROT.

Recently I had the opportunity to visit CIMMYT, the International Centre for Maize and Wheat Improvement near Mexico City. There Dennis Lawn is looking for resistance in wheat to the root-lesion nematode, *Pratylenchus thornei*, a similar research objective to my own program in Queensland. *P. thornei* appears to be well distributed in Mexico, at least it is present on all CIMMYT research stations, and is particularly damaging to wheat at their station in Baja California, the long peninsular on the west coast of Mexico.

Differences in field tolerance among recent high-yielding varieties have been noted with Serri being quite intolerant. In previous work in Queensland we recognised tolerance in a CIMMYT-derived variety Potam 70. Possibly it was originally selected in Mexico on *P. thornei*-infested sites. Gene Saari, Plant Pathologist at CIMMYT reported that Potam does well in Morocco and northern Iran where it is called Mogul, and probably this is related to its tolerance of *P. thornei*. *P. thornei* is known to occur in Morocco, Syria and other parts of the Middle East.

At CIMMYT, Dennis Lawn is screening for resistance by counting *P. thornei* in the roots of field-grown wheat after extraction in a rotary shaker. In addition, he is screening varieties for rates of root invasion by *P. thornei* in short-term laboratory tests. For this purpose, he grows nematodes for inoculum in carrot culture. I was interested to learn first-hand tips on how to make this technique work. His recipe is as follows:

1. Extract *P. thornei* from infested roots by misting or by shaking in water on a rotary shaker; then hand-pick *P. thornei* under a stereo-microscope.
2. Surface sterilise the nematodes by suspending them in 10 - 15 ml of a solution of 100 mg/L HgCl<sub>2</sub> and 100 mg/L streptomycin in a cone-shaped centrifuge tube for 2 minutes. Wash by centrifuging at 2000 rpm for 30 sec. Let the centrifuge come to a smooth stop. Draw off the disinfectant. Wash the nematodes, suspending them in sterile distilled water, centrifuging again and resuspending in sterile distilled water. To prepare the disinfecting solution, autoclave 100 ml distilled water and while still hot add 0.01 g HgCl<sub>2</sub>. When cool add 0.1 g streptomycin sulphate. The solution lasts for 2 weeks. This procedure is considered to be more successful than the method of having the nematodes migrate through solid agar containing the disinfectants.
3. Obtain fresh carrots (about 2 cm diameter) that have not had their tops removed or have not been refrigerated.
4. Wash the carrots and peel with a metal vegetable peeler sterilised in 2% NaOCl solution. Hold the carrot by the top inch (to be discarded later) while peeling. While working with the carrot in a sterile Petri dish, cut it into cylinders about 3 cm long.
5. While holding a carrot cylinder with sterile forceps, cut a cone-shaped piece out of the apical end of each carrot cylinder with a sterile scalpel. Stand 3 to 4 carrot cylinders upright in each jar.
6. Inoculate each cylinder in the cone-shaped well with about 100 surface-

sterilised nematodes. Replace the cone-shaped cap of carrot. Add 1 ml sterile distilled water to the bottom of the jar to maintain humidity.

7. Incubate the jars at 22 °C, with lids loose for aeration.

8. During the course of incubation, the carrot cylinders form white callus on their cut sides and the nematodes reproduce. Callus formation, which is usually best in cylinders from the apical portions of the carrots, is essential for successful nematode culture. A macroscopic network of aggregated nematodes develops on the carrot surface in successful cultures.

9. After incubation for 8 - 12 weeks, separate the nematodes from the carrots in Baermann funnels. Run the tap for a few minutes before drawing the water to be used so it is oxygenated. Extract for 3 - 8 hours but not overnight as contamination becomes a problem. Up to 500,000 *P. thornei* can be obtained from a single culture.

10. This method is based on further experiences with this technique since the publication:

Lawn, D.A. and Noel, G.R. (1986). Gnotobiotic culture of *Pratylenchus scribneri* on carrot discs. *Nematologica* 16:45-51.

(J.P. Thompson, Queensland Wheat Research Institute, Toowoomba)

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## REGIONAL NEWS

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### NEWS FROM NEW ZEALAND

Gregor Yeates was among the knot (assuming that is the term for a collection of nematologists) at the Veldhoven congress. He then spent a couple of weeks with nematologists in The Netherlands (Wageningen and Bilhoven) before visiting colleagues in Rothamsted, Aberdeen and Invergowrie. The discussions seem to have given enough ideas for ten years' work! One task for which Gregor was "volunteered" is the coordination of a comprehensive review of "feeding types" in plant and soil nematodes; the initial effort is now in Europe for their reaction/input. Some of the time in Wageningen was spent with Piet Loof trying to sort out "*Criconemoides*" material from indigenous forests - when these forests are replaced by ryegrass/white clover pastures the "*Criconemoides*" vanish, perhaps being replaced by *Paratylenchus* in the less moist conditions. Having a paper enumerating nematode populations in New Caledonian *Nothofagus* forests in press, Gregor is now digging deep (i.e. to 80 cm) into New Zealand forests to redress the balance. Marco van Etteger, a Wageningen student, is helping with these studies and getting his practical experience.

*Pakira*, which was described from New Zealand in 1967 and next found 20 years later in Transkei by Heyns & Coomans, has now been found in forests and the range of female sizes presents something of a dilemma in describing the second species. Gregor and Wim Wouts are cooperating in a survey of *Helicotylenchus* spp. from agricultural soils. The balance of Gregor's time is taken up with ecological studies which generally try to relate soil biological activity to plant nutrient cycling under a range of "sustainable" land uses.

(Gregor Yeates, DSIR, Lower Hutt)

### "Nematologica" is up to schedule!

A letter from Don Corbett, outgoing Editor, advises that Volume 36 (1990) numbers 1 and 2 are published, number 3 (which will be a small number because the SINC abstracts were not ready in time) is shortly to be in page proof and number 4 (which will be enlarged by the addition of the SINC abstracts) is being typeset. This has taken all the completed scripts on hand and any further scripts which meet the usual quality criteria will be gladly accepted and passed to the incoming Editor, Charles Taylor.

(Gregor Yeates, DSIR, Lower Hutt)

## NEWS FROM SOUTH AUSTRALIA

Derek Brown of the Scottish Crops Research Institute, Invergowrie (Dundee, U.K.) and John Halbrecht (U.S.A.) are currently studying populations of *Xiphinema 'americanum'* to try to determine whether populations from different parts of the world are the same species or not. There have been suggestions by other workers that *X. americanum* from the U.S.A. are not the same as those from Europe and other parts of the world. The status of populations from Australia is as yet uncertain. Derek and John are interested in looking at several Australian populations, if possible from different parts of the country, and would be most interested to hear from anyone who can supply populations of this species - i.e. adults and all juvenile stages.

If you are able to help, please let me know or write directly to Derek Brown, Scottish Crops Research Institute, Invergowrie, Dundee DD2 5DA, Scotland, U.K.

If you have *Xiphinema*, but are unsure of the species, send a few female specimens to the address below, and I will endeavour to identify them.

Any assistance would be greatly appreciated.

Frances Reay, Plant Pathology Department, Waite Agricultural Research Institute, Glen Osmond SA 5064 (Tel: (08) 372 2444)

## NEWS FROM QUEENSLAND

### Report on Overseas Trip

Earlier this year I was fortunate to be able to spend one week in Israel, two months at Rothamsted Experimental Station in England and one week at the International Nematology Congress in the Netherlands. The following comments on my trip may be of interest to others, although I recognise that they are biased towards my interest on biological control.

### ISRAEL

1. Discussions were held with the following scientists:

#### Volcani Centre, Nematology Dept.

Dr I. Glazer Entomogenous nematodes, *Steinernema* and *Heterorhabditis*

Dr D. Orion. Culture of root-knot nematodes in excised roots. Nematicide seed treatments for control of cyst and lesion nematodes on wheat.

Dr Y. Spiegel Attachment of bacteria to nematodes. Recognition phenomena. Chitinolytic bacteria and chitin amendments for biological control of root-knot nematodes.

Volcani Centre, Plant Pathology Dept.

Dr S. Droby    Use of yeasts for biocontrol of post-harvest diseases caused by *Penicillium*, *Botrytis* and *Rhizopus*.

Dr Y. Elad    Biocontrol of *Botrytis* in vineyards and glasshouses with *Trichoderma harzianum*.

Faculty of Agriculture, Hebrew University

Dr I. Chet's laboratory    *Trichoderma* for biocontrol of soil-borne plant pathogens.

Mr J. Inbar    Chitinolytic bacteria for control of fungi.

2. Dr R. Hoffstein of FRM Corporation (which is a joint venture between First Mississippi Corporation and Hebrew University) showed me field trials they are conducting with a chitinolytic pseudomonad for biocontrol of *Meloidogyne*. I also visited their laboratories and fermentation facilities in Jerusalem.
3. In general, I was impressed with the extent and quality of the biocontrol work being done in Israel, particularly that in Plant Pathology. The laboratory and greenhouse data on the chitinolytic pseudomonad for nematode control looked promising, but I was not shown enough data to be able to fully evaluate its potential. The field trials I saw were not sufficiently advanced for responses to be evident.

UNITED KINGDOM

1. Biological control is a significant component of the nematology program at Rothamsted, with Dr B. Kerry leading a group of four scientists and several technicians and students.
2. Much of the biological control work is being funded by Agriculture Genetics Co. (AGC). This is the commercial arm of AFRC, the government body which runs the five major agricultural research institutes in England.
3. The biocontrol work being done at Rothamsted is devoted almost entirely to work with *Verticillium chlamyosporium* and *Pasteuria* spp. Because of confidentiality requirements, I was not shown all the results of this work.
  - i) *Pasteuria penetrans* has been cultured *in vitro* by a group at Cambridge University but the cultures decline after several sub-cultures. This work has been discontinued.
  - ii) An isolate of *V. chlamyosporium* from Brazil has given promising results against *Meloidogyne* spp. and has been patented by AGC. It is rhizosphere-competent, is an aggressive parasite of eggs and Has given up to 90% control of nematodes in field soil in the glasshouse. The first field trial with the fungus was being carried out during the summer of 1990.

4. The other major thrust of the Rothamsted nematology program is the development of improved methods of detecting, identifying and quantifying species and races of root-knot and cyst nematodes. DNA probes to some species of cyst nematodes have already been produced and attempts are being made to develop monoclonals specific for the four main species of *Meloidogyne*.
5. While at Rothamsted, I worked with Dr K. Davies on monoclonal and polyclonal antibodies to *Pasteuria penetrans*. During the time I had available we were unable to produce a monoclonal antibody, and suspect that our lack of success was due to the insensitivity of the ELISA technique we used to detect it. The USDA nematology group at Beltsville have produced a monoclonal to a *Pasteuria* isolate from *Heterodera*.

#### THE NETHERLANDS

1. Approximately 370 delegates from around the world (including about 12 from Australia and New Zealand) attended the Second International Nematology Congress at Eindhoven. I presented an invited paper "Outlook for biological control" in a symposium on biological control and a poster on our work with bacterial and fungal antagonists of root-knot nematode.
2. There has been a tremendous increase in interest in biological control in recent years and nearly fifty papers in that area were presented at the Congress. This compares more than favourably with the 19 presented at the 1984 meeting in Canada. Several groups presented evidence that rhizobacteria could have significant detrimental effects on nematodes, while the most promising fungal work was being done at Rothamsted with *V. chlamydosporium*. An isolate of *Pasteuria* from *Heterodera* has been grown *in vitro* on a very complex medium, but it cannot be cultured indefinitely and the spores produced have not been shown to be infective.
3. Other than biological control of plant-parasitic nematodes, the topics which dominated discussion at the Congress were:
  - i) The use of entomophilic nematodes for biological control of insects.
  - ii) The use of molecular methods to understand plant-nematode interactions, particularly the initiation and development of syncytial feeding in endoparasitic species and resistance mechanisms.
  - iii) The use of molecular and immunological techniques to understand variation in nematodes and to distinguish pathotypes.

(G. Stirling, QDPI, Indooroopilly)

Two overseas visitors have joined our group in the last few months. Sergio Galper recently arrived from Israel to take up a post-doctoral position in my biocontrol programme. Sergio completed his Masters degree on biological control of powdery mildew and recently finished a Ph.D. on proteinaceous amendments for nematode control. Some of that work was published recently in "Journal of Nematology".

Mary Mertens is working at Indooroopilly for six months as part of her Masters degree programme at Wageningen in the Netherlands. Mary's major area of specialization is plant nematology. While she is in Australia she is looking at the role of naturally-occurring egg-parasitic fungi in the population dynamics of root-knot nematodes on perennial crops.

Unfortunately, we are losing one of our nematological stalwarts at the end of 1990. Loren Schipke is leaving QDPI at Mareeba to take up a plant quarantine position in Cairns. Loren learnt nematology in the 1970's under Roger Broadley and has provided an invaluable service to north Queensland farmers and extension personnel since Roger left to become a banana grower in 1980. We wish Loren success in his new career.

(G. Stirling, QDPI, Indooroopilly)

Chris O'Brien and Loren Schipke attended the 4th Australian Tobacco Research Conference held in Mareeba on 28 - 29 August. Chris presented a seminar entitled "Root-knot nematode species affecting tobacco in north Queensland" and Loren spoke on "Current research on rotational crops and resistant tobacco cultivars for the control of root-knot nematode affecting tobacco in north Queensland".

John Curran, from CSIRO Division of Entomology, Canberra visited QDPI and University of Queensland, Department of Zoology from 22 - 26 October to collaborate on an RIRDC-funded project "Development of DNA probes for identification of species and races of root-knot nematodes". While in Brisbane, John presented a seminar on "Molecular taxonomy of nematodes: current status, future directions" to an APPS meeting.

(J.M. Stanton, QDPI, Indooroopilly)

## NEWS FROM NEW SOUTH WALES

### Nematology Jottings from U.S.A.

A misleading title for a few notes gathered on a half day visit to the Oregon Department of Agriculture, in September. Nematology has only a minor role in the organisation. Plant Pathology is part of the Plant Division and, with Entomology, comes under the control of Plant Pest and Disease Programs coordinator, Kathleen Johnson. The main functions relate to pest and disease containment programs. John Griesback, known to me for his work on *Xiphinema americanum* group, is the Survey Plant Pathologist. A nematode insecticide made in Tasmania is used routinely in one pest containment program.

Cereal cyst nematode has been found in eastern Oregon, and adjoining Washington and North Idaho. Jack Pinkerton, formerly nematologist in Oregon, started survey and research on it but is now working outside nematology.

(Rod McLeod, NSW Agriculture & Fisheries, Rydalmere)