

CONTENTS

MULK, M. M. & JAIRAJPURI, M. S., Nematodes of leguminous crops in India III. Three new species of <i>Hoplolaimus</i> Daday, 1905 (Hoplolaimidae)	1
MULK, M. M. & JAIRAJPURI, M. S., Nematodes of leguminous crops in India IV. Two new species of <i>Rotylenchus</i> Filipjev, 1936 (Hoplolaimidae)	9
KHAN, F. A. & KHAN, A. M., Three new species of <i>Neopsilenchus</i> Thorne & Malek, 1968 (Nematoda : Psilenchinae)	15
RASKI, D. J. & PINOCHET, J., <i>Merocriconema braziliensis</i> g. n., sp. n. (Criconematidae : Nematoda) from <i>Piper</i> sp.	22
KOSHY, P. K., SOSAMMA, V. K. & NAIR, C. P. R., Preliminary studies on <i>Radopholus similis</i> (Cobb, 1893) Thorne, 1949 infesting coconut and arecanut palms in South India	26
REDDY, P. P., GOVINDU, H. C. & SETTY, K. G. H., Studies on the effect of amino acids on the root-knot nematode <i>Meloidogyne incognita</i> infecting tomato	36
REDDY, P. P., GOVINDU, H. C. & SETTY, K. G. H., Studies on the action of DL-methionine on <i>Meloidogyne incognita</i> infecting tomato	42
HUSAIN, S. I. & KHAN, A. M., Four new tylenchid nematodes from North India	49
RAO, V. R. & SWARUP, G., Studies on the life history of <i>Helicotylen hus dihystra</i> and on the histopathology of infested sugarcane roots	56
NANDAKUMAR, C., PRASAD, J. S., RAO, Y. S. & RAO, J., Investigations on the white-tip nematode (<i>Aphelenchoides besseyi</i> Christie, 1942) of rice (<i>Oryza sativa</i> L.)	62
KHAN, E., CHAWLA, M. L. & SAHA, M., Criconematoidea (Nematoda : Tylenchida) from India, with descriptions of nine new species, two new genera and a family	70
<i>Short Communications</i>	
JAYARAMAN, V., RAJENDRAN, G. & MUTHUKRISHNAN, T. S., Occurrence of root-knot nematodes in <i>Polianthes tuberosa</i> L. in Tamil Nadu	101
SIDDIQUI, Z. A. & GHOUSE, A. K. M., Formation of phloem in the roots of <i>Lagenaria leucantha</i> infected with <i>Meloidogyne incognita</i>	102
MOHANDAS, C., <i>Helicotylenchus trivandranus</i> sp. n. (Nematoda : Hoplolaimidae) from Kerala in India	105
JAIRAJPURI, M. S., KHAN, W. U. & AHMED, S., Studies on Mononchida of India VIII. Record of abnormal buccal cavity in <i>Hadronchus shakili</i> Jairajpuri, 1969	107
ISMAIL, W. & ALAM, M. M., Influence of <i>Meloidogyne incognita</i> on the penetration of subsequent population of the same species	109
JAIRAJPURI, M. S., BAJAJ, H. K., AZMI, M. I. & SULTAN, M. S., Qualitative determination of hydrolytic enzymes in tissue homogenates of <i>Hoplolaimus indicus</i> and <i>Helicotylenchus indicus</i>	111
SHARMA, N. K. & SETHI, C. L., Leghaemoglobin content of cowpea nodules as influenced by <i>Meloidogyne incognita</i> and <i>Heterodera cajani</i>	113
MURALIDHARAN, R. & SIVAKUMAR, C. V., An improved method of recovery of the reniform nematode, <i>Rotylenchulus reniformis</i> from soil	114
MURALIDHARAN, R. & SIVAKUMAR, C. V., Susceptibility of certain Indian varieties of cotton and wild species of <i>Gossypium</i> to the reniform nematode, <i>Rotylenchulus reniformis</i>	116

(Continued on inner cover)

(Continued from back cover)

SANWAL, K. C. & MATHUR, V. K., Soil as contaminant of wheat seed	...	118
SINGH, R. V. & KHERA, S., Plant parasitic nematodes from rhizosphere of vegetable crops around Calcutta-I, (Nematoda : Criconematidae)	120
NATH R. P., SWARUP, G. & PRASAD, A. B., Studies on the morphology and cytology of <i>Pratylenchus zae</i> with a report on the occurrence of its male	123
RAVEENDRAN, V. & NADAKAL, A. M., An additional list of plants infected by the root-knot nematode, <i>Meloidogyne Incognita</i> (Kofoid & White, 1919) Chitwood, 1949 in Kerala	126
SEN, K. & DASGUPTA, M. K., Further report on the occurrence of <i>Meloidogyne</i> spp. on some plants in West Bengal including a few new host records from India	128
KRISHNA MURTY, G. V. G., A multipurpose mini water can useful in research laboratories	...	129
GUPTA, P., SINGH, K. P. & EDWARD, J. C., Studies on the effect of some soil borne fungi on the development of <i>Heterodera vigni</i> on cowpea	132
BOOK REVIEW	137

NEMATODES OF LEGUMINOUS CROPS IN INDIA
III. THREE NEW SPECIES OF *HOPLOLAIMUS* DADAY, 1905
(HOPLOLAIMIDAE)

BY

M. MUDDASSIRUL MULK and M. SHAMIM JAIRAJPURI

Section of Nematology, Department of Zoology, Aligarh Muslim University, Aligarh, India

Hoplolaimus seshadrii sp. n., 1.45-1.77 mm long, head continuous or faintly marked off from body bearing 3 annules, spear 42-43 μ m long, spear knobs with two anterior projecting processes, intestine partially overlapping rectum, tail with 14-18 annules. *H. cephalus* sp. n., 0.78-1.18 mm long, head set off smooth, spear 34 μ m long, spear knobs anteriorly directed. and tail with 6 annules of which terminal annules larger than on body. *H. dimorphicus* sp. n. 1.08-1.64 mm, head distinctly set off from body marked with 2-3 annules, spear 34-36 μ m long, spear knobs anteriorly directed, tail irregular with rounded to flat or notched terminus and with 6-10 annules.

NEMATODES OF LEGUMINOUS CROPS IN INDIA
IV. TWO NEW SPECIES OF *ROTYLENCHUS* FILIPJEV, 1936
(HOPLOLAIMIDAE)

BY

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Rotylenchus siddiqii sp. n., 0.61-0.78 mm long ; lip region with indistinct annulations ; spear 22-24 μm long ; spear knobs rounded ; tail hemispherical ; and phasmids 10-13 striae anterior to anus. *Rotylenchus secundus* sp. n., 0.63-0.77 mm long ; lip region faintly striated ; spear 24-25 μm ; spear knobs anteriorly pointed ; tail cylindroid and phasmids at anal level.

THREE NEW SPECIES OF *NEOPSILENCHUS* THORNE &
MALEK, 1968 (NEMATODA : PSILENCHINAE)*

BY

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Neopsilenchus affinis sp. n. from the rhizosphere of *Pyrus pyriflora*, *N. similis* sp. n. and *N. varians* sp. n. from the rhizosphere of *Prunus bokhariensis* in Mount Abu, Rajasthan are described, illustrated and diagnosed. The diagnosis of *Neopsilenchus* is emended and a key is provided for the species of the genus. It appears to be the first record of this genus from this country.

***MEROCRICONEMA BRAZILIENSIS* G. N., SP. N. (CRICONEMATIDAE :
NEMATODA) FROM *PIPER* SP.**

BY

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Merocriconema braziliensis g. n., sp. n., is proposed as a new taxon, collected in Nova Teutonia, Brazil.

PRELIMINARY STUDIES ON *RADOPHOLUS SIMILIS* (COBB, 1893)
THORNE, 1949 INFESTING COCONUT AND ARECANUT PALMS
IN SOUTH INDIA

BY

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Radopholus similis infestation on coconut and arecanut is reported from various districts of Kerala, Karnataka and Tamil Nadu. The semi-hard orange-coloured portion of the main roots of coconut is found to harbour maximum number of nematodes. Peeling and slicing of roots during processing resulted in maximum nematode recovery. Optimum temperature range for extraction of *R. similis* from coconut roots is 4.0°C to 14.0°C. *R. similis* produces small, elongate reddish brown cortical lesions on roots of coconut and arecanut which later coalesce and cause extensive root rotting. Populations from coconut, arecanut and banana did not differ in their pathogenicity. The coconut cultivars West Coast Tall, Dwarf Orange, Dwarf Green, Gangabondam, Tall x Dwarf, Dwarf x Tall and Tall x Gangabondam are all susceptible to the burrowing nematode.

STUDIES ON THE EFFECT OF AMINO ACIDS ON THE ROOT-KNOT
NEMATODE *MELOIDOGYNE INCOGNITA* INFECTING TOMATO*

BY

P. PARVATHA REDDY, H. C. GOVINDU and K. G. H. SETTY

Department of Plant Pathology, University of Agricultural Sciences, Bangalore, India

Nine amino acids, viz., DL-isomers of methionine, valine, serine, phenylalanine and isoleucine and L-isomers of serine, proline, cysteine HCl and histidine were evaluated for their effect on the root-knot nematode, *Meloidogyne incognita* infecting tomato. DL-methionine and DL-phenylalanine inhibited larval hatching from egg masses *in vitro* to the maximum extent. In general, DL-amino acids (except DL-valine) had some contact toxicity *in vitro* to the second-stage larvae whereas L-amino acids (except L-cysteine HCl) had no such effect. DL-isoleucine and L-cysteine HCl exhibited adverse effects on the growth of tomato plants. DL-methionine and DL-valine gave maximum reduction in root galling.

STUDIES ON THE ACTION OF DL-METHIONINE ON *MELOIDOGYNE*
INCOGNITA INFECTING TOMATO*

BY

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DL-methionine reduced root galling, egg mass production and fecundity of the root-knot nematode, *Meloidogyne incognita*. The amino acid also delayed the completion of nematode life cycle by about 8 to 9 days. Nematode extract, presumed to contain sex hormone/s, reduced the delay in life cycle caused by the application of DL-methionine, whereas Altozar (insect hormone) and Proluton (mammalian hormone) had no such effect. DL-methionine reduced only the number but not the size of giant cells incited by the root-knot nematode. The amino acid also reduced only the body width but not the length of different stages of the nematode.

FOUR NEW TYLENCHID NEMATODES FROM NORTH INDIA

BY

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Aglenchus lycopersicus sp. n. is distinctive by its strongly striated cuticle, ten longitudinal lines running parallel throughout the body, offset lip region and short, rudimentary post-uterine sac, whereas *Lelenchus magnus* sp. n. is characterised by fine cuticular striations, four incisures in the lateral field, short spear and the absence of post-uterine sac.

Ditylenchus brassicae sp. n. can be distinguished by its smaller body, four equally spaced incisures in the lateral field, short oval spermatheca, short post-uterine sac and longer tail, while *D. solani* sp. n. is differentiated by its spiral body, distinct hemizonid, four incisures in the lateral field, long post-uterine sac and the tail measuring $1\frac{1}{2}$ times the vulva-anus distance.

NEMATODES OF LEGUMINOUS CROPS IN INDIA
III. THREE NEW SPECIES OF *HOPLOLAIMUS* DADAY, 1905
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BY

M. MUDDASSIRUL MULK and M. SHAMIM JAIRAJPURI

Section of Nematology, Department of Zoology, Aligarh Muslim University, Aligarh, India

Hoplolaimus seshadrii sp. n., 1.45-1.77 mm long, head continuous or faintly marked off from body bearing 3 annules, spear 42-43 μ m long, spear knobs with two anterior projecting processes, intestine partially overlapping rectum, tail with 14-18 annules. *H. cephalus* sp. n., 0.78-1.18 mm long, head set off smooth, spear 34 μ m long, spear knobs anteriorly directed. and tail with 6 annules of which terminal annules larger than on body. *H. dimorphicus* sp. n. 1.08-1.64 mm, head distinctly set off from body marked with 2-3 annules, spear 34-36 μ m long, spear knobs anteriorly directed, tail irregular with rounded to flat or notched terminus and with 6-10 annules.

INVESTIGATIONS ON THE WHITE-TIP NEMATODE (*APHELENCHOIDES BESSEYI* CHRISTIE, 1942) OF RICE (*ORYZA SATIVA* L)

BY

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The white-tip nematode usually remains coiled up in a dormant condition on the lodicules and inside the palea of the rice seed. Pre-soaking seeds in water at 28°C for 12-15 hr was found essential to activate the dormant stages before processing for extraction. As the infested seeds sprout, the nematodes reach the tender primordium for feeding and 12 days later, migrate to the leaf as it unfurls. Typical white-tip symptoms on leaves appear on the 16th day after germination. As plants grow up, the nematodes move to boot-leaves and panicles causing partial emergence of ears and ill-filled or chaffy grains. A sizable population of adults and fourth-stage juveniles of the nematode reach the ears under conditions of humidity and dew in fields. In controlling the seed-borne infestation, pre-soaking seeds in water at 28°C for 12-15 hr, followed by treatment with hot water as 52°C for 10 min was most effective without appreciably affecting the viability of seeds.

CRICONEMATOIDEA (NEMATODA : TYLENCHIDA) FROM INDIA,
WITH DESCRIPTIONS OF NINE NEW SPECIES, TWO NEW
GENERA AND A FAMILY

BY

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Taxonomic status of *Criconemoides* and related genera is discussed. Genera proposed by De Grisse & Loof (1965) are recognised and in addition *Madinema* g. n. is proposed for species having smooth body annules and large fused submedian lobes forming a disc. Diagnosis of Criconematidae is emended, Madinematidae fam. n. is proposed for inclusion of the genera *Criconemella*, *Criconemoides*, *Discocriconemella*, *Macroposthonia*, *Madinema* g. n., *Nothocriconema*, *Nothocriconemoides* and *Xenocriconemella*. Keys to the genera of Madinematidae and Criconematidae are given. Subgenera *Crossonema*, *Variasquamata*, *Seriespinula* and *Criconema* of Mehta & Raski, 1971 are raised to generic rank. *Croserinema* g. n. is proposed for *C. (C) palmatum*. Nine new species viz., *Madinema maglla* sp. n., *M. loma* sp. n., *Macroposthonia rusium* sp. n., *M. cufeum* sp. n. and *Nothocriconema mukovum* sp. n. in Madinematidae and *Crossonema taylatum* sp. n., *C. fimcivatum* sp. n., *Seriespinula impar* sp. n. and *Variasquamata rhosimum* sp. n. in Criconematidae are described and figured. Variations in *Macroposthonia xenoplax* are also recorded.