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**FACTORS INFLUENCING SEX ATTRACTION IN  
*CHILOPLACUS SYMMETRICUS***

BY

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The movement of males towards female attractant sources was highly variable depending on the experimental techniques employed. In Petri dish experiments, fewer females produced a significant male response than in the mickey mouse traps and also the incubation period needed by the females to produce a response from the males was lesser in the former experiment. Attraction was evident earlier in the Petri dish experiments than in the mickey mouse traps. Within each type of experiment also, sex attraction varied with the number of females at the attractant source, period of incubation, time of observation, thickness and the concentration of agar. Generally, five females incubated for 18 hr resulted in a good response of the males in the Petri dish experiment but at least 50 females incubated for 18 hr were required for the mickey mouse trap. Attraction was evident towards five females in the former experiment in 2 hr and towards 50 females in the latter experiment also in 2 hr. 1, 2 and 4 mm thick layers of agar did not produce any change in attraction but in 8 mm thick agar, attraction decreased significantly. Agar concentrations of 4 and 8% inhibited sex attraction in both the sets of experiments while there was no significant difference in 1 and 2% agar. Light produced no significant difference in attraction in either experiment.

**TWO NEW SPECIES OF HOPLOLAIMOIDEA (TYLENCHIDA : NEMATODA)  
FROM INDIA**

**BY**

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*Rotylehchoides impar* sp. n. is distinctive from all other species of the genus by having the smallest (17 to 21  $\mu\text{m}$  long) stylet, anteriorly located vulva 67-74% and presence of post-rectal intestinal sac. *Scutellonema brabanum* sp. n., is distinguished by the conoid truncate lip region, scutellae located 2 to 4 annules anterior to anal latitude, absence of areolation in lateral field, stylet 25-28  $\mu\text{m}$  and  $0=16-19$ .

**UPTAKE AND TRANSLOCATION OF  
1, 2 DIBROMO-3-CHLOROPROPANE IN TOMATO AND TOBACCO PLANTS**

**BY**

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Effect of time interval and dosage of DBCP application on uptake and translocation in tomato and tobacco plants was studied in pots. Results indicated that DBCP applied in soil as drench was absorbed in molecular form by tomato plant through root system, translocated to shoot and started degrading slowly at first upto 40th day of application and then rapidly till 60th day. The degradation in root was quite slow. As against this, with increasing time interval, residue in shoot of tobacco continuously increased and on 60th day it was found to be highest. The absorption and subsequent concentration of residue in both shoot and root was more in 30 litre dosage as compared to 20 litre treatment.

EFFICACY OF CARBOFURAN AND ALDICARB SULFONE SEED  
TREATMENT ON PLANT GROWTH AND AGAINST *MELOIDOGYNE*  
*INCOGNITA* ON SUGARBEET

BY

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Carbofuran (CF) 1% a.i., aldicarb sulfone (AS) 2% a.i., AS 1% a.i. and CF 2% a.i. were effective in that order in reducing *Meloidogyne incognita* population on sugarbeet and improving its plant growth. CF 2% a.i. seed treatment was found to be phytotoxic to sugarbeet seedlings. CF 1% a.i. appears to be economical as the required chemical for seed treatment is about 400 g/20 kg of seed, which is sufficient to sow one hectare.

TWO NEW SPECIES OF *MACROPOSTHONIA* DE MAN, 1880  
(CRICONEMATIDAE : NEMATODA) FROM ASSAM<sup>1</sup>

BY

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*Macroposthonia onostris* sp. n. collected from soil around roots of brinjal (*Solanum melongena*) is characterized by having distinctly separated submedian lobes, unbroken first head annule, 133-147 body annules, 54-61  $\mu\text{m}$  long stylet and slightly dorsally curved conoid tail with 2-4 platelets. *M. medani* sp. n., from soil around roots of citrus (*Citrus sinensis*), is characterized by having distinctly separated submedian lobes, unbroken first head annule; 112-126 body annules, 40-47.5  $\mu\text{m}$  long stylet and a tapering tail with 1-2 platelets. Additional collections of *M. onostris* were made from soil around roots of chilli (*Capsicum annum*) and okra (*Hibiscus esculentus*), and of *M. medani* from soil around roots of banana (*Musa* sp.).

TWO NEW AND FOUR KNOWN SPECIES IN THE FAMILY  
HEMICYCLIOPHORIDAE (CRICONEMATOIDEA : NEMATODA)  
FROM ORISSA, INDIA

BY

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Six nominal species belonging to *Hemicycliophora* de Man 1921, *Caloosia* Siddiqi & Goodey, 1963 and *Hemicaloosia* Ray & Das, 1976 were recorded from Orissa, (India), of which, two were new species. *Hemicycliophora utkali* sp. n. differs from *H. nigeriensis* Germani & Luc, 1973, *H. macristhmus* Loof, 1968, and *H. koreana* Choi, 1971 in pattern of cuticular ornamentation and from the latter two also in having smaller stylet. The female of *Caloosia triandulates* sp. n. is characterised in having 3 head annules, very long, whip-like tail and narrow body, and very long males. *Hemicaloosia americani* Ray & Das 1978 is recorded from a new habitat.

OBSERVATIONS ON THE INFLUENCE OF *MELOIDOGYNE INCOGNITA*  
AND *RHIZOCTONIA BATATICOLA* ON OKRA

BY

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Influence of *Meloidogyne incognita* and *Rhizoctonia bataticola* on the root-rotting and biochemical alternations induced in okra was studied. A synergistic effect on the root-rotting of okra plants was observed when *M. incognita* and *R. bataticola* were combined together at inoculum level of 400 larvae and 4 g mycelial mat per 100 cc soil after 48 days sowing. Biochemical analysis of the okra roots revealed large accumulation of total phenols, proteins and proline in the infected roots with *M. incognita* alone and in combination with *R. bataticola* over healthy roots, while total sugars were decreased in infested roots. A pronounced increase in proline was observed in *M. incognita* and *R. bataticola* as compared to *M. incognita* infected roots alone.

## FOUR NEW AND ONE KNOWN SPECIES OF DORYLAIMIDA FROM MANIPUR, INDIA

BY

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Four new species of Dorylaimida, one each belonging to the genera *Enchodelium* Andrassy 1963; *Discomyctus* Thorne, 1939; *Calolaimus* Timm, 1964 and *Lindseyus* Ferris & Ferris, 1973 are being described from Manipur, India. The genera *Lindseyus* and *Mylodiscus* Thorne, 1939 are reported for the first time from India. *Enchodelium asaccatum* sp. n. has 0.63-0.83 mm long body and resembles *E. thornei* and *E. angolense* but differs from them in having a longer odontostyle, posterior vulva, in the presence of cuticularized pieces in vagina, in the absence of anterior uterine sac and in having shorter tail, *Discomyctus elongatus* sp. n. has 0.73-0.79 mm long body and resembles *D. longicaudatus* and *D. cephalatus* but differs from them in having more prominent labial disc, anterior vulva, in the presence of faintly cuticularized pieces in vagina and in having a long filiform tail. *Calolaimus parapapillatus* sp. n. has 4.41-4.68 mm long body and resembles *C. ditlevseni* and *C. papillatus* but differs from them in having longer odontostyle, posterior vulva, in the size of spicules and lateral guiding pieces and in the number of ventromedian supplements. *Lindseyus indicus* sp. n. has 3.66-5.22 mm long body and resembles *L. costatus* but differs from it in the nature of lip region, in having longer odontostyle, smaller odontophore and cardia, in the shape and size of spicules and lateral guiding pieces and in the number of ventromedian supplements. One known species *Mylodiscus nanus* has also been recorded.

STUDIES ON THE PATHOGENICITY OF *MELOIDOGYNE INCOGNITA*  
ON SOYBEAN<sup>1</sup>

BY

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There was a progressive decrease in growth of soybean plant as the inoculum level of *Meloidogyne incognita* increased. Significant reduction in top growth, root length and bacterial nodulation in comparison to uninoculated check plants, was observed at an initial level of 1000 larvae or above per kg of soil which is considered here as the damaging threshold. Eight varieties and twelve selections were screened to select sources of resistance against *M. incognita*. Two varieties, namely, Forrest and JS-2 and two selections namely, DS 74-20-1 and DS 74-20-2 exhibited resistant reactions while variety Bragg gave indications of being tolerant.

## TWO NEW SPECIES OF *SIDDIQIA* FROM INDIA

BY

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Two new species, *Siddiqia mediensis* sp. n. and *Siddiqia dasturi* sp. n. from West Bengal and Maharashtra respectively are described. *S. mediensis* is distinctive by having L=4.0-5.5 mm, a=95-132, stirrup-shaped amphid, amphidial aperture occupying 78 per cent of lip width, guiding ring located at less than/equal to twice the lip width from the anterior end, presence of well developed cardia, tail length more than/equal to anal body width and by absence of males in the population. *S. dasturi* sp. n. is distinctive by having amphidial pouch, amphidial aperture occupying 44% of lip width, posterior location of guiding ring, rectum length lesser than anal body width, smaller T/ABW ratio and absence of males.

***PAURODONTUS SOLANI* SP. N AND *P. CITRI* SP. N. (NEMATODA :  
NEOTYENCHOIDEA) WITH A KEY TO THE SPECIES OF *PAURODONTUS*  
THORNE, 1941**

BY

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*Paurodontus solani* sp. n. and *P. citri* sp. n. differ from the nominal species of the genus by asymmetrical spear knobs, convoluted precorpus and oesophageal lumen and long isthmus which terminates with a fold over the anterior part of the oesophageal bulb. *P. citri* sp. n. can be separated from *P. solani* sp. n. by longer basal oesophageal extension and postuterine sac. *P. saxeni* Husain and Khan, 1965 and one abnormal female of *P. solani* sp. n. are being reported and a key to the species of *Paurodontus* is provided.

PURIFICATION AND SOME PROPERTIES OF PEROXIDASE AND  
IAA-OXIDASE FROM RESISTANT AND SUSCEPTIBLE VARIETIES OF  
*LYCOPERSICON ESCULENTUM* INFESTED WITH ROOT-KNOT  
NEMATODE *MELOIDOGYNE INCOGNITA*

BY

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Peroxidase and IAA-oxidase activities were purified from nematode inoculated susceptible (var. Pusa Ruby) and resistant (SL-120) tomato varieties by subjecting the crude extracts to a series of steps. Partially purified enzymes with high specific activities were obtained towards the end of final step. Purified preparations of IAA-oxidase activities from the nematode-infested hosts indicated the existence of IAA-oxidase system in the resistant variety which was more active than that of susceptible variety. The IAA-oxidase isozymes were heat stable, denatured after an exposure of the enzyme to 50°C for 15 minutes. The enzyme had an acidic pH optima, precipitated with saturated ammonium sulfate. It was apparent from the studies that the co-factors, Mn<sup>++</sup> and 2, 4 dichlorophenol needed for the oxidation of the substrate. Enzyme preparations from inoculated susceptible and resistant varieties were catalytically and kinetically distinct from their healthy counterparts.

TWO NEW SPECIES OF THE SUPERFAMILY LONGIDOROIDEA  
(DORYLAIMIDA : NEMATODA) FROM INDIA

BY

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Two new species, *S. ddiqia inagreina* sp. n. and *Longidoroides longiurus* sp. n. are described and illustrated. *S. inagreina* sp. n. is differentiated by having odontostylet=102-110  $\mu\text{m}$ , odontophore=65-80  $\mu\text{m}$ , guiding ring 25-30  $\mu\text{m}$  from anterior end and  $c=0.66-0.90$ . *L. longiurus* sp. n. has the longest tail ( $c=49$ ) of all the species in the genus and anteriorly located guiding ring (23  $\mu\text{m}$  from anterior end).

*SIDDIQIA SECLIPSI* SP. N. (NEMATODA : LONGIDOROIDEA)  
FROM INDIA WITH A KEY TO THE SPECIES OF *SIDDIQIA* KHAN,  
CHAWLA AND SAHA, 1978

BY

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*Siddiqia seclipsi* sp. n. collected from soil around the roots of *Acacia* sp. is distinctive in having L=5.7-7.0 mm; a=70-100; amphids broad, stirrup-shaped with bilobed base, their apertures occupying 80% of lip-width; guiding ring located at less than twice lip-width from anterior end; tail less than one anal-body-width long and by the abundance of males in the population.

## RELATIVE TOXICITY OF CHEMICALS TO INFECTIVE LARVAE OF RICE ROOT-KNOT NEMATODE, *MELOIDOGYNE GRAMINICOLA*<sup>1</sup>

BY

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Nematicidal activity against infective larvae of *Meloidogyne graminicola* was determined with 24 chemicals (insecticides, nematicides, fungicides, weedicides and growth regulators) by direct contact and subsequently inoculating the exposed larvae to rice seedlings. Oxamyl and propanil (weedicide) at 50 ppm and above, fensulfothion at 100 ppm, chlorpyrifos, DBCP, phorate and quinalphos at 200 ppm, ZR-777 and CCC (growth regulators) 500 ppm caused maximum kill by direct contact. At sublethal concentrations, these chemicals affected invasion of motile larvae into rice roots. Carbofuran at 100 and 200 ppm exhibited maximum inhibition of larval penetration though it was ineffective as direct contact toxicant. Fensulfothion, oxamyl, propanil and phorate at 50 ppm and ZR-777 at 125 ppm were effective in reducing larval invasion. The fungicides and other growth regulators neither exhibited contact mortality nor inhibited larval penetration in rice roots. Exposure of larvae of *M. graminicola* to chemicals at sublethal concentrations affected the rate of invasion and development of the nematodes. Fensulfothion, oxamyl, phorate and propanil at 50 ppm and above and carbofuran at 200 ppm showed persistent toxicity.

EFFECT OF TWO *MELOIDOGYNE* SPECIES ON THE GROWTH OF  
PAPAW SEEDLINGS

BY

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Papaw (*Carica papaya* L.) seedlings of the variety ambilipitiya were susceptible to *Meloidogyne arenaria* (Neal) Chitw., but to a greater extent to *M. javanica* (Treub) Chitw. Both root-knct nematode species caused the abortion of the main tap root and stimulated production of lateral roots. Although no galls were evident on the infested roots, the two nematodes equally reproduced within the host.