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species of cockroaches: Blaberus atropos, Blaberus boliviensis, Eublaberus posticus (Blaberidae: Blaberinae), Blatta orientalis, Neostyloga rambolofia, Periplaneta brunnea and Shelfordella tartara (Blattidae: Blattinae). Leidyrena delatorii was only found in Leucophaea maderae, and Leidyrena porteniosae - only in Gromphadorhina chopardi, Gromphadorhina porteniosae and Gromphadorhina vanwerphek (Blaberidae: Oxyhaloinae). Thelastoma sp. was only found in Periplaneta americana (Blattidae: Blattinae). The representatives of Severania sp. were reported from Archimandrita tessellata, Blaberus boliviensis and Blaptica dubia (Blaberidae: Blaberinae). In total laboratory cultures of 21 species of cockroaches were investigated. Besides of three uninfected species (Nauphoeta cinerea, Panchlora nivea and Schultesia lampridiformis), all other cockroach cultures were infected, though with highly variable parasite burden. Both cockroach species with few nematodes per host (e.g. Sheffordella tartara = 1,5 at average) and heavily infected ones (e.g. Archimandrita tessellata with 62,5 as mean number of nematodes per host) were reported. RFBR support 05–04–48140a. - Laboratory of Entomology, Department of Plant Protection, Tomsk State University, pr. Lenina, 36, Tomsk, 634050, Russia. E-mail: guzeyeva@mail.ru

HAJIEGRARI, B. ¹, MOHAMMADI, M.², WAONEYBERGE, L.³, KHEIRI, A.² & MAafi, Z. T.⁴ Comparison of tea root lesion nematode, Pratylenchus loosi Loof, 1960 populations on tea growth area in Guilan province, Iran based on protein and isozyme profile and PCR.

The nematode, Pratylenchus loosi Loof, 1960 is considered one of the most destructive pests of tea plants around the world. A total of 15 representative populations of P. loosi were collected from various regions and compared using SDS-PAGE analysis of total soluble protein profile as well as native PAGE analysis of esterase isozyme profile. Further, the genomic expansion region of the rDNA gene (ITS-rDNA and D2/D3 LSU-rDNA) from various P. loosi populations were amplified using conventional polymerase chain reaction (PCR). PCR-RFLP (restriction fragment length polymorphism) was carried out on amplified DNA products from P. loosi populations using specific endonucleases. The genomic region of D2/D3 LSU-rDNA from 13 representative populations was cloned in pGEMT cloning vector and subsequently sequenced. SDS-PAGE analysis revealed a homogeneous protein pattern among all 15 populations of P. loosi. Esterase (EST) isozymic profile showed the existence of two alleles of a and b is responsible for encoding for EST. While a number of P. loosi populations exhibited allele a and others showed allele b and a few possessed both alleles. PCR amplification of the genomic region of ITS-rDNA generated a 1250 bp DNA band which upon digestion with DraI, HindIII, MboI, Hinfl, HaeIII or AluI yielded a similar banding pattern for all 15 P. loosi populations. Likewise, endonuclease digestion of a 787 bp DNA fragment amplified from D2/D3 LSU-rDNA genomic region with DraI, HindIII, MboI, HinfI, HaeIII, AluI, HindIII or PstI produced an identical restriction pattern in all 15 populations of P. loosi. Sequence alignments of D2/D3 LSU-rDNA showed that despite single or double base mismatches in P1(T), P2(2), P4(1), P5(1), P7(1), P6(1) and P10(2) populations, there seems to be a close phylogenetic relationship among P. loosi populations from Iran and between Iranian populations and that of population reported from Sri Lanka. – ¹Department of Plant Production, Moghan Junior College of Agriculture, University of Mohaghegh Ardabili, Ardabil, Iran; ²Department of Plant Pathology & Entomology, College of Agriculture, University of Tehran, Karaj, Iran; ³Agricultural Research Centre, Department of Crop Protection, Burg. Van Gansberghelaan, 96, 9820 Merelbeke, Belgium; ⁴Plant Pests and Diseases Research Institute, AREEO, Ministry of Agriculture P. O. Box 1454-Tehran, 19395, Iran.

HANDOO, Z. A., & ELLINGTON, D. M. S. The value of the USDA nematode collection and its database for taxonomic and systematic research.

The United States Department of Agriculture Nematode Collection (USDANC) at Beltsville, Maryland, is one of the largest and most valuable international resources for nematode taxonomic research and identifications. It is widely used by scientists throughout the world to resolve various taxonomic and nomenclatural problems; it also provides data on nematode hosts, occurrence, and distribution worldwide. Because urban expansion often makes it impossible to collect additional type specimens of a species from the original type locality, the Collection serves as an asset for taxonomic revision of previously described taxa. In the United States, nematology research began in the late 1800s, and for many years the collections of USDA nematologists remained in individual personal collections. In 1960, with type specimens of 18 species, A. Morgan Golden officially established the USDANC, creating an organized, unified repository of important specimens. The USDANC includes mounted specimens collected by pioneer workers over 100 years ago, such as N. A. Cobb's original 1890 material of Mononchus longicaudatus. The collection also includes Thorne's Collection of 6,600 slides with many original types, Steiner's Mermithid Collection of 3,400 slides, and Nickle's insect-parasitic nematode collection. The Collection consists of several constituent divisions and includes over 40,000 permanent slides and vials and 34,300 species entries in its searchable database, which is available on the Web at http://www.nem.barc.usda.gov/database/search.cfm. The type collection is one of the constituent divisions.
and is constantly monitored and maintained. Because only ten percent of the species of animals, plants, and microorganisms on the planet have been named, taxonomic collections such as the USDA NARC are priceless in scientific value. - 1Nematology Laboratory, USDA, ARS, Henry A. Wallace Beltsville Agriculture Research Center, Beltsville, MD 20705, USA. E-mail: handooz@ba.ars.usda.gov

HANDOO, Z. A.1, & KHAN, A.2 A key and diagnostic compendium to the species of the genus Merlinius Siddiqi, 1970 (Nematoda: Telotylenchidae), with description of one new species of Merlinius.

An identification key to 31 valid species of Merlinius is given. A compendium of the most important diagnostic characters for use in identification of species is included as a practical alternative and supplement to the key. The diagnosis of Merlinius is emended, and a list of all the valid species of the genus, their synonyms, and species inquirendae is given. The characters most useful for separating species include body and styel length, shape of head, styel knobs, tail and tail termini, number of head and tail annules, nature of lateral field, position of vulva (V%), and T/ABW ratio in females. Also useful are length and shape of spicules and gubernacula in males. Photomicrographs of diagnostically important morphological features are given that complement the key and compendium. A new Merlinius sp. was found around the soil and roots of date palm (Phoenix dactylifera L.) from Khuzdar, Baluchistan Province, Pakistan. This new species resembles M. bilquisae Khan & Khan, 1995 and M. montanus Maqbool & Shahina, 1987 but differs from these species by the following: body and styel length, shape of head, median bulb, tail and tail terminus, number of head and tail annules, position of phasmid and by their vastly different habit. Because this species is limited in distribution, its economic importance in date palm and other cultivated crops within the region is not known. - 1Nematology Laboratory, USDA, ARS, Henry A. Wallace Beltsville Agriculture Research Center, Beltsville, MD 20705, USA; 2Crops Disease Research Institute, PARC, University of Karachi, Karachi-75270, Pakistan. E-mail: handooz@ba.ars.usda.gov

HOLOVACHOV, O. Postembryonic development in nematode family Plectidae (ordo Plectida).

Nematode postembryonic development consists usually of four juvenile stages. In some nematode taxa the first (Xiphinema americanum group, some Diplogasteromorpha and Tylenchomorpha) or even second (some animal parasitic nematodes) moult occur inside the egg, resulting in only three or two post-hatching juveniles. The analysis of the developmental stages of seven species of the family Plectidae (Anaplectus granulosus, A. grandepapillatus, Plectus parietinus, P. australis, P. antarcticus, P. decens and P. communis) was based on differences in measurements of growing and molting specimens; structure of the cheilostom, basal bulb, valvular apparatus, alar alae, spinneret, gonad primordia; number and arrangement of somatic sensilla and epidermal glands. It revealed two different modes of postembryonic development. Species of the genus Anaplectus and of Plectus parietinus group (parietinus, australis, antarcticus) have four juvenile stages, while P. decens and P. communis (like literature data for Tylocephalus auriculatus and Ereptona arcticum) have only three morphologically distinct types of juveniles, here considered as representing three juvenile stages. Moreover, juveniles of the first in all nine studied species were similar morphologically, thus supporting the assumption that there is no moult inside the egg before hatching in species with only three juvenile stages. Further observations are needed to reveal the peculiarities and mechanisms of the postembryonic development in other members of the family Plectidae. - Department of Zoology, Biological faculty, Ivan Franko National University of Lviv, Hrushevsky str. 4, Lviv 79005, Ukraine. E-mail: zoomus@franko.lviv.ua


From world drilonematid fauna parasites of earthworms from East-Southern Asia are the better studied. They comprise the representatives of all taxa known, namely Drilonematidae, Ungelligidae, Homungelligidae, Scoleclothelidae and Creagrocercidae. Though the more of Drilonematidae genera compared to Ungelligidae is known ungillid outnumber the former. Monotypic families Scoleclothelidae and Creagrocercidae are the least numerous whereas Homungelligidae represented by two genera is of inter-medium position. All these parasites inhabit coelomic cavities of earthworms belonging mainly to families Megascolecidae and Moniligastridae which are the most widespread in the area. Until now, homungelliids are recorded from this region only. The fauna of Australia and Oceania is much less known but seems to be similar to the fauna of Indochina. Parasitic nematodes of Lumbricidae distributed through Palearctic are much less frequent and represented by three genera of the least specialized family Drilonematidae. The largest genus Dicelis is parasitic only in lumbricids but representatives of both other genera Filiponema and Mesonema are also parasitic in tropical oligochaetes. Drilonematid parasites of African oligochaetes which belong to families Eudrilidae and Octochaetidae are represented by Ungella members and monotypic genera Mesonema and Acanthuncella (both latter ones are characterised by presence of numerous somatic sensilla which is exceptional