

SHORT SCIENTIFIC NOTES

Telenomus manolus Nixon, A Potential Egg Parasite of Groundnut Red Hairy Caterpillar, *Amsacta albistriga* Walker

The Red hairy caterpillar is a pernicious menace to the groundnut crop in India. The crop raised in dry land is more prone to the pest than the crop in irrigated soils. A search for the natural enemies associated with the pest was made in Tamil Nadu from August to October, 1974. The results of the study are presented in this paper.

The parasites emerged from the eggs belonged to the species, *Telenomus menolus*¹ which has not so far been reported to parasitise the eggs of *A. albistriga* either in India or elsewhere².

The results also indicate that the degree of parasitisation was as high as 94.3% with 3.8 to 59.4% emergence of adult (Table I). The poor emergence might be due to multiparasitism or due to existing high temperature ranging from 37° to 40° C. The high degree of parasitisation observed, suggests that this could be effectively used along with other methods to control this pest.

TABLE I

Degree of parasitisation and per cent emergence of *Telenomus manolus* in different localities

Name of locality	No. of eggs observed	Per cent parasitisation	Per cent emergence of parasites
Kuttupatty	307	76.2	59.4
Sanarpatty	163	83.4	41.2
Natham	268	90.6	20.6
Kappalur	236	84.7	21.5
Sekkanoorani	283	94.3	3.8

The authors are thankful to Dr. R. W. Fennah, Director, British Museum, Commonwealth Institute of Entomology, London, for his kind help in identifying the parasite and providing informations on its distribution.

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Larval Colour Mutants of *Culex fatigans*

Interest in formal genetics and cytogenetics of mosquitoes has grown considerably during recent years. The development of resistance to chemicals and the unequivocal demonstration of its genetic basis have underlined the need for extensive genetic studies of mosquitoes, especially of the vector species. This interest in mosquito genetics has been sustained mainly by the continuing discovery of new mutant forms. At present a few mutants are known in the genus *Culex*. Laven's review (1967)¹ of the Genetics, speciation and Evolution of *Culex pipiens* is a distinct landmark.

The seven laboratory strains of *Culex fatigans*, the chief vector of filariasis in the tropics, used in the present studies have given ample evidence of the existence of extensive genetic variability (Shetty, 1974)². Five larval colour mutants of *Culex fatigans* have been established. These mutants are golden yellow (*go*), green (*g*), brown (*br*), greyish brown (*gb*) and dark (*da*). The mechanism of inheritance of these mutants was found to be controlled by a single autosomal recessive factor. Crossing experiments between the wild-type and these mutants gave a perfect 3:1 ratio in F₂. The test cross progeny of the F₁ heterozygotes yielded the expected 1:1 ratio, confirming monofactorial recessive pattern of inheritance, thus indicating that these mutants are recessive and autosomal.

The mutations mentioned here and others reported by us elsewhere (Chowdaiah and Shetty, 1976; Shetty and Chowdaiah, 1976)^{3,4} which are a part of this continuing search for a better understanding of the genetic system of *Culex fatigans* offer interesting possibilities for future work.

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Discovery of Fossiliferous Eocene Rocks from Shankarpur, Tehri District, Uttar Pradesh

The Subathu beds Eocene are the only known marine sediments of Tertiary age in Himalaya. They have been found to occur in two structural settings, namely, (i) Autochthonous Eocene belt occurring to the north of the Siwalik sediments and separated from it by the well-known tectonic feature known as Main Boundary Fault. It attains best development towards west of Subathu-Bilaspur area of Himachal Pradesh and thins out towards south-east and is considered to disappear about 20 kms. east of Nahan (Pascoe, 1962), (ii) isolated patches of Eocenes occurring over the rocks of Nappe zone and also as windows within this zone. Between Dehra Dun and Rishikesh, it has been reported to occur in two tectonic windows, Bidhalna and Pharat (Auden, 1936).

Recent work in Rishikesh area has revealed the presence of a belt of rocks comprising dark grey carbonaceous shales, quartzites, grey siliceous limestone, greenish and purplish shales, colitic and sandy limestone. The colitic limestones are fossiliferous and contain broken shell fragments of pelecypod and corals, etc.

This belt is exposed between Shankarpur ($30^{\circ} 10' 10''$; $78^{\circ} 15' 05''$) in the west to Bidasni ($30^{\circ} 59'$; $78^{\circ} 18'$) in the east. Further eastward extension of this belt is yet to be traced. The fossiliferous limestone occurs in a number of bands interbedded with purple and green shales. To the south, this belt is bounded by the Main Boundary Fault, south of which Siwaliks are exposed. In the north, it is overlain by the rocks of Krol Nappe.

Presence of fossiliferous limestone in this belt together with analogous structural disposition with Subathus of the Main belt in Himachal Pradesh, suggests that it may be the continuation of the autochthonous Eocene belt. Detailed work is in progress. In view of the importance of Tertiary sediments for oil exploration in the foot-hill zone of Himalaya, the discovery of these rocks is thus of considerable significance.

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A New Disease of 'Kopak' (*Celba pentandra* Gaertn.) Caused by *Colletotrichum gloeosporioides* (Pers. ex Fr.) von Arx

During the month of September and October 1975-76 many of the plants grown in nursery garden of Horticulture, Agricultural University, Jabalpur, showed severe leaf-spot and die-back symptoms. The disease affected the plants at all stages of growth but is very destructive in young stages. The size of the spots increased with age and finally two or more spots coalesced developing big necrotic areas covering nearly the entire leaf-let. Leaf scars were generally found to be the site of infection. Isolations from diseased portions of stems, leaves and petioles always yielded a species of *Colletotrichum*.

Pathogenicity tests were carried out on three to four-month old plants by spraying an aqueous suspension of conidia from 15 days old culture for 48 hours at high humidity. Suitable controls were also maintained. The disease symptoms appeared within 8 days. A similar *Colletotrichum* species was recovered from the artificially produced disease.

The characters of conidia of the *Celba* isolate are in agreement with those of *C. gloeosporioides* (Pers. ex Fr.) von Arx¹. The causal organism is identified *C. gloeosporioides* (Pers. ex Fr.) von Arx¹ and Rajak².

This is the first report of this fungus causing disease of 'Kopak'. The culture has been deposited in Plant Pathology Department, J.N. Agricultural University, Jabalpur.

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Occurrence of *Phoma exigua* Desm. on Sunflower

During Kharif 1975 numerous dark-brown to black lesions of various sizes and shapes were found on older leaves of sunflower in association with those caused by *Alternaria helianthi*. The surface of these lesions was rough and had a dark-grey or black sheen. Isolations from such lesions consistently yielded a pycnidial fungus which was identified as *Phoma exigua* Desm. (C.M.I. Acc. No. I.M.I. 1986 21). This isolate does not produce any pigment or crystal on Malt-agar plates.¹

Phoma oleracea var. *helianthi-tuberosi*³ and another species of *Phoma*² are known to attack sunflower. Pathogenicity test conducted with the isolate on 1-month old seedlings of sunflower (EC 68413) at 25°-30°C under humid conditions showed that the fungus is a weak parasite, capable of producing only minute lesions on leaves but readily enters the host through bruises or wounds. This is the first report of *Phoma exigua* occurring on sunflower from India. A culture of this fungus has been deposited with the Indian Type Culture Collection, I.A.R.I., New Delhi, under Acc. No. 2062.

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Two Additional Hosts of *Alternaria helianthi*

Alternaria helianthi is known to cause a severe leaf spot disease of Sunflower (*Helianthus annuus* L.) resulting in a appreciable loss in yield, seed weight etc.^{1,2}. In a study on reaction of large number of sunflower germ plasma material and other related species, it was observed that *H. debilis* and *H. argophyllus* to be infected by *A. helianthi*. *H. debilis* was highly susceptible throughout its growth period while *H. argophyllus* was highly resistant and infection occurred only under prolonged warm humid conditions. A normal feature observed in the case of *H. argophyllus* was, that, the foci of infection was generally leaf axil, resulting in the death and drooping of the leaf, although, the leaf spot symptom was not uncommon. The two isolates of *A. helianthi* from the above hosts did not differ in any way from the sunflower isolate and were cross inoculable.

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AICRP on Sunflower

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