Bull. zool. Surv. India, 6 (1-3) : 137-142, 1984

NEW RECORDS OF HOST-PLANTS AND DISTRIBUTION OF SOME COCCIDS FROM INDIA (HOMOPTERA : COCCOIDEA)

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ABSTRACT

Seven new host-plants and 14 new localities of occurrence have been reported for 12 species of coccids from India. Notes on known distribution and hostplants of these species have been added.

INTRODUCTION

The Coccid fauna of the Indian region is inadequately known. Our present knowledge is based on species reported from Sri Lanka (Green, 1896-1922), South India (Ayyar, 1930), West Bengal (Ghose, 1961), Bihar (Ali, 1968) and many other scattered papers which have been compiled in an Oriental catalogue (Ali, 1969-1971). As these insects, commonly known as scale insects and mealybugs, affect a large number of plants, many of which are of considerable economic importance, it is necessary to keep records of all the host-plants of various species, as well as the records of their distributional range.

While studying the coccid collections received in the Zoological Survey of India, Calcutta, during the last few years, the author has come across certain lots, which have been collected either from certain new host-plants or from new localities. Since most of the coccid species dealt with here are of pest status, their new record on plants like jute, sugarcane, tea and rose etc. attracts attention. Some species are being recorded for the first time from certain states of India.

Family MONOPHLEBIDAE

Drosicha stebbingi (Green)

Monophlebus stebbingii Green *in* Stebbing, 1902, *Dep. Notes Ins. Forestry* : 135.

Drosicha stebbingi : Ali, 1968, *J. Bombay nat. Hist. Soc.*, **65** (1) : 120.

Material examined : (i) 7 exs. in wet colln., mango tree, Karnal, Haryana, May 1980 (Coll. *Dr. O. B. Chhotani*) ; (ii) several exs. in wet colln., *Ficus bengalensis*, Indian Botanic Gardens, Shibpur, Howrah, 21.6.1979 (Coll. *R. K. Varshney & B. N. Das*).

New records : *Ficus bengalensis* as a host-plant. Besides, it is first record of this species from Haryana and West Bengal States.

Remarks : It is a polyphagous species occurring on mango, *Pyrus*, *Prunus*, *Butea monosperma* etc. in N. India and Pakistan. Earlier '*Ficus* spp.' have been recorded as host of it from Madhya Pradesh.

Some authors have considered *D. stebbingi* and *D. mangiferae* (Green) synonymous, whereas separation of *D. mangiferae* and *D. dalbergiae* (Green) has been questionable (*vide* Ali, 1968).

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Icerya formicarum Newst.

Icerya formicarum Newstead, 1897, *Entomologist's mon. Mag.*, **33** : 169.

Icerya formicarum : Rao, 1950, *Indian J. Ent.*, **12** : 54.

Material examined : (i) 4 exs. on 3 slides (badly mounted exs.), host : rose, Sabour (Distt. Bhagalpur, Bihar), 21.1.1976 (Coll. *R. P. Sinha*) (ZSI Regd. No. 357-359/H 15) ; (ii) several exs. in dry colln. (material misplaced), sugarcane leaf, Insectory, Shahjahanpur (U. P.), 12.10.1956 (Coll. *Z. A. Siddiqui*) (ZSI Regd. No. 6838/H 7).

New records : Sugarcane as a host-plant. Besides, this species is recorded for the first time from Bihar State (Bhagalpur) and U. P. State (Shahjahanpur).

Remarks : Although not as comman as *I. aegyptiaca* (Douglas), it occurs on *Anona*, *Psidium*, crotons etc., in some states of India (Assam, A. P., Karnataka, M. P., Maharashtra, W. Bengal) and Sri Lanka. *Rosa* sp. has been mentioned as its host by Rao (1950). However, it has not been included in sugercane insects by Box (1953).

Family Orthezиidae

Orthezia insignis Browne

Orthezia insignis Browne, 1887, *Quekett Micros. Club J.*, (2) **3** : 169.

Orthezia insignis Douglas, 1887, *Entomologist's mon. Mag.*, **24** : 169.

Orthezia insignis : Ghose, 1961, *Indian Agric.*, **5** (1) : 58.

Material examineds : 5 exs. on 2 slides and several exs. in dry & wet colln., *Clerodendron* sp., Samsing (500 m.), N. Bengal, March 1981 (Coll. *Dr. R. K. Varshney*).

New records : This species is recorded from Samsing forest, near Siliguri (Distt. Darjeeling), for the first time.

Remarks : This species is the only representative of its family found within the Indian region. It has been recorded on large number of host-plants including Lantana, *Hibiscus*, *Ixora*, citrus etc. It has been reported on *Clerodendron* from India and Singapore. Ghose (1961) collected it in W. Bengal from Kalimpong on Lantana, *Gardenia* and compositae plants. The present author also collected it from Kalimpong and Rangpo (Sikkim) on various plants, the details of which will be published in a later contribution on the coccids collected from N. Bengal and Sikkim.

Family Cerococcidae

Cerococcus indicus (Maskell)

Eriococcus paradoxus Var. *indicus* Maskell, 1897, *Trans. Proc. N. Z. Inst.*, **29** (1896) : 318.

Cerococcus hibisci Green, 1908, *Mem. Dep. Agric. India, ent. Ser.*, **2** (2) : 19,

Cerococcus hibisci : Ali, 1967, *Oriental Ins.*, **1** (1-2) : 29.

Material examined : (i) 4 exs. on a slide, host-Jute (Mesta), Barrackpur, Distt. 24-Parganas, 1972, (Coll. *R. L. Tripathi*) (ZSI Regd. No. 9373/H 7) ; (ii) Several exs. in wet colln., host : *Hibiscus* spp (2 species), Forest Deptt. garden, near Rly. Stn., Kalyani, 30.8.1979 (Coll. *Dr. R. K. Varshney & B. N. Das*).

New records : This species is reported here for the first time on the jute plant. This is also its first record from Kalyani (Distt. Nadia), W. Bengal.

Remarks : Ghose (1961) has earlier noticed *C. hibisci* in the districts of 24-Parganas and Burdwan in West Bengal. Besides, it has been reported from Bihar, Maharashtra and South India, and Sri Lanka and Burma,

on *Hibiscus*, *Gossypium* (including cotton), *Tephrosia* etc.

C. hibisci has been synonymized with *C. indicus* (Maskell) by Lambdin & Kosztarab (1977).

Family ASTEROLECANIIDAE

Asterolecanium sp.

Asterolecanium Targioni-Tozzetti, 1868, *Soc. Ital. di Sci. Nat. Atti.*, **11** : 41.

Asterolecanium : Ferris, 1955, *Atlas scale ins. N. Amer.*, **7** : 15.

Material examined : One ex. on a slide and several exs. in wet colln., Host : Tea, Darjeeling (W. Bengal), Aug. 1981 (Coll. *Dr. S. M. Mukherjee*) (ZSI Regd. No. 884/H 15).

New records : This is the first record of an *Asterolecanium* on the tea plant. This is also first record of this genus from North Bengal hills (Darjeeling).

Remarks : A close species, *Cerococcus ficoides* (Green), has been reported earlier on tea in 1903 by Watt & Mann, but it was not found by Das & Ganguli (1961) in their exhaustive studies from N. E. India.

This genus is represented in all zoo-geographical regions of the world, but out of a total of 19 species recorded from the Indian subcontinent, only 4 species have so far been collected from India proper (*vide* Ali, 1971). Material of the present lot requires further study for the specific identification. However, for generic determination, I considered the presence of 8-shaped geminate pores on the margin reliable.

Family PSEUDOCOCCIDAE

Ferrisia virgata (Ckll.)

Dactylopius virgatus Cockerell, 1893, *Entomologist*, **26** : 178.

Ferrisiana virgata : Ali, 1970, *Indian Mus. Bull.*, **5** (2) : 108.

Ferrisia virgata : Williams, 1970, *Bull. ent. Res.*, **60** : 139.

Material examined : (i) 6 exs. on 3 slides, *Rosa indica*, Baruipur (24-Parganas, W. Bengal), 27.11.1977 (coll. *B. N. Das*) (ZSI Regd. No. 702-704/H 15) ; (ii) 39 exs. on 12 slides, *Croton* sp., Dum Dum airport runway, Calcutta (W. B.), 3.12.1977 (coll. *B. N. Das*) (ZSI Regd. No. 705-716/H 15) ; (iii) 49 exs. on 12 slides, *Nerium odorum*, Park Street, near St. Xavier's College, Calcutta, 12.3.1979 (coll. *B. N. Das*) (ZSI Regd. No. 717-728/H 15).

New records : *Nerium odorum* and *Rosa indica* are new host-plants for this species.

Remarks : This is a highly polyphagous species which is world-wide in distribution. Ali (1970) states that it may be expected on almost any flowering plant in the tropics. In our country it has been already recorded from Assam, Bihar, W. Bengal, U. P., Maharashtra, and S. India, and also recorded from Maldive Is., Sri Lanka and Bangladesh (Green, 1922 ; Ayyar, 1930 ; Ghose, 1961 ; Ali, 1968, 1970).

Maconellicoccus hirsutus (Green)

Phenacoccus hirsutus Green, 1908, *Mem. Dept. Agric. India, ent. Ser.*, **2** (2) : 25.

Phenacoccus hirsutus : Ali, 1968, *J. Bombay nat. Hist. Soc.*, **65** (1) : 127.

Maconellicoccus hirsutus : Williams, 1970, *Bull. ent. Res.*, **60** : 149.

Material examined : One ex. (immature), cotton plant, Ludhiana, 20.11.1976 (coll. *R. K. Dhawan*) (ZSI Regd. No. 352/H 15).

New records : This species is recorded here for the first time from Punjab State.

Remarks : Commonly found on *Hibiscus* plants, this mealybug has also been reported

on *Tectona*, *Morus*, *Ficus* etc. In our country it is so far recorded from Bihar and Calcutta (Ali, 1970). Its record on Sugarcane from India was reported doubtful by Williams (*loc. cit.*). It was recorded on cotton from Pusa, Bihar by Misra (1924).

Planococcus lilacinus (Ckll.)

Pseudococcus lilacinus Cockerell, 1905, *Proc. Davenp. Acad. Sci.*, **10** : 128.

Planococcus lilacinus : Ali, 1970, *Indian Mus. Bull.*, **5** (2) : 90.

Material examined : 5 exs. on 3 slides (all exs. damaged and badly mounted), Trichur, Kerala (coll. *Dr. C. C. Abraham*) (ZSI Regd. No. 349-351/H 15).

New records : This is first record of this species from Kerala State.

Remarks : There is no indication of host-plant with the material reported here. However, it is a well known mealybug pest of many plants including pomegranate, sapota, *Mallotus*, *Gardenia* etc. In S. India this species is already reported from Coimbatore (Tamil Nadu) and Alamanda, Vizagapatnam District (Andhra Pradesh) (Ayyar, 1930). Present record extends its range to Kerala. Outside S. India, it has been reported from Calcutta in our country.

Incidentally it may be reported that in the Index of Oriental catalogue, this species has been shown belonging to '*Flanococcus*' (Ali, 1971 : 70), which is unintentional error for *Planococcus*.

Family Coccidae

Chloropulvinaria polygonata (Ckll.)

Pulvinaria polygonata Cockerell, 1905, *Proc. Davenp. Acad. Sci.*, **10** : 131.

Pulvinaria cellulosa Green : Ghose, 1961, *Indian Agric.*, **5** (1) : 65.

Chloropulvinaria polygonata : Ali, 1971, *Indian Mus. Bull.*, **6** (2) : 47.

Material examined : 11 exs. on 4 slides, Mango tree, Visva Bharati, Santiniketan (Distt. Birbhum), 5.4.1971 (Coll. *A. Chatterjee*) (ZSI Regd. No. 10171-10174/H 7).

New records : This species is reported new from Distt. Birbhum in West Bengal.

Remarks : Cockerell described this species in 1905, and not in 1907 as shown in Ali (1971). Originally described from Philippine Islands, this species has been collected in our region from Sri Lanka, Pakistan and India (Bihar, U. P., Orissa, West Bengal). Its well known host-plants are citrus and mango, on which it occurs frequently.

This species and *Pulvinaria cellulosa* Green have been considered identical by various workers. Ghose (*loc. cit.*) noted the latter on mango at Maldah in West Bengal.

Coccus hesperidum Linn.

Coccus hesperidum Linnaeus, 1758, *Syst. Nat.*, 10th ed., **1** : 455.

Coccus hesperidum : Ali, 1971, *Indian Mus. Bull.*, **6** (2) : 24.

Coccus hesperidum : Gill *et al.*, 1977, *Occ. Papers Ent., Calif.*, **24** : 18.

Material examined : 7 exs. on 4 slides, *Lonicera* sp., Srinagar (J. & K.), 8 Aug. 1981, (Coll. *R. C. Bhagat*).

New records : This species is newly reported on *Lonicera* sp. Besides, it is first record of this pest from Jammu & Kashmir State.

Remarks : This is type-species of the genus *Coccus*, over which Family Coccidae, and later Superfamily Coccoidea, have been erected.

A cosmopolitan species, it is already known to occur in our region from Burma, Sri Lanka, Pakistan and India. Its host-plants run in a long list including important crops like citrus, tea, mango, cashew nut, coconut, red gram etc. In India it has been previously recorded from West Bengal, Bihar, Tripura, Andhra Pradesh, Kerala, Karnataka, Gujarat and Goa.

Pulvinaria maxima Green

Pulvinaria maxima Green, 1904, *Entomologist's mon. Mag.*, **40** : 206.

Pulvinaria maxima : Ayyar, 1930, *Bull. agric. Res. Inst. Pusa*, **197** : 36.

Pulvinaria maxima : Ali, 1971, *Indian Mus. Bull.*, **6** (2) : 50.

Material examined : 19 exs. on 8 slides, *Jatropha pendurifolia*, Subhash Sarovar, Beliaghata, Calcutta (W. B.), 30.6.1978 (Coll. *R. K. Varshney & B. N. Das*) (ZSI Regd. No. 694-701/H 15).

New records : This species has not been reported from West Bengal by Ali (1971). Its host-plant species *Jatropha pendurifolia* is also a new record.

Remarks : It has been reported by Ayyar (1930) on '*Jatropha*' from Krishna District (Andhra Pradesh). Other known host-plants include nim (*Melia*) on which it is very common, and mulberry, grape-vine, cotton, kadam etc. The species is distributed in our region over Sri Lanka and South India, with a stray record from Aligarh (U. P.).

Two species *P. thespesiae* Green and *P. burkilli* Green have been suspected as more or less identical with this species, by Ali (*loc. cit.*).

Family DIASPIDIDAE

Aonidiella aurantii (Mask.)

Aspidiotus aurantii Maskell, 1879, *Trans. N. Z. Inst.*, **11** : 199.

Aonidiella aurantii : Takagi, 1969, *Insecta matsum.*, **32** (1) : 82.

Aonidiella aurantii : Ali, 1970, *Indian Mus. Bull.*, **5** (1) : 33.

Material examined : (i) 4 exs. on 4 slides, citrus leaf, Sarol (Chamba Distt., Himachal Pradesh), Jan. 1961 (Coll. *A. N. Chowdhuri*) ; (ii) 3 exs. on 3 slides, Salem Tabri, Ludhiana, 21.2.1976 (Coll. *B. S. Chahal*) (ZSI Regd. No. 171-173/H 15).

New records : The species is recorded here for the first time from Himachal Pradesh and Punjab States.

Remarks : Originally described on orange and lemons from Australia and New Zealand, this well known species has been collected on rose bushes, *Citrus* spp. (including pomelo), guava, jasmine, tea, mulberry etc. in our region from Nepal, Burma, Sri Lanka, Pakistan and many parts of India. It has been reported from Punjab region of present Pakistan by Pruthi & Mani (1945).

ACKNOWLEDGEMENTS

I am grateful to Dr. B. K. Tikader, Director, Zoological Survey of India, Calcutta, for providing facilities and encouragement. Sincere thanks are also recorded to Dr. D. J. Williams of the Commonwealth Institute of Entomology, London, and Shri S. M. Ali of our department, for determination of some material.

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