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A CHECKLIST OF ENCYRTIDAE (HYMENOPTERA : CHALCIDOIDEA) FROM UTTAR PRADESH (INDIA)

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INTRODUCTION

The family Encyrtidae is one of the largest among chalcidoidea next to Pteromalidae in number of recently accepted valid genera 587 (Noyes, 2001; Sureshan & Narendran, 2003). Within chalcidoidea the Encyrtidae is the most important family whose members are used in the biological control of insect pests. The family Encyrtidae is mostly primary internal parasitoids and hyperparasitoids of coccoidea (Homoptera), Lepidoptera, Diptera, Coleoptera and also attack on aphids and psyllids.

There are several publications on the Indian Encyrtidae mostly made by Mani, 1939, 1941; Agarwal, 1965; Shafee *et al.*, 1975; Hayat & Subba Rao, 1982; Hayat *et al.*, 1975; Hayat, 1985, 1986. In recent year several new genera and species of Encyrtidae described from various Indian states by Mani, 1989; Noyes & Hayat, 1984, 1994; Huang & Noyes, 1994; Hayat, 2002, 2003; Kazmi & Hayat, 1995, 1998; Hayat & Kazmi, 1999; Anis & Hayat, 1998, 2002; Singh & Hayat 2005. Accordingly an updated checklist of the Encyrtidae fauna of Uttar Pradesh is presented here. It includes 88 genera and 191 species.

Arrangement : In checklist, under each subfamily genera and under each genus species are arranged in alphabetical order followed by author(s) and year. Encyrtids genera known from state Uttar Pradesh are grouped under separate subfamilies. The suprageneric classification given by Trjapitzin, 1973a, b with modification by Noyes & Hayat, 1984 and Hayat, 2004 are followed.

SYNOPSIS OF THE CLASSIFICATION

Subfamily ENCYRTINAE Walker, 1837

Tribe ENCYRTINI Walker, 1837—*Encyrtus*, *Neocladia*.

Tribe AMIRINI Girault, 1913—*Amira*.

- Tribe BOTHRIOTHORACINI Howard, 1895—*Amicencyrtus, Cerchysiella, Cowperia, Hemileucocerus, Trjapitzinellus.*
- Tribe COPIDOSOMATINI Hoffer, 1995—*Ageniaspis, Coelopencyrtus, Copidosoma.*
- Tribe APHYCINI Hoffer, 1954—*Acerophagus, Aphycus, Astymachus, Homalotylus, Indaphucus, Mashhoodiella, Parablastothrix, Prochiloneurus.*
- Tribe HABROLEPIDINI Hoffer, 1995—*Adelencyrtus, Coccidencyrtus, Comperiella.*
- Tribe CERAPTEROCERINI Hoffer, 1955—*Anicetus, Cerapterocerus, Diversinervus, Lakshaphagus, Paraceraptrocerus.*
- Tribe ECTROMATINI Ashmead, 1900—*Achalcerinys, Cheiloneurus, Echthrogonatopus, Mahencyrtus, Zaomma.*
- Tribe CERCOBELINI Hoffer, 1953—*Cercobelus.*
- Tribe TRECHNITINI Hoffer, 1955—*Blastothrix, Cerchysius, Psyllaephagus, Trechnites.*
- Tribe DISCODINI Hoffer, 1955—*Agarwaleencyrtus, Diaphoreencyrtus, Ereencyrtus, Forcipestricis, Haligra, Helegonatopus, Lamennaisia, Metaphycus, Microterys, Neastymachus, Ooencyrtus, Parablatticida, Parechthrodryinus, Syrphophagus, Tachardiaeephagus, Tassonia, Trichomasthus, Tyndarichus.*
- Tribe ARRHENOPHAGINI Ashmead, 1900—*Arrhenophagus.*
- Tribe THOMSONISCINI Hoffer, 1956—*Thomsonisca.*
- Tribe PROTYNDARICHOIDINI Hayat, 2004—*Protyndarichoides.*
- Tribe MAYRIDIINI Hoffer, 1955—*Mayridia.*

Subfamily TETRACNEMINAE Howrad, 1892

- Tribe TETRACNEMINI Howard, 1892—*Adekititopus, Charitopus, Clausenia, Eotopus, Manicnemus, Neocharitopus, Paraclausenia, Sakencyrtus, Tetracnemus.*
- Tribe NEODUSMETIINI Hayat, 2004—*Neodusmentia.*
- Tribe AENASIINI Kerrich, 1967—*Aenasius, Blepyrus, Cladiscodes, Metaphaenodiscus, Neodiscodes, Neoplatycerus.*
- Tribe ANAGYRINI Hoffer, 1953—*Alamella, Anagyrus, Anomalencyrtus, Apoleptomastix, Callipteroma, Cremesina, Doliphoceras, Dusmetia, Gyranusoidea, Hamusencyrtus, Leptomastix, Rhopus.*

Subfamily ENCYRTINAE Walker, 1837

Genus *Acerophagus* Smith, 1880

Acerophagus solidus Hayat, 1981

Host : Parasitoids of Pseudococcidae (Homoptera).

Acerophagus serpentines Fatma & Shafee, 1988

Host : Parasitoids of Pseudococcidae (Homoptera).

Genus ***Achalcerinys*** Girault, 1915

Achalcerinys gorodkovi (Myartseva), 1983

Host : Unknown.

Achalcerinys lindus (Mercet), 1921

Host : Unknown.

Genus ***Adelencyrtus*** Ashmead, 1900

Adelencyrtus bimaculatus Alam, 1972

Host : *Aonidiella orientalis*; indet diaspids.

Adelencyrtus mayurai (Subba Rao), 1957

Host : *Melanaspis glomerata*.

Adelencyrtus moderatus (Howard), 1897

Host : *Duplachionaspis* sp., *Lepidonaspis* sp.

Adelencyrtus quadriguttus (Girault), 1932

Host : Red scale.

Genus ***Agarwaleencyrtus*** Hayat, 1981

Agarwaleencyrtus citri (Agarwal), 1965

Host : *Planococcus citri*, *Tomosvaryella* sp.

Genus ***Ageniaspis*** Dahlbom, 1857

Ageniaspis fulvicornis Kazmi & Hayat, 1998

Host : Polyembryonic parasitoids of larva of Yponomeutidae.

Genus ***Amicencyrtus*** Hayat, 1981

Amicencyrtus obscurus Hayat, 1981

Host : Unknown.

Genus ***Amira*** Girault, 1913

Amira fabrei Girault, 1913

Host : Parasites of spider eggs.

Genus ***Anicetus*** Howard, 1896

Anicetus aligarhensis Hayat et al., 1975

Host : *Ceroplastes* sp.

Anicetus beneficus Ishii & Yasumatsu, 1954

Host : *Ceroplastes* sp., *Ceroplastes actiniformis*.

Anicetus deltoideus Annecke, 1967

Host : *Coccus* sp.

Anicetus dodonia Ferriere, 1935

Host : *Ceroplastes* sp., *Ceroplastes floridensis*; *C. pseudoceriferus*; *Pulvinaria maxima*.

Anicetus howardi Hawat et al., 1965

Host : *Ceroplastes* sp.

Anicetus yasumatsu Subba Rao, 1977

Host : *Ceroplastes* sp.

Genus ***Aphyucus*** Mayr, 1876

Aphyucus sapporoensis Compere & Annecke, 1961

Host : Parasitoids of pseudococidae (Homoptera).

Genus ***Arrhenophagus*** Aurivillius, 1888

Arrhenophagus chionaspidis Aurivillius, 1888

Host : *Chionaspis ramakrishnai*, *Contigaspis* sp., *Pinnaspis strachani*.

Genus ***Astymachus*** Howard, 1898

Astymachus felix Singh & Hayat, 2005

Host : Unknown.

Astymachus japonicus Howard, 1898

Host : *Saccharococcus sacchari*.

Genus ***Blastothrix*** Mayr, 1876

Blastothrix siddiquii (Bhatnagar), 1952

Host : *Eulecanium tiliae*.

Genus ***Cerapterocerus*** Westwood, 1833

Cerapterocerus virens Agarwal, 1963

Host : *Planococcus citri*, Hyperparasitoid of coccidae (Homoptera) via encyrtidae.

Genus ***Cerchysiella*** Girault, 1914

Cerchysiella harliga Hayat & Basha, 2003

Host : Unknown.

Cerchysiella kamathi (Mani & Saraswat), 1974

Host : Unknown.

Cerchysiella laticapra (Shafee & Fatima), 1984

Host : Unknown.

Genus ***Cerchysius*** Westwood, 1832

Cerchysius longicorpus Fatima & Shafee, 1994

Host : Parasitoids of Chamaemyiidae (Diptera).

Genus ***Cercobelus*** Walker, 1842

Cercobelus saki Hayat, 2005

Host : Unknown.

Genus ***Cheiloneurus*** Westwood, 1833

Cheiloneurus bangalorensis (Subba Rao), 1957

Host : *Atonina graminis*, *Atonina* sp.

Cheiloneurus gonatopodis Perkins, 1906

Host : Pupae of *Richardsidryinus* on sugarcane.

Cheiloneurus latifrons Hayat, Alam & Agarwal, 1975

Host : *Peliococcus* sp. on *Prosopis spicegera*.

Cheiloneurus longipennis Fatma & Shafee, 1988

Host : Unknown.

Cheiloneurus noyesi Anis & Hayat, 2002

Host : Unknown.

Cheiloneurus pyrillae Mani, 1939

Host : Eggs of *Pyrilla* sp. on sugarcane, *Saccharum officinarum*.

Cheiloneurus yasumatsui Trjapitzin, 1971

Host : Unknown.

Genus ***Coccidencyrtus*** Ashmead, 1900

Coccidencyrtus mandibularis (Hayat *et al.*), 1975

Host : *Phenacaspis* sp., *Pinnaspis strachani*.

Coccidencyrtus shafeei (Hayat *et al.*), 1975

Host : Parasites of Diaspididae (Homoptera).

Genus ***Coelophencyrtus*** Timberlake, 1919

Coelophencyrtus Krishnamurtii (Mahdihassan), 1957

Host : *Xylocopa tenuiscapa*.

Genus ***Comperiella*** Howard, 1906

Comperiella aspidiotiphaga Subba Rao, 1966

Host : *Aonidiella orientalis*, *Aspidiotus* sp.

Comperiella indica Ayyar, 1934

Host : *Aspidiotus tamarindi*.

Comperiella lemniscata Compere & Annecke, 1961

Host : *Aonidiella orientalis*.

Comperiella unifasciata Ishii, 1925

Host : Parasites of Diaspididae (Homoptera).

Genus ***Copidosoma*** Ratzeburg, 1844

Copidosoma floridanum (Ashmead), 1900

Host : *Plusia signata*, *Cosmophila sabulifera*.

Copidosoma gracilis (Kaul & Agarwal), 1985

Host : Unknown.

Copidosoma transversum Kazmi & Hayat, 1998

Host : Unknown.

Copidosoma varicorne (Nees), 1834

Host : *Anarsia ephippias*, *A. sigma*, *Dichomeris eridontis*, *Eucosma* sp.

Genus ***Cowperia*** Girault, 1919

Cowperia indica (Kerrich), 1963

Host : *Cryptolaemus montronzieri*, *Jauravia* sp., *Scymnus* sp., *Pseudococcus* sp., *Rastrococcus iceryoides*.

Genus ***Diaphorencyrtus*** Hayat, 1981

Diaphorencyrtus aligarhensis (Shafee et al.), 1975

Host : *Diaphorina* sp., *D. cardiae*, *Psylla* sp.

Genus ***Diversinervus*** Silvestri, 1915

Diversinervus madgaoensis Hayat et al., 1975

Host : *Ceroplastes actiniformis*, *Ceroplastes pseudoceriferus*.

Genus ***Echthrogonatopus*** Perkins, 1906

Echthrogonatopus nigricornis (Hayat), 1980

Host : Hyperparasites of leafhoppers (Homoptera : Auchenorrhyncha).

Echthrogonatopus parvus (Hayat), 1980

Host : Hyperparasites of leafhoppers (Homoptera : Auchenorrhyncha).

Genus ***Encyrtus*** Latreille, 1809

Encyrtus lecaniorum (Mayr), 1876

Host : *Coccus viridis*, *Chloropulvinaria* sp., *C. psiddi*, *Lecanium* sp., *Parasaissetia nigra*, *Saissetia coffeeae*, *S. privigna*.

Genus ***Ereencyartus*** Mahdihassan, 1923

Ereencyrtus dewitzii Mahdihassan, 1923

Host : *Kerria communis*, *K. fici*, *K. lacca*, *K. nagoliensis*, *Metatachardia conchiferata*.

Genus ***Forcipestricis*** Burks, 1968

Forcipestricis dasys Hayat, 2003

Host : Unknown.

Genus ***Haligra*** Noyes & Hayat, 1984*Haligra concolor* Noyes & Hayat, 1984

Host : Unknown.

Genus ***Helegonatopus*** Perkins, 1906*Helegonatopus pulchricornis* Hayat & Verma, 1978

Host : Unknown.

Genus ***Hemileucocerus*** Hoffer, 1976*Hemileucocerus longicornis*, Hayat, 2003

Host : Unknown.

Genus ***Homalotylus*** Mayr, 1876*Homalotylus albiclavatus* (Agarwal), 1970Host : *Pullus* sp. on *Robusta coffee*; Coccinellids predaceous on *Coccidhystrix insolita* on *Solanum melongena*; *Achyranthes aspera*; *Nipaecoccus viridis* on *Tephrosia purpurea*; *Zizyphus* sp.; *Pseudococcus* sp. on *citrus medica*.*Homalotylus eytelweinii* (Ratzeburg), 1844Host : *Adonia variegata*; *Brumoides suturalis*; *Chilocorus* sp.; *C. bijugus*; *Chilomenes* sp.; *Menochilus sexmaculata*; *Rodolia* sp.; *R. cardinalis*; *R. fumida*; *R. guerni*; *Dorsicha stebbengi*; *Icerya purchasi*; *I. pilosa nordi*; *Lecanium* sp. on *Jack*; *Artocarpus heterophyllus*; *Nipaecoccus viridis* on *Citrus medica*.*Homalotylus ferrierei* Hayat et al., 1975Host : Coccinellids predaceous on *Cerococcus* sp. on *Hibiscus* sp. *C. hibisci*.*Homalotylus flaminius* (Dalman), 1820Host : Coccinellids predaceous on *Nipaecoccus viridis* on *Solanum* sp.*Homalotylus formosus* Anis & Hayat, 1998

Host : Unknown.

Homalotylus indicus (Agarwal), 1966.Host : *Scymnus* sp. indet. *Scymnini* on *Azadirachta indica*; Coccinellids predaceous on *Coccidohystrix insolita* on *Solanum melongena*; *Nipaecoccus viridis* on Mulberry; *Nerium* sp.; *Zizyphus* sp.; *Planococcus citri* on *Citrus medica*; *Rastrococcus iceryoides* on *Capparis* sp. indet. mealybugs on wild plant and *Solanum* sp.*Homalotylus longipedicellus* (Shafee & Fatma), 1984Host : Coccinellids predaceous on *Aonidiella orientalis* (Newstead) on *Dalbergia sissoo*.*Homalotylus mangiclavus* (Fatma & Shafee), 1989

Host : Unknown.

Homalotylus terminalis (Say), 1828Host : *Chilomenes sexmaculatus*; *Scymnus quadrillum*.

Homalotylus turkmenicus Myartseva, 1981

Host : Coccinellids predaceous on : *Centrococcus* sp. on *Wittmania somnifera*; *Coccidohystrix insolita* on *Solanum melongena*; *W. somnifera*; *Nipaecoccus* sp. on *Peristrophe bicalyculata*; coccids on *Dalbergia sisso*, *Zizyphus* sp.; mealybugs on *Solanum* sp.

Genus ***Indaphycus*** Hayat, 1981

Indaphycus planus Hayat, 1981

Host : Unknown.

Genus ***Lakshaphagus*** Mahdihassan, 1931

Lakshaphagus fusiscapus (Agarwal), 1965

Host : *Cerococcus* sp.; *Ceroplastodes* sp.; *Planococcus citri*.

Genus ***Lamennaisia*** Girault, 1922

Lamennaisia ambiguua (Nees), 1834

Host : Parasitoids of diaspinae scale.

Genus ***Mahencyrtus*** Masi, 1917

Mahencyrtus assamensis Singh & Agarwal, 1993

Host : Unknown.

Mahencyrtus ranchiensis Fatima & Shafee, 1994

Host : Unknown.

Genus ***Mashhoodiella*** Hayat, 1972

Mashhoodiella echthromorpha Hayat, 1972

Host : *Ceroplastes* sp.

Genus ***Mayridia*** Mercet, 1921

Mayridia caerulea (Hayat & Verma), 1978

Host : Unknown.

Mayridia miranda Hayat, 2003

Host : Unknown.

Mayridia splendida Hayat, 2003

Host : Unknown.

Genus ***Metaphycus*** Mercet, 1917

Metaphycus breviulus Kaul & Agarwal, 1985

Host : Unknown.

Metaphycus gilvus Compere, 1957

Host : *Ceroplastes* sp.; *Ceroplastodes cajani*; *Chloropulvinaria* sp.; *Chloropulvinaria polygonata*; *Pulvinaria maxima*.

Metaphycus laticapus Alam, 1972

Host : (?) *Aonidiella orientalis*.

Metaphycus zebratus (Mercet), 1917

Host : *Ceroplastodes cajani*; (?) *Aonidiella orientalis*; (?) *Nipaecoccus* sp.

Genus ***Microterys*** Thomson, 1856

Microterys anomalococci Shafee et al., 1975

Host : *Anomalococcus crematogasteri*.

Genus ***Neastymachus*** Girault, 1915

Neastymachus axillaries Singh, Agarwal & Basha, 1991

Host : Unknown.

Neastymachus burksi (Shafee et al.), 1975

Host : *Anomalococcus crematogasteri*.

Neastymachus cerococci (Shafee et al.), 1975

Host : *Cerococcus* sp.; *Cerococcus hibisci*; *C. indicus*.

Genus ***Neocladia*** Perkins, 1906

Neocladia indica (Agarwal), 1970

Host : *Pseudococcus* sp.

Genus ***Ooencyrtus*** Ashmead, 1900

Ooencyrtus acus Huang & Noyes, 1994

Host : Hyperparasitoid of prepupa or pupae of *Epiricania melanoleuca*.

Ooencyrtus guamensis Fullaway, 1946

Host : Pupal parasitoids of Syrphidae (Diptera); *Paragus auritus*; *Asarkira pura*; *Ischiodon scutellaris*.

Ooencyrtus manii Huang & Noyes, 1994

Host : Eggs of *Pyrilla perpusilla*.

Ooencyrtus neptunus Huang & Noyes, 1994

Host : Unknown.

Ooencyrtus segestes Trjapitzin, 1965

Host : Unknown.

Ooencyrtus utetheisae (Risbec), 1951

Host : Eggs of *Utetheisae pulchella* (Lep. : Arctidae); Eggs of *Anoplocnemis curvipes*; *Pseudotheraptus wayi*; *Clavigralla elongate*; *C. tomentosicollis*; *Mictis profana*; *Nezara viridula*.

Genus ***Parablastothrix*** Mercet, 1917

Parablastothrix zygonomus Khan, 1983

Host : *Acerocercops zygonoma*.

Genus ***Parablatticida*** Girault, 1915

Parablatticida aligarhensis Hayat, 2003

Host : Unknown.

Parablatticida breviclava Hayat, 2003

Host : Unknown.

Parablatticida citri (Mercet) 1921

Host : Unknown.

Genus ***Paraceraptrocerus*** Girault, 1920

Paraceraptrocerus italicus (Masi), 1917

Host : *Ceroplastes* sp.

Genus ***Parechthrodryinus*** Girault, 1916

Parechthrodryinus clavicornis (Cameron), 1913

Host : *Kerria chinensis*; *K. communis*; *K. lacca*; *Paratachardia lobata*.

Parechthrodryinus excelsus Hayat, 2003

Host : *Rastrococcus iceryoides* on *Mangifera indica*.

Genus ***Prochiloneurus*** Silvestri, 1915

Prochiloneurus testaceus (Agarwal), 1965

Host : *Coccus viridis*; *Nipaecoccus* sp.; *Nipaecoccus viridis*; *Rastrococcus iceryoides*.

Genus ***Protynnarichoides*** Noyes, 1980

Protynnarichoides aligarhensis (Fatima & Shafee), 1984

Host : Unknown.

Protynnarichoides indicus Singh & Agarwal, 1993

Host : Unknown.

Protynnarichoides punctatifrons Sushil & Khan, 1996

Host : Unknown.

Genus ***Psyllaephagus*** Ashmead, 1900

Psyllaephagus africanus Prinsloo, 1981

Host : Parasites or hyperparasites of nymph of Psyllidae (Homoptera).

Psyllaephagus aligarhensis Shafee *et al.*, 1975

Host : *Psylla* sp.

Genus **Syrphophagus** Ashmead, 1900

Syrphophagus aeruginosus (Dalman), 1820

Host : Puparia of *Syrphis* sp.

Syrphophagus aphidivorus (Mayr), 1876

Host : *Aphis craccivora*; *A. gossypii*; *A. laburni*; *A. pomi*; *Rhopalosiphum maidis*; *Uroleucom compositae*.

Syrphophagus hakki Agarwal, 1962

Host : Puparia of *Syrphis* sp.

Syrphophagus hofferi (Hayat), 1973

Host : Aphids.

Syrphophagus kumaoensis (Bhatnagar), 1952

Host : *Aphis helichrysi*.

Genus **Tachardiaephagus** Ashmead, 1904

Tachardiaephagus tachardiae (Howard), 1896

Host : *Kerria albizziae*; *K. chinensis*; *K. communis*; *K. lacca*.

Genus **Tassonia** Girault, 1921

Tassonia aphidivora (Shafee, Alam & Agarwal), 1975

Host : Parasites of Aphididae (Homoptera).

Tassonia gloriae Girault, 1921

Host : Parasites of Aphididae (Homoptera).

Tassonia magniclava (Hayat & Subba Rao), 1981

Host : *Hysteroneura setariae*; *Longiunguis sacchari*; *Myzus persicae*.

Genus **Thomsonisca** Ghesquiere, 1946

Thomsonisca indica Hayat, 1970

Host : *Anoidiella orientalis*.

Thomsonisca pakistanensis (Ahmad), 1970

Host : *Aspidiotus destructor*; *Aulacaspis* sp.; *Phenacaspis* sp.

Genus **Trechnites** Thomson, 1876

Trechnites aligarhensis Hayat, Alam & Agarwal, 1975

Host : Psyllids.

Genus **Trichomasthus** Thomson, 1876

Trichomasthus frontalis Alam, 1957

Host : Parasites of Coccidae, Diaspididae, Eriococcidae and Pseudococcidae (Homoptera).

Genus ***Trjapitzinellus*** Viggiani, 1967

Trjapitzinellus obscurus (Mercet), 1921

Host : Parasites of immature stages of Coniopterygidae (Neuroptera).

Genus ***Tyndarichus*** Howard, 1910

Tyndarichus nitidulus Hayat, 2003

Host : Unknown.

Genus ***Zaomma*** Ashmead, 1900

Zaomma lambinus (Walker), 1838

Host : *Chrysomphalus aonidum*; *Pseudaulacaspis pentagona*.

Subfamily TETRACNEMINAE Howard, 1892

Genus ***Adektitopus*** Noyes & Hayat, 1984

Adektitopus longipennis (Shafee & Avasthi), 1983

Host : Unknown.

Genus ***Aenasius*** Walker, 1846

Aenasius advena Compere, 1937

Host : *Ferrisia virgata*.

Genus ***Alamella*** Agarwal, 1966

Alamella flava Agarwal, 1966

Host : *Eriococcus greeni*; *Maconelliococcus hirsutus*; *Nipaecoccus* sp.; *Nipaecoccus viridis*.

Genus ***Anagyrus*** Howard, 1896

Anagyrus agraensis Saraswat, 1975

Host : Unknown.

Anagyrus aligarhensis Agarwal, 1965

Host : *Saccharicoccus sacchari*.

Anagyrus almoriensis Shafee et al., 1975

Host : *Nipaecoccus viridis*.

Anagyrus aquilonaris (Noyes & Hayat), 1984

Host : Parasites of Pseudococcidae (Homoptera) and Coccinellidae (Coleoptera).

Anagyrus citri Agarwal, 1965

Host : *Planococcus citri*.

Anagyrus clavatus Sushil & Khan, 1996

Host : Indt. Coccids.

Anagyrus diversicornis Mercet, 1921

Host : Unknown.

Anagyrus fatimae Fatima & Agarwal, 1994

Host : Unknown.

Anagyrus flavidus Shafee *et al.*, 1975

Host : *Planococcoides robustus*; *Pseudococcus* sp.

Anagyrus frontolatus Sushil & Khan, 1996

Host : Unknown.

Anagyrus gracilis (Hayat), 1970

Host : Parasites of Pseudococcidae (Homoptera).

Anagyrus indicus (Subba Rao), 1967

Host : *Ferrisia virgata*.

Anagyrus inopus Noyes & Hayat, 1975

Host : *Nipaecoccus* sp.; *Nipaecoccus viridis*; *Centrococcus* sp.; *Ferrisia virgata*; *Rastrococcus iceryoides*.

Anagyrus kamali Moursi, 1948

Host : Parasitoids of Coccids.

Anagyrus longiventris Hayat, 1979

Host : Unknown.

Anagyrus mandibularis Sushil & Khan, 1996

Host : Indt. Coccids.

Anagyrus pseudococci (Girault), 1915

Host : Indet. Scales.

Anagyrus punctulatus Agarwal, 1965

Host : *Saccharicoccus sacchari*.

Anagyrus sawadi Ishii, 1928

Host : *Rastrococcus iceryoides*.

Anagyrus scutomaculatus Agarwal, 1965

Host : *Nipaecoccus viridis*; *Pseudococcus* sp.

Anagyrus shahidi Hayat, 1979

Host : Unknown.

Anagyrus subflaviceps (Girault), 1915

Host : Parasites of Pseudococcidae (Homoptera) and Coccinellidae (Coleoptera).

Anagyrus tibimaculatus Agarwal, 1965

Host : *Planococcoides robustus*; *Planococcus citri*.

Genus ***Anomalencyrtus*** Hayat & Verma, 1980

Anomalencyrtus longicornis Hayat & Verma, 1980

Host : Unknown.

Genus ***Apoleptomastix*** Kerrich, 1982

Apoleptomastix spoliata Kerrich, 1982

Host : Parasitoids of Pseudococcidae (Homoptera).

Genus ***Blepyrus*** Howard, 1898

Blepyrus insularis (Cameron), 1886

Host : Parasitoids of Pseudococcidae (Homoptera).

Genus ***Callipteroma*** Motschulsky, 1863

Callipteroma sexguttata Motschulsky, 1863

Host : Parasitoids of Pseudococcidae (Homoptera).

Callipteroma testacea Motschulsky, 1863

Host : Indet. Sugarcane Mealybug.

Genus ***Charitopus*** Foerster, 1856

Charitopus apicatus (Mani & Saraswat), 1974

Host : Parasitoids of Pseudococcidae (Homoptera).

Charitopus fulviventris Foerster, 1860

Host : Parasitoids of Pseudococcidae (Homoptera).

Charitopus panchgania (Mani & Saraswat), 1974

Host : Parasitoids of Pseudococcidae (Homoptera).

Genus ***Cladiscodes*** Subba Rao, 1977

Cladiscodes sacchari Subba Rao, 1977

Host : *Saccharicoccus sacchari*.

Genus ***Clausenia*** Ishii, 1923

Clausenia lacca (Agarwal), 1962

Host : *Kerria lacca*.

Clausenia longipennis Shafee & Avasthi, 1983

Host : *Coccidohystrix insolitus*.

Genus ***Cremesina*** Noyes & Hayat, 1984

Cremesina aquilonaris Noyes & Hayat, 1984

Host : Unknown.

Genus **Doliphoceras** Mercet, 1921*Doliphoceras gracilis* Hayat, 1970

Host : Parasites of Pseudococcidae (Homoptera)

Genus **Dusmetia** Mercet, 1921*Dusmetia fuscipennis* (Noyes & Hayat), 1984

Host : Unknown.

Genus **Eotopus** Noyes & Hayat, 1984*Eotopus beneficus* (Shafee), 1981Host : *Icerya pilosa*.Genus **Gyranusoidea** Compere, 1947*Gyranusoidea ceroplastis* (Agarwal), 1965Host : *Ceroplastis rubens*.*Gyranusoidea flava* Shafee et al., 1975Host : *Planococcoides robustus*.*Gyranusoidea indica* Shafee et al., 1975Host : *Nipaecoccus viridis*.*Gyranusoidea mirzai* (Agarwal), 1965Host : *Ferrisia virgata*; *Icerya formicarum*; *Maconellicoccus hirsutus*; *Nipaecoccus* sp.;
Nipaecoccus viridis; *Planococcus citri*; *Rastrococcus iceryoides*.Genus **Hamusencyrtus** Subba Rao & Hayat, 1979*Hamusencyrtus mymaroides* (Compere et al.), 1960Host : *Saccharicoccus sacchari*.Genus **Leptomastix** Foerster, 1856*Leptomastix aligarhensis* Khan & Shafee, 1975

Host : Parasites of Pseudococcidae.

Leptomastix brevipediculus Khan & Shafee, 1975

Host : Parasites of Pseudococcidae.

Leptomastix gunturiensis Shafee, 1972Host : *Nipaecoccus viridis*.*Leptomastix longiscapus* Khan & Agarwal, 1976

Host : Parasites of Pseudococcidae.

Leptomastix nigrocincta Risbec, 1959

Host : Parasites of Pseudococcidae (Homoptera).

Leptomastix nigrocoxalis Compere, 1928

Host : *Centrococcus* sp.; *Coccidohystrix insolitus*; *Icerya aegyptica*; *Nipaecoccus* sp.; *Nipaecoccus viridis*; *Phenacoccus* sp.; *Planococcus citri*.

Leptomastix tsukumiensis Tachikawa, 1963

Host : Parasites of Pseudococcidae (Homoptera).

Genus ***Manicnemus*** Hayat, 1981*Manicnemus indicus* (Mani & Saraswat), 1974

Host : *Greenaspis divergens*.

Genus ***Metaphaenodiscus*** Mercet, 1921*Metaphaenodiscus aligarhensis* Hayat, 1981

Host : Unknown.

Metaphaenodiscus proximus (Hayat), 1981

Host : Unknown.

Genus ***Neocharitopus*** Hayat, Alam & Agarwal, 1975*Neocharitopus orientalis* (Agarwal), 1965

Host : (?) *Chionaspis* sp.; *Coccidohystrix insolitus*.

Genus ***Neodiscodes*** Compere, 1931*Neodiscodes indicus* Narayan & Subba Rao, 1960

Host : (?) *Coccus viridis*; *Icerya formicarum*; *Nipaecoccus* sp.; *Nipaecoccus viridis*; *Planococcoides robustus*.

Genus ***Neodusmentia*** Kerrich, 1964*Neodusmentia sangwani* (Subba Rao), 1957

Host : *Atonina* sp.; *Atonina indica*.

Genus ***Neoplatycerus*** Subba Rao, 1965*Neoplatycerus tachikawai* Subba Rao, 1965

Host : (?) *Pulvinaria* sp.; *Icerya seychellarum*; *Rastrococcus iceryoides*.

Genus ***Paraclausenia*** Hayat, 1980*Paraclausenia herbicola* Hayat, 1980

Host : Unknown.

Genus ***Rhopus*** Foerster, 1856*Rhopus aligarhensis* Shamim & Shafee, 1989

Host : Unknown.

Rhopus desantisiellus Ghesquiere, 1957

Host : Sugarcane mealybug.

Rhopus nigroclavatus (Ashmead), 1902

Host : Unknown.

Rhopus qadrii (Shafee et al.), 1975

Host : *Ripersia* sp.

Genus *Sakencyrtus* Hayat, 1981

Sakencyrtus mirus Hayat, 1981

Host : Unknown.

Genus *Tetracnemus* Westwood, 1837

Tetracnemus heterocornis Mani & Saraswat, 1974

Host : Unknown.

Tetracnemus peninsularis (Mani & Saraswat), 1974

Host : Unknown.

Tetracnemus perspicuous Hayat & Kazmi, 1999

Host : Unknown.

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REFERENCES

- Alam, S. M. 1957. Taxonomy of some encyrtid parasites (Hymenoptera : Chalcidoidea) of British scale insects. *Trans. R. Ent. Soc. London*, **109** : 421-426.
- Agarwal, M. M. 1965. Taxonomy of encyrtid parasites (Hymenoptera : Chalcidoidea) of Indian coccoidea, *Acta Hymenopterologica*, **10** : 37-97.
- Anis, S. B. & Hayat, M. 1998. The Indian species of *Homalotylus* (Hymenoptera : Encyrtidae). *Oriental Ins.*, **32** : 191-218.
- Anis, S. B. & Hayat, M. 2002. A revision of Indian species of *Cheiloneurus* Westwood (Hymenoptera : Chalcidoidea : Encyrtidae). *Oriental Ins.*, **36** : 129-209.
- Fatima A. & Shafee, S. A. 1994. Studies on the taxonomy of the India Encyrtids (Hymenoptera : Encyrtidae). *A. M. U. (Zool. Ser.) on Indian Ins. Type*, **15** : 114pp.
- Hayat, M. 1970. New species of Encyrtidae (Hymenoptera : Chalcidoidea) reared from coccids. *Mushi*, **44** : 55-63.

- Hayat, M. 1979. Taxonomic notes on Indian Encyrtidae (Hymenoptera : Chalcidoidea) V. *Oriental Ins.*, **33** : 349-407.
- Hayat, M. 1981. Taxonomic notes on Indian Encyrtidae (Hymenoptera : Chalcidoidea) III. *Colemania*, **1**(1) : 13-34.
- Hayat, M. 1985. "Family Encyrtidae" in "The Chalcidoidea (Insecta : Hymenoptera) of Indian and the adjacent countries. Part I." (B. R. Subba Rao & M. Hayat eds.). *Oriental Ins.*, **19** : 192-223.
- Hayat, M. 1986. "Family Encyrtidae" In "The Chalcidoidea (Insecta : Hymenoptera) of India and the adjacent countries. Part II." (B. R. Subba Rao & M. Hayat eds.). *Oriental Ins.*, **20** : 430 pp.
- Hayat, M. 1989. Taxonomic notes on Indian Encyrtidae (Hymenoptera : Chalcidoidea) IV. *Oriental Ins.*, **23** : 275-285.
- Hayat, M. 2003. Record and descriptions of India Encyrtidae (Hymenoptera : Encyrtidae). *Oriental Ins.*, **37** : 187-260.
- Hayat, M. 2004. A review of the classification of Encyrtidae (Hymenoptera : Chalcidoidea). In *Perspective on Biosystematics and Biodiversity* TCN Com. Vol. 349-361.
- Hayat, M. 2005. Description of a new species of *Cercobelus* from India (Hymenoptera : Chalcidoidea : Encyrtidae). *Shashpa*, **12**(1) : 1-3.
- Hayat, M. & Subba Rao, B. R. 1981. A systematic catalogue of Encyrtidae (Hymenoptera : Chalcidoidea) from Indian subcontinent. *Colemania*, **1** : 103-125.
- Hayat, M. & Kazmi, S. I. 1999. The species of *Tetrachnemus* from India (Hymenoptera : Chalcidoidea : Encyrtidae). *Oriental Ins.*, **33** : 279-295.
- Hayat, M. Alam, S. M. & Agarwal, M. M. 1975. Taxonomic survey of encyrtid parasites (Hymenoptera : Encyrtidae) in India. *A. M. U. (Zool. Ser.) on Indian Ins. Type*, **9** : 1-112.
- Huang, D. W. & Noyes, J. S. 1994. A revision of the Indo-Pacific species of *Ooencyrtus* (Hymenoptera : Encyrtidae) parasitoids of immature stages of economically important insect species (mainly Hemiptera and Lepidoptera). *Bull. Nat. His. Mus. London (Ento.)*, **63**(1) : 1-136.
- Kazmi, S. I. & Hayat, M. 1995. The species of *Trechnites* (Hymenoptera : Encyrtidae) from India and Sri Lanka. *Shashpa*, **2**(2) : 87-94.
- Kazmi, S. I. & Hayat, M. 1998. Revision of the Indian Copidosomatini (Hymenoptera : Chalcidoidea : Encyrtidae). *Oriental Ins.*, **32** : 287-362.
- Mani, M. S. 1939. Descriptions of new and records of some known chalcidoid and other hymenopterous parasites from India. *Indian J. Entomology*, **1** : 69-99.
- Mani, M. S. 1941. Studies on Indian parasitic Hymenoptera I. *Indian J. Entomology*, **3** : 25-36.

- Mani, M. S. 1989. *The fauna of India and the adjacent countries Chalcidoidea (Hymenoptera) Part I. Zoological Survey of India*, 1-1067.
- Noyes, J. S. 2001. *Interactive catalogue of world chalcidoidea 2001. (CD-ROM). Disk Yu, Bentall centre, Canada.*
- Noyes, J. S. & Hayat, M. 1984. A review of genera of Indo-Pacific Encyrtidae (Hymenoptera : Chalcidoidea). *Bull. Brit. Mus. (Nat. Hist.), Entomology*, **48** : 131-395.
- Noyes, J. S. & Hayat, M. 1994. *Oriental Mealybug parasitoids of Anagyrini (Hymenoptera : Chalcidoidea). CAB Int. Oxon.*
- Shafee, S. A., Alam, S. M. & Agarwal, M. M. 1975. Taxonomic survey of encyrtid parasites (Hymenoptera : Encyrtidae) in India. *A. M. U. (Zool. Ser.) on Indian Ins. Type*, **10** : 125 pp.
- Singh, S. & Hayat, M. 2005. Description of three new and record of two known species of Encyrtidae (Hymenoptera : Chalcidoidea) from Northeast India. *Entomon*, **30**(1) : 57-66.
- Sureshan, P. M. & Narendran, T. C. 2003. A Checklist of Pteromalidae (Hymenoptera : Chalcidoidea) from the Indian subcontinent. *Zoos' Print Journal*. **18**(5) : 1099-1110.
- Sushil, S. N. & Khan, M. A. 1996a. Five new species of genus *Anagyrus* Howard (Hymenoptera : Encyrtidae) from northern India. *J. Insect Sci.*, **9**(1) : 19-27.
- Sushil, S. N. & Khan, M. A. 1996b. A new species of genus *Protyndarichoides* Noyes (Hymenoptera : Encyrtidae) from northen India. *J. Insect Sci.*, **9**(2) : 112-114.
- Trjapitzin, V. A. 1973a. The Classification of parasitic Hymenoptera of family Encyrtidae (Hymenoptera : Chalcidoidea). Part-I, Survey of the system of classification. The subfamily Tetracneminae Howard 1892 [In Russian]. *Ent. Obozr.*, **52** : 163-175.
- Trjapitzin, V. A. 1973b. The Classification of parasitic Hymenoptera of family Encyrtidae (Hymenoptera : Chalcidoidea). Part-II. The subfamily Encyrtinae Walker, 1873, 1892 [In Russian]. *Ent. Obozr.*, **52** : 416-429.
- Zeya, S. B. & Hayat, M. 1993. A review of species of *Metaphycus* (Hymenoptera : Encyrtidae). *Oriental Ins.* **27** : 185-210.