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Michael D. Hubbard

Florida A&M University, Tallahassee, Florida

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**A CATALOG OF THE MAYFLIES
(EPHEMEROPTERA)
OF HONG KONG**

Michael D. Hubbard

Entomology
Florida A&M University
Tallahassee, Florida 32307 USA

This paper is a catalog of the Ephemeroptera known from the British Crown Colony of Hong Kong. It includes all known references for each species, along with an indication of the type localities and depositions of type specimens. For each reference the stage (male, female, or nymph) is indicated if relevant. Keys which include the species also are indicated. The recorded distribution for each species is listed. For each genus are given the reference to the original description, information on the type species, and any synonyms.

Abbreviations of places of type deposition are as follows: (BMNH), British Museum (Natural History), London; (Cornell), Cornell University, Ithaca, New York; (DEI), Deutsches Entomologisches Institut, Eberswalde; (Hamburg), Zoologisches Staatsinstitut und Zoologisches Museum, Hamburg; (Hsu), personal collection of Y.-C. Hsu [the late Prof. Hsu indicated (personal communication) that because of events in China over the past few decades these specimens should be considered destroyed or lost]; (Utah), University of Utah, Salt Lake City.

Although the taxonomic knowledge of the Hong Kong mayflies is still somewhat sketchy, there are substantial ecological studies ongoing at this time. Therefore, in order to facilitate future studies and comparisons of data, I have included in this catalog the "morphospecies" of Dudgeon (1982a, b, 1983, 1984a, b). The reader should be aware that many of the taxonomic assignments of these morphospecies are preliminary and actual placement will have to await future taxonomic studies.

This paper is one in a continuing series of catalogs of the Ephemeroptera (cf. Hubbard & Peters 1978, Hubbard & Pescador 1978, Hubbard & Savage 1981, Hubbard 1982a,b).

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Order Ephemeroptera

Family Baetidae Leach, 1815

Subfamily Baetinae Leach, 1815

Genus Baetis Leach, 1815

Baetis Leach, 1815:137.

Type species: *Ephemera fuscata* Linnaeus.
Subsequent designation by Intern. Comm. Zool. Nomencl., 1966:209.

Brachyphlebia Westwood, 1840:25.

Type species: *Ephemera fuscata* Linnaeus (misidentified as *Ephemera bioculata*) [c.f. Intern. Comm. Zool. Nomencl., 1966:209]. Monotypic.

Acentrella Bengtsson, 1912:110.

Type species: *Acentrella laponica* Bengtsson. Monotypic.

Heterocloeon McDunnough, 1925:175.

Type species: *Centroptilum curiosum* McDunnough. Original designation.

Baetis sp. T₁

Baetis T₁ Dudgeon, 1982:14.

Baetis T₁ Dudgeon, 1982:225.

Baetis T₁ Dudgeon, 1983:441.

Baetis T₁ Dudgeon, 1984:73.

Baetis T₁ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. T₂

Baetis T₂ Dudgeon, 1982:14.

Baetis T₂ Dudgeon, 1982:225.

Baetis T₂ Dudgeon, 1983:441.

Baetis T₂ Dudgeon, 1984:73.

Baetis T₂ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. T₃

Baetis T₃ Dudgeon, 1982:14.

Baetis T₃ Dudgeon, 1982:225.

Baetis T₃ Dudgeon, 1983:441.

Baetis T₃ Dudgeon, 1984:73.

Baetis T₃ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. T₄

Baetis T₄ Dudgeon, 1982:225.

Baetis T₄ Dudgeon, 1983:441.

Baetis T₄ Dudgeon, 1984:73.

Baetis T₄ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. T₅

Baetis T₅ Dudgeon, 1984:73.

Baetis T₅ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. L₅

Baetis L₅ Dudgeon, 1984:73.

Baetis L₅ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. L₆

Baetis L₆ Dudgeon, 1984:73.

Baetis L₆ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. L₇

Baetis L₇ Dudgeon, 1984:73.

Baetis L₇ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. L₈

Baetis L₈ Dudgeon, 1984:73.

Baetis L₈ Dudgeon, 1984:210.

Distribution: Hong Kong.

Baetis sp. cf. T₃

Baetis cf. T₃ Dudgeon, 1984:73.

Baetis cf. T₃ Dudgeon, 1984:210.

Distribution: Hong Kong.

Subfamily **Cloeoninae** Newman, 1853

Genus **Centroptilum** Eaton, 1869

Centroptilum Eaton, 1869:132.

Type species: **Ephemera luteola** Müller.

Original designation.

Centroptilum sp. L₁

Centroptilum L₁ Dudgeon, 1984:73.

Centroptilum L₁ Dudgeon, 1984:210.

Distribution: Hong Kong.

Genus **Cloeon** Leach, 1815

Cloeon Leach, 1815:137.

Type species: **Ephemera diptera** Linnaeus as **Cloeon pallidus** Leach. Monotypy.

Cloe Burmeister, 1839:797. [unjustified emendation of **Cloeon** Leach].

Type species: **Ephemera diptera** Linnaeus, objective synonymy.

Cloeopsis Eaton, 1866:146.

Type species: **Ephemera diptera** Linnaeus. Monotypy.

Austrocloeon Barnard, 1932:217. [nomen nudum].

Neocloeon Traver, 1932:365.

Type species: **Neocloeon alamance** Traver. Original designation.

Austrocloeon Barnard, 1940:616.

Type species: **Cloeon africanum** Esben-Petersen. Original designation.

Cloeon harveyi Kimmins

Procloeon harveyi Kimmins, 1947:94, fig. 2, 6, 10. (male, female). Type: female, Calcutta, Bengal (BMNH).

Procloeon harveyi - Gillies, 1949:176.

Procloeon harveyi - Kimmins, 1971:314.

Procloeon harveyi - Hubbard & Peters, 1978:11.

Procloeon harveyi - Hubbard & Srivastava, 1984:3.

Cloeon harveyi - Müller-Liebenau & Hubbard, 1986:538.

Distribution: Hong Kong, Malaysia, India.

Genus **Pseudocloeon** Klapálek, 1905

Pseudocloeon Klapálek, 1905:105.

Type species: **Pseudocloeon kraepelini** Klapálek. Monotypic.

Baetiella Uéno, 1931:220.

Type species: **Acentrella japonica** Imanishi. Original designation.

Pseudocloeon sp. T₁

Pseudocloeon T₁ Dudgeon, 1982:14.

Pseudocloeon T₁ Dudgeon, 1982:225.

Pseudocloeon T₁ Dudgeon, 1983:441.

Pseudocloeon T₁ Dudgeon, 1984:73.

Pseudocloeon T₁ Dudgeon, 1984:210.

Distribution: Hong Kong.

Pseudocloeon sp. T₂

Pseudocloeon T₂ Dudgeon, 1982:14.

Pseudocloeon T₂ Dudgeon, 1982:225.

Pseudocloeon T₂ Dudgeon, 1983:441.

Pseudocloeon T₂ Dudgeon, 1984:73.

Pseudocloeon T₂ Dudgeon, 1984:210.

Distribution: Hong Kong.

Pseudocloeon sp. L₃

Pseudocloeon L₃ Dudgeon, 1984:73.

Pseudocloeon L₃ Dudgeon, 1984:210.

Distribution: Hong Kong.

Pseudocloeon sp.

Baetella [sic] T₁ Dudgeon, 1983:441.

Distribution: Hong Kong.

Family **Caenidae** Newman, 1853

Genus **Caenis** Stephens, 1835

Caenis Stephens, 1835:60.

Type species: **Caenis macrura** Stephens. Subsequent designation by Westwood, 1840:47.

Oxycypha Burmeister, 1839:796.

Type species: **Oxycypha luctuosa** Burmeister. Subsequent designation by Jacob,

1974:96.

Ordella Champion, 1923:518.

Type species: **Caenis macrura** Stephens.
Original designation.

Caenis sp. T₁

Caenis T₁ Dudgeon, 1982:14.
Caenis T₁ Dudgeon, 1982:225.
Caenis T₁ Dudgeon, 1984:73.
Caenis T₁ Dudgeon, 1984:210.
Distribution: Hong Kong.

Caenis sp. T₂

Caenis T₂ Dudgeon, 1983:441.
Caenis T₂ Dudgeon, 1984:73.
Caenis T₂ Dudgeon, 1984:210.
Distribution: Hong Kong.

Caenis sp. L₂

Caenis L₂ Dudgeon, 1984:73.
Caenis L₂ Dudgeon, 1984:210.
Distribution: Hong Kong.

Caenis sp. L₃

Caenis L₃ Dudgeon, 1984:73.
Caenis L₃ Dudgeon, 1984:210.
Distribution: Hong Kong.

Family **Ephemeridae** Latreille, 1810

Genus **Ephemer** Linnaeus, 1758

Ephemer Linnaeus, 1758:546.

Type species: **Ephemer vulgata** Linnaeus.
Subsequent designation by Westwood, 1836:439.

Nirvius Navás, 1922:56.

Type species: **Nirvius punctatus** Navás.
Original designation.

Subgenus **Ephemer** Linnaeus, 1758

Ephemer (**Ephemer**) **pulcherrima** Eaton

Ephemer pulcherrima Eaton, 1892:185. (female). Type: female, Tenasserim Valley, Burma (BMNH).

Ephemer pulcherrima - Ulmer, 1926:86, fig. 80-81. (male, key).

Ephemer pulcherrima - Lestage, 1927:99. (key).

Ephemer pulcherrima - Wu, 1935:248.

Ephemer pulcherrima - Hsu, 1936:233, fig. 1. (female).

Ephemer pulcherrima - Ulmer, 1936:204.

Ephemer pulcherrima - Hafiz, 1937:368.

Ephemer pulcherrima - Hsu, 1937:433, fig. 25-26. (male, female, key).

Ephemer pulcherrima - Kimmins, 1960:308.

Ephemer pulcherrima - Kimmins, 1971:319.

Ephemer pulcherrima - Hubbard & Peters, 1978:17.

Distribution: Hong Kong, China, Burma, India.

Ephemer (**Ephemer**) **serica** Eaton

Ephemer serica Eaton, 1871:75, pl. 4 fig. 12-12a. (male, female). Type: N. China (BMNH).

Ephemer serica - McLachlan, 1875:169.

Ephemer serica - Eaton, 1883:73. (male, female).

Ephemer serica - Ulmer, 1926:89, fig. 82-83. (male, female, key).

Ephemer serica - Lestage, 1927:99. (key).

Ephemer serica - Navás, 1930:15.

Ephemer serica - Navás, 1930:138.

Ephemer serica - Wu, 1935:248.

Ephemer serica - Ulmer, 1936:206.

Ephemer serica - Hsu, 1937:438. (male, female, key).

Ephemer serica - Kimmins, 1960:309, fig. 53. (male). [designation of lectotype].

Ephemer serica - Kimmins, 1971:320.

Distribution: Hong Kong, China, Vietnam.

Ephemer (subgenus incertus)

Ephemer sp. T₁

Ephemer T₁ Dudgeon, 1982:225.
Distribution: Hong Kong.

Ephemer sp. T₂

Ephemer T₂ Dudgeon, 1983:441.
Distribution: Hong Kong.

Ephemer sp.

Ephemer sp. Dudgeon, 1984:73.
Ephemer sp. Dudgeon, 1984:210.
Distribution: Hong Kong.

Family **Ephemerellidae** Klapálek, 1909

Subfamily **Ephemerellinae** Klapálek, 1909

Genus **Ephemerella** Walsh, 1863

Ephemerella Walsh, 1863:377.

Type species: **Ephemerella excrucians** Walsh. Subsequent designation by Eaton, 1868:87.

Ephemerella sp. T₁

Ephemerella T₁ Dudgeon, 1982:14.
Ephemerella T₁ Dudgeon, 1982:225.
Ephemerella T₁ Dudgeon, 1983:441.
Ephemerella T₁ Dudgeon, 1984:73.
Ephemerella T₁ Dudgeon, 1984:210.
Distribution: Hong Kong.

Ephemerella sp. T₂

Ephemerella T₂ Dudgeon, 1982:14.
Ephemerella T₂ Dudgeon, 1982:225.
Ephemerella T₂ Dudgeon, 1984:73.
Ephemerella T₂ Dudgeon, 1984:210.
Distribution: Hong Kong.

Ephemerella sp. L₃**Ephemerella** L₃ Dudgeon, 1984:73.**Ephemerella** L₃ Dudgeon, 1984:210.

Distribution: Hong Kong.

Family **Heptageniidae** Needham
in Needham & Betten, 1901Subfamily **Heptageniidae** Needham
in Needham & Betten, 1901Genus **Compsoneria** Eaton, 1881**Compsoneria** Eaton, 1881:23.Type species: **Compsoneria spectabilis**
Eaton. Original designation.**Cosmetogenia** Eaton, 1883:18, pl. 23.Type species: **Compsoneria spectabilis**
Eaton. Monotypy.**Compsoneria** sp. T₁**Ecdyonurus** T₁ Dudgeon, 1982:14.**Ecdyonurus** T₁ Dudgeon, 1982:225.**Ecdyonurus** T₁ Dudgeon, 1983:441.**Ecdyonurus** T₁ Dudgeon, 1984:73.**Compsoneria** T₁ Dudgeon, 1984:210.

Distribution: Hong Kong.

Compsoneria sp. T₂**Ecdyonurus** T₂ Dudgeon, 1982:225.**Ecdyonurus** T₂ Dudgeon, 1984:73.**Compsoneria** T₂ Dudgeon, 1984:210.

Distribution: Hong Kong.

Genus **Ecdyonurus** Eaton, 1868**Ecdyonurus** Eaton, 1868:142.Type species: **Ephemera venosa** Fabricius.
Original designation.**Ecdyurus** Eaton, 1868:90.Type species: **Ephemera venosa** Fabricius.
Objective synonymy. [unjustified emendation
of **Ecdyonurus**].**Paracinygmula** Bajkova, 1975:54.Type species: **Paracinygmula zhilzovae** Baj-
kova. Original designation.**Ecdyonurus herklotsi** Hsu, 1936**Ecdyonurus herklotsi** Hsu:233, fig. 2-4.
(male). Type: male, Pokfulum [Pokfulam],
Hong Kong (Hsu).

Distribution: Hong Kong.

Genus **Epeorus** Eaton, 1881**Epeorus** Eaton, 1881:26.Type species: **Epeorus torrentium** Eaton.
Original designation.Subgenus **Iron** Eaton, 1883**Iron** Eaton, 1883: pl. 24.Type species: **Epeorus longimanus** Eaton.
Monotypy.**Epeorus** (Iron) sp.**Iron** sp. Dudgeon, 1984:73.**Iron** sp. Dudgeon, 1984:210.

Distribution: Hong Kong.

Epeorus (subgenus incertus)**Epeorus** sp. T₁**Epeorus** T₁ Dudgeon, 1982:14**Epeorus** T₁ Dudgeon, 1982:225.**Epeorus** T₁ Dudgeon, 1983:441.**Epeorus** T₁ Dudgeon, 1984:73.**Epeorus** T₁ Dudgeon, 1984:210.

Distribution: Hong Kong.

Epeorus sp. T₂**Epeorus** T₂ Dudgeon, 1984:73.**Epeorus** T₂ Dudgeon, 1984:210.

Distribution: Hong Kong.

Genus **Heptagenia** Walsh, 1863**Heptagenia** Walsh, 1863:197.Type species: **Palingenia flavescens** Walsh.
Subsequent designation by Eaton, 1868,
Entomol. Mon. Mag. 5:90.**Kageronia** Matsumura, 1931:1479.Type species: **Kageronia suzukiella** Matsu-
mura. Monotypic.**Heptagenia** *ngi* Hsu, 1936**Heptagenia** *ngi* Hsu, 1936:235, fig. 5-7.
(male). Type: male, Shauiwan, Hong Kong
(Hsu).

Distribution: Hong Kong.

Genus **Paegniodes** Eaton, 1881**Paegniodes** Eaton, 1881:23.Type species: **Heptagenia cupulata** Eaton.
Original designation.**Paegniodes cupulatus** (Eaton, 1871)**Heptagenia cupulata** Eaton, 1871:138, pl. 6
fig. 14-14a. (male, female). Type: Nor-
thern China (BMNH).**Paegniodes cupulatus** - Eaton, 1881:23.**Heptagenia cupulata** - Palmén, 1884:74.**Paegniodes cupulatus** - Eaton, 1885:261, pl.
23 fig. 4, pl. 24 fig. 4. (male, female).**Paegniodes cupulatus** - Ulmer, 1926:107,
figs. 98-102. (male, female).**Paegniodes cupulatus** - Hsu, 1932:39.**Paegniodes fukienensis** - Hsu, 1932:39, fig.
1-3. (male). Type: male, Ling Sioh, Fuku-
Prov. China (Cornell).**Paegniodes cupulatus** - Wu, 1935:252.**Paegniodes fukienensis** - Wu, 1935:252.**Paegniodes cupulata** - Hsu, 1936:236, fig. 8-
13. (male, female).**Paegniodes cupulatus** - Ulmer, 1936:211.
(male).

Paegniodes cupulatus - Kimmins, 1960:283.
[designation of lectotype].

Paegniodes cupulatus - Uéno, 1969:228, fig. 26-36. (male).

Heptagenia cupulata - Kimmins, 1971:312.

Paegniodes cupulatus - Tshernova, 1976:343, fig. 41. (nymph).

Paegniodes fukiensis [sic] - Tshernova, 1976:343.

Distribution: Hong Kong, China, Tibet.

Genus **Thalerosphyrus** Eaton, 1881

Thalerosphyrus Eaton, 1881:22.

Type species: **Baetis determinatus** Walker.

Original designation.

Thalerosphyrus sp. T₁

Thalerosphyrus T₁ Dudgeon, 1982:14.

Thalerosphyrus T₁ Dudgeon, 1983:441.

Thalerosphyrus T₁ Dudgeon, 1984:73.

Thalerosphyrus T₁ Dudgeon, 1984:210.

Distribution: Hong Kong.

Family **Leptophlebiidae** Banks, 1900

Subfamily **Atalophlebiinae** Peters, 1980

Genus **Choroterpes** Eaton, 1881

Choroterpes Eaton, 1881:194.

Type species: **Choroterpes lusitanica** Eaton. Original designation.

Subgenus **Euthraulius** Barnard, 1932

Euthraulius Barnard, 1932:249.

Type species: **Euthraulius elegans** Barnard. Monotypy.

Thraululus Ulmer, 1939:499.

Type species: **Thraululus marginatus** Ulmer. Original designation.

Choroterpes (**Euthraulius**) sp.

Choroterpes (**Euthraulius**) sp. Dudgeon, 1984:73.

Choroterpes (**Euthraulius**) sp. Dudgeon, 1984:210.

Distribution: Hong Kong.

Choroterpes (subgenus incertus)

Choroterpes sp. T₁

Choroterpes T₁ Dudgeon, 1982:14.

Choroterpes T₁ Dudgeon, 1983:441.

Distribution: Hong Kong.

Genus **Cryptopenella** Gillies, 1951

Cryptopenella Gillies, 1951:125.

Type species: **Cryptopenella facialis** Gillies. Original designation.

Cryptopenella facialis Gillies, 1951

Cryptopenella facialis Gillies, 1951:127, fig. 11-12, 14. (male, female, nymph).

Type: River Shing Man [Shing Mun River], near Kowloon, Hong Kong (BMNH).

Cryptopenella facialis - Peters & Edmunds, 1970:202, fig. 46-47, 93-94, 122, 145, 336-345. (male, female, nymph).

Cryptopenella facialis - Kimmins, 1971:313.

Distribution: Hong Kong.

Genus **Habrophlebiodes** Ulmer, 1920

Habrophlebiodes Ulmer, 1920:39.

Type species: **Habrophlebia americana** Banks. Original designation.

Habrophlebiodes gilliesi Peters, 1963

Habrophlebiodes gilliesi Peters, 1963:41, fig. 1-11. (male, female). Type: male, Fan Ling near Kowloon, Hong Kong (Utah).

Habrophlebiodes gilliesi - Peters & Edmunds, 1970:187, fig. 19-21, 77, 112, 135, 323. (male, female).

Habrophlebiodes gilliesi - Tsui & Peters, 1970:89, fig. 1-13. (nymph).

Habrophlebiodes gilliesi - Dudgeon, 1982:225.

Distribution: Hong Kong.

Genus **Isca** Gillies, 1951

Isca Gillies, 1951:127.

Type species: **Isca purpurea** Gillies. Original designation.

Subgenus **Isca** Gillies, 1951

Isca (**Isca**) **purpurea** Gillies, 1951

Isca purpurea Gillies, 1951:128, fig. 15-22. (male, female). Types: male, female, Hong Kong, 15-20 mi inland from Kowloon (BMNH).

Isca (**Isca**) **purpurea** - Peters & Edmunds, 1970:215, fig. 71, 106, 330, 350-357. (male, nymph).

Isca purpurea - Kimmins, 1971:319.

Isca (**Isca**) **purpurea** - Hubbard & Peters, 1978:24.

Distribution: Hong Kong, India.

Isca (subgenus incertus)

Isca sp. T₁

Isca T₁ Dudgeon, 1982:225.

Isca T₁ Dudgeon, 1983:441.

Distribution: Hong Kong.

Isca sp.

Isca sp. Dudgeon, 1984:73.

Isca sp. Dudgeon, 1984:210.

Distribution: Hong Kong.

Genus **Thraulius** Eaton, 1881

Thraulius Eaton, 1881:195.

Type species: **Thraulius bellus** Eaton. Original designation.

Masharikella Peters, Gillies & Edmunds, 1964:118.

Type species: **Hagenulus fasciatus** Kimmins.
Original designation.

Thraulius sp. T₁

Thraulius T₁ Dudgeon, 1982:225.

Thraulius T₁ Dudgeon, 1983:441.

Distribution: Hong Kong.

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