



New Caledonia's Trichoptera—present status of knowledge

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Abstract

The first Trichoptera recorded from New Caledonia were four species described by Kimmins in 1953, each in a new endemic genus. The diversity was increased to eight species with the publication by Sykora in 1967 of three new species in two new genera and a fourth species in a previously established genus. Today, 239 valid species are known from the country, representing 20 genera in 10 families. Analysis of published records for some 32,000 Trichoptera specimens collected from 291 localities shows that the highest species diversity is in the SE part of the Grande Terre, and that species diversity is greatest at lower altitudes, i.e. 0–200 meters above sea level. We also see that the three most frequently collected families (85% of the individuals) in the sampled material are Hydroptilidae (35%), followed by Hydropsychidae (27%), and Leptoceridae (22%). Phylogenetic analyses have demonstrated that the first species to occupy the island and the earliest radiations took place on areas covered by ultrabasic substrate, which is poor in nutrients and rich in certain toxic heavy metals.

Introduction

New Caledonia comprises a group of islands situated in the Pacific Ocean, approximately 1,200 kms east of Australia (Fig. 1). The largest of the islands are the three Loyalty islands, the Ile de Pines, and the Grande Terre. The Loyalty islands are of oceanic origin while the latter two islands are considered to be of continental origin, fragments of the former Gondwanaland, which together with New Zealand, separated from Australia approximately 66 million years ago. Recent studies suggest that New Caledonia was submerged until 37 million years ago (Cluzel *et al.* 2001; Muirene *et al.* 2005). At the time of emergence the Grande Terre and Ile de Pins were more or less completely covered by ultrabasic substrate, which has gradually eroded to its present day level of about one-third of the total area. The ultrabasic substrate is predominantly restricted to the Province Sud. The climate of New Caledonia is tropical, with precipitation varying widely on Grande Terre between the dry western side and wet eastern side of the central longitudinal mountain range. The chemistry of the surface water is strongly affected by the substrate over which the water drains, and produces a variety of environmental conditions for freshwater life, including habitats that are rich in heavy metals and poor in nutrients.

Major increase in taxonomic knowledge

The description of New Caledonian Trichoptera diversity is very recent (Fig. 2). The first Trichoptera recorded were four species described by Kimmins (1953), each in a newly described genus. Subsequently, *Caledopsyche* Kimmins, 1953 was synonymized with *Hydropsyche* (Geraci *et al.* 2010); the other genera (*Hydrobiosella* Kimmins, 1953, *Mecynostomella* Kimmins, 1953 and *Xanthochorema* Kimmins, 1953) are still considered valid. The known diversity of Trichoptera was increased to eight species with Sykora (1967) who described three new species in two new genera (*Gracilipsodes* Sykora, 1967 and *Caledonotrichia* Sykora, 1967) and a fourth species in *Cheumatopsyche* (subsequently transferred to *Orthopsyche* McFarlane, 1976 by Oláh *et al.* (2006) and to *Hydropsyche* by Geraci *et al.* (2010)).

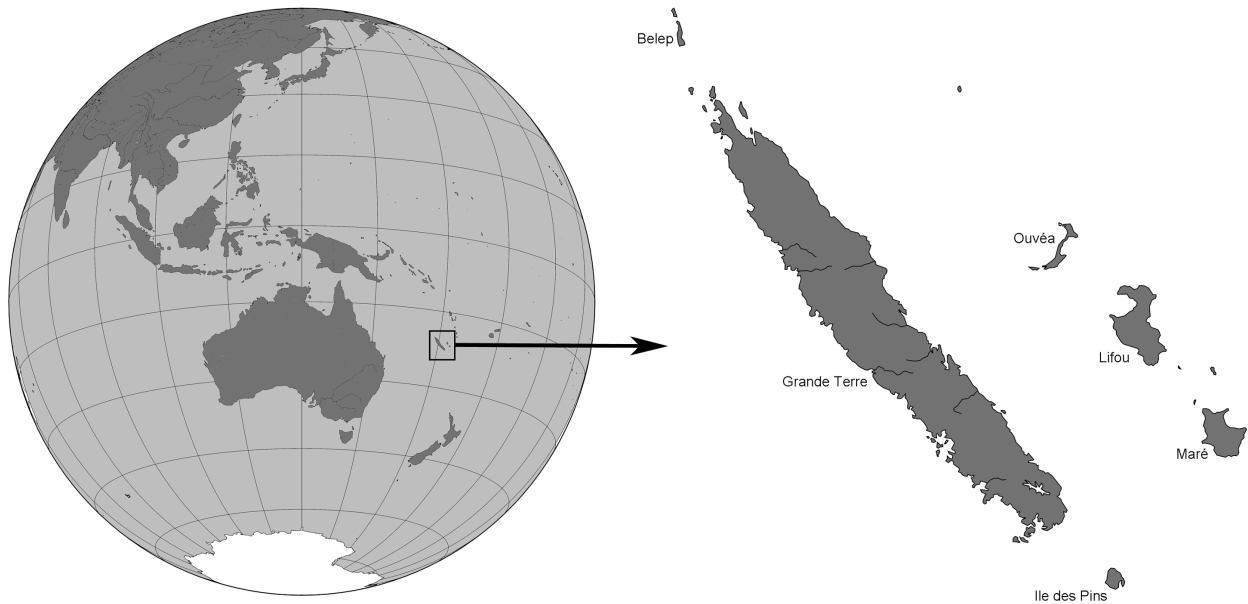


FIGURE 1. Map of Oceania with location of New Caledonia in a larger perspective (left) and map of the larger islands of New Caledonia (right).

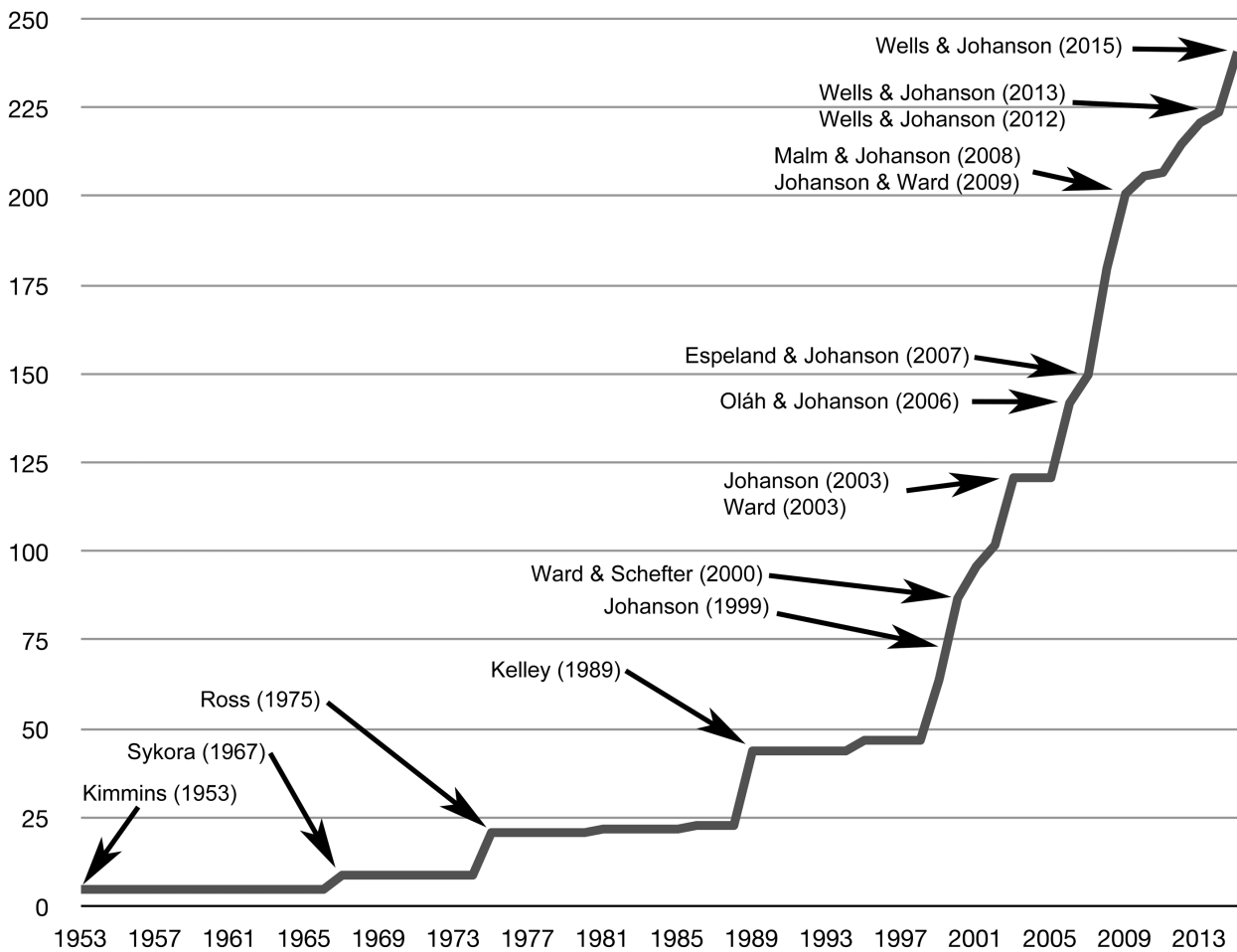


FIGURE 2. Graphical display of cumulative sum of Trichoptera species recorded from New Caledonia, with indication of publications with strongest impact on the species counts.

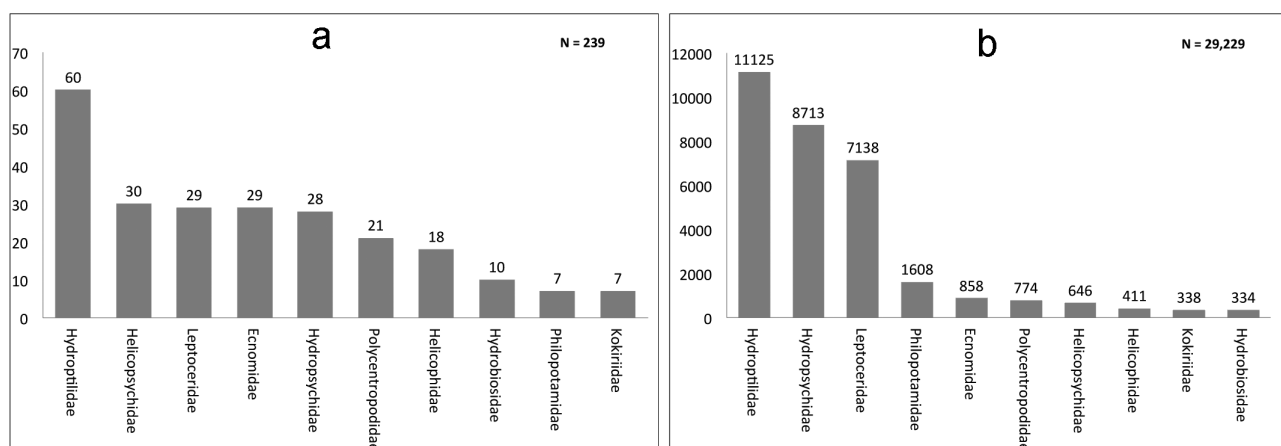


FIGURE 3. A, Graphical display of number of Trichoptera species per family recorded from New Caledonia. B, Graphical display of number of Trichoptera individuals per family recorded from New Caledonia.

The description of 12 new *Helicopsyche* species by Ross (1975), more than doubled the number of species to 20. This level remained stable until 1989 when Kelley (1989) and Schmid (1989) described a number of hydroptilids and hydrobiosids, respectively.

Over the 25 years from the end of the 1990s to 2015 nearly 200 further species were described from the island, covering all higher taxa, except the leptocerid genus *Oecetis* which was recorded (Mary & Marmonier 2000) but without species being named from the area. Re-descriptions include eleven of the *Helicopsyche* species described by Ross (1975) and published by Johanson & Scheffer (1999).

It is thus apparent that the island has a very rich Trichoptera fauna — and undescribed species are still available in collections, and probably others not yet collected. Espeland and Johanson (2010b) indicated that a considerable number of *Agmina* (Ecnomidae) species remain to be described; this genus forms the largest monophyletic group of terrestrial animals on New Caledonia. Similarly, a number of *Helicopsyche* are still undescribed, together with an unknown number of *Oecetis* species. It is expected that the island's Trichoptera fauna exceeds 300 species, which for its area is believed to be the richest concentration of Trichoptera diversity on Earth, i.e. almost 0.018 species per km². A summary of the present state of this diversity is presented below.

Evolution of New Caledonian Trichoptera

Several studies have analysed the phylogenetic relationships of New Caledonian species in conjunction with broader faunas, many focusing on diversification in relation to the presence of the ultrabasic substrate (Johanson 2007; Espeland *et al.* 2008; Espeland & Johanson 2010a,b; Johanson & Espeland 2010; Malm & Johanson 2011; Strandberg & Johanson 2011; Johanson *et al.* 2012). For both the family Hydropsychidae and the genus *Caledomina* (Ecnomidae), it seems that the first radiation on the island after the initial colonisation occurred in the Chattian stage of the Upper Oligocene (ca. 28–23 MYA), while in another ecnomid genus, *Agmina*, the radiation probably began slightly later, i.e. in the Aquitanian stage in the Lower Miocene (Espeland & Johanson 2010a,b). The hydrobiosid genus, *Apsilochorema*, probably first colonised the island in the Langhian stage of the Miocene (Strandberg & Johanson 2011). From these studies a general picture emerges of diversification from a New Caledonian ancestor on ultra-basic substrates with subsequent adaptation to non-ultrabasic substrates.

Material and methods

The data were gathered from published scientific articles which constitute the source for all data (Espeland & Johanson 2007, 2008; Johanson 1999, 2002, 2003a,b, 2011; Johanson & Keijsner 2008; Johanson & Mary 2000; Johanson & Ward 2001, 2009; Kelley 1989; Kimmins 1953; Malicky 1981; Malm & Johanson 2007,

2008a,b; Marshall 1979; Mary & Ward 2001; Neboiss 1986; Oláh *et al.* 2006; Oláh & Johanson 2010; Ross 1975; Schefter & Ward 2002; Schmid 1989; Sykora 1967; Ulmer 1906; Ward 2001, 2003; Ward & Mary 2000; Ward & Schefter 2000; Wells 1995; Wells & Johanson 2012, 2014, 2015; Wells *et al.* 2013). All unpublished data was excluded from the analysis. Most published locality data, at least the most recent, includes latitude and longitude coordinates, and for records lacking such data coordinates were sampled from online map resources, like Google Maps, Google Earth, and from United States Board on Geographic Names (1974). No data was generated for *Triplectides winstanley* Ward & Mary, 2000 for which locality data gives only “New Caledonia”. For more detailed analysis of distribution of individual species, Grande Terre and Ile des Pins were divided into a grid system based on full and half degrees latitude and half degrees longitude. All species were mapped into this grid system based on the latitude and longitude of the localities/sites at which they were collected. Elevation data for all localities were taken from topographical maps published by Cartes Institute Géographique National 1992, serie orange 1:50000.

Results

Endemism

Based on the total material pool of 31,945 individuals, a total of 239 species were recorded, of which three species are collected also from outside New Caledonia (*Hellyethira malleoforma* Wells, 1979, *Hydroptila losida* Mosely, 1953, *Triplectides australis* Navás, 1934), bringing the level of species endemism to 99%. Of 21 genera recorded, five (24%) are endemic: *Agmina* Ward & Schefter, 2000, *Caledomina* Johanson, 2011, *Caledonotrichia* Sykora, 1967, *Gracilipsodes* Sykora, 1967, and *Mecynostomella* Kimmins, 1953.

Composition of fauna

Numbers of species in each of the 10 recorded families are given in Fig 3a: with a total of 60 species (Fig. 3a), the most specious family is Hydroptilidae, followed by Helicopsychidae (30), Ecnomidae and Leptoceridae (each with 29), Hydropsychidae (28), Polycentropodidae (21), Helicophidae (18), Hydrobiosidae (10), Kokiriidae and Philoptamidae (each 7). The number of individuals collected in each family (Fig. 3b) varies widely, with Hydroptilidae, Hydropsychidae and Leptoceridae accounting for almost 85% of the material.

Distribution

The 272 unique sampling sites of Trichoptera available through published records are plotted on the map in Fig. 4. The distribution of species based on these records and delimited by 0.5 degrees latitude and longitude is given in Fig. 5a. The highest diversity is recorded between 22.0°–22.5°S and 166.5°–167.0°E (136 species), which area is dominated by ultrabasic substrates and includes the Koghi Mountains, the Rivière Bleue, Mont Dore, Mont Dzumac, Col de Mouirange and Plaine des Lacs. The diversity gradually decreases towards the northwest before increasing again between 20.5–21.0°S and 164.5–165.0°E, an area including the mountain massive, Panié, and a high density of northeastward draining streams and rivers, an area dominated by non-ultrabasic substrates. Fig. 5b shows the number of species unique (endemic) to 0.5 degree rectangles and shows that the highest concentration of endemic species coincides with the area for which the highest number of species is recorded (38% of the species are endemic to the area). The concentration of endemic species also decreases north-westwards, but with a second peak in the rectangle encompassing the Mont Panié massive, where 24% of the species are endemic. The altitudinal distribution of species is given in Fig. 6, and shows that the highest number of species (black plus grey shading) is recorded between 0 and 200 meters above sea level and decreases with higher altitude, except with marked inclines between 501 and 700 meters due to limited sampling, and between 1001 and 1300 meters (no samples were taken in this elevation range). The number of species recorded at only one altitude interval are indicated in Fig. 6 by black shading, and shows the same trends as for all species, except that the inclines are less dramatic between 501 and 700 meters, and proportionally the number of species that are unique to 1301–1400 meters is very high.

rectangle and not recorded outside that rectangle (number of species endemic to individual rectangles). Darker shading of rectangles indicates more species in both figures.

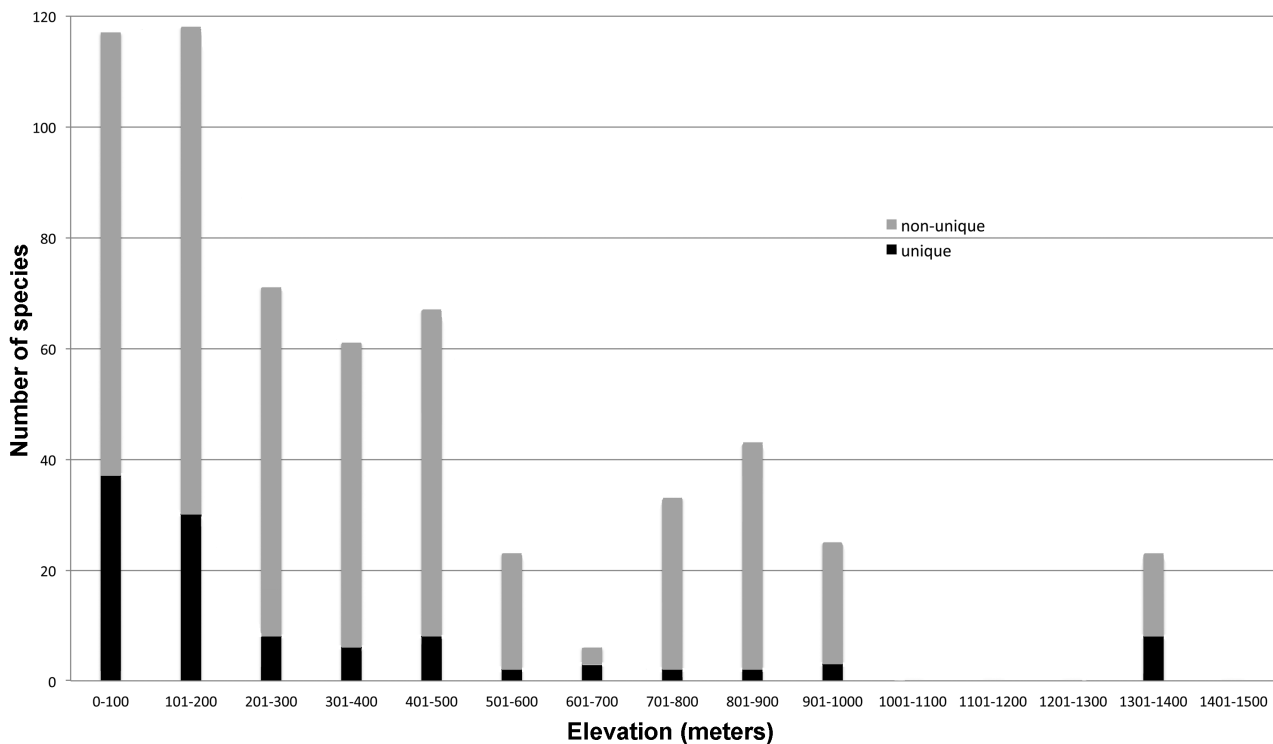


FIGURE 6. Number of Trichoptera species recorded at various altitudes, divided into 100 meter intervals. Grey coloured columns give number of species that are found on more than one altitude interval. Black columns give number of species not recorded at other altitudes.

List of species recorded from New Caledonia

HYDROPTILIDAE Stephens, 1836

Acritoptila Wells, 1982

Acritoptila amphapsis Kelley, 1989

Acritoptila chiasma Kelley, 1989

Acritoptila crinita Kelley, 1989

Acritoptila karika Oláh & Johanson, 2010; Wells & Johanson (2014)

Acritoptila csavar Oláh & Johanson, 2010

Acritoptila disjuncta Kelley, 1989

Acritoptila forficata Wells & Johanson, 2014

Acritoptila glossocercus Kelley, 1989

Acritoptila macrospina Wells & Johanson, 2014

Acritoptila ouenghica Wells, 1995

Acritoptila parallela Wells & Johanson, 2014

Acritoptila planichela Kelley, 1989

Caledonotrichia Sykora, 1967

Caledonotrichia bifida Wells, Johanson & Mary-Sasal, 2013

Caledonotrichia capensis Wells, Johanson & Mary-Sasal, 2013

Caledonotrichia charadra Kelley, 1989

Caledonotrichia extensa Kelley, 1989

Caledonotrichia illiesi Sykora, 1967

Caledonotrichia minor Sykora, 1967

Caledonotrichia minuta Wells, Johanson & Mary-Sasal, 2013
Caledonotrichia nyurga Oláh & Johanson, 2010
Caledonotrichia ouinnica Wells, Johanson & Mary-Sasal, 2013
Caledonotrichia sykorai Wells, Johanson & Mary-Sasal, 2013
Caledonotrichia vexilla Wells, Johanson & Mary-Sasal, 2013

Hellyethira Neboiss, 1977

Hellyethira malleoforma Wells, 1979 (this Australian species was first recorded from New Caledonia by Wells (1995))

Hydroptila Dalman, 1819

Hydroptila losida Mosely, 1953 (this Australian species was first recorded from New Caledonia by Wells (1995))

Oxyethira Eaton, 1873

Oxyethira amieu Wells & Johanson, 2015
Oxyethira abbreviata Wells & Johanson, 2015
Oxyethira arok Oláh & Johanson, 2010
Oxyethira caledoniensis Kelley, 1989
Oxyethira digitata Wells & Johanson, 2015
Oxyethira dorsennus Kelley, 1989
Oxyethira enigmatica Wells & Johanson, 2015
Oxyethira houailou Wells & Johanson, 2015
Oxyethira incana Ulmer, 1906
 Gnathotrichia australiensis Wells, 1981; Kelley (1984)
 Stenoxyethira excisa Kimmins, 1951; Kelley (1984)
 Oxyethira galekoluma Schmid, 1958; Malicky & Chantaramongkol (2007)
 Gnathotrichia isabellina Ulmer, 1951; Marshall (1979)
Oxyethira incurvata Wells & Johanson, 2015
Oxyethira indorsennus Kelley, 1989
 Oxyethira tompa Oláh & Johanson, 2010; Wells & Johanson (2015)
Oxyethira insularis Kelley, 1989
Oxyethira macropennis Wells & Johanson, 2015
Oxyethira melasma Kelley, 1989
Oxyethira mouirange Wells & Johanson, 2015
Oxyethira nehoue Wells & Johanson, 2015
Oxyethira oropedion Kelley, 1989
 Oxyethira derek Oláh & Johanson, 2010; Wells & Johanson (2015)
Oxyethira ouenghi Wells & Johanson, 2015
Oxyethira parinsularis Wells & Johanson, 2015
Oxyethira perignonica Wells & Johanson, 2015
Oxyethira quadrata Wells & Johanson, 2015
Oxyethira rougensis Wells & Johanson, 2015
Oxyethira scutica Kelley, 1989
Oxyethira spicula Wells & Johanson, 2015
Oxyethira spinifera Wells & Johanson, 2015
Oxyethira tiwaka Wells & Johanson, 2015

Paroxyethira Mosely, 1924

Paroxyethira anomala Wells & Johanson, 2012
Paroxyethira asymmetrica Wells & Johanson, 2012
Paroxyethira atypica Wells & Johanson, 2012
Paroxyethira dumagnes Kelley, 1989
Paroxyethira dzumac Wells & Johanson, 2012

Paroxyethira hamata Wells & Johanson, 2012
Paroxyethira koegi Wells & Johanson, 2012
Paroxyethira nigrispina Kelley, 1989
Paroxyethira opposita Wells & Johanson, 2012
Paroxyethira serrata Wells & Johanson, 2012

HYDROBIOSEIIDAE Ulmer, 1905a

Apsilochorema Ulmer, 1907
Apsilochorema caledonicum Schmid, 1989

Xanthochorema Kimmins, 1953
Xanthochorema caledon Kimmins, 1953
Xanthochorema bifurcatum Schmid, 1989
Xanthochorema calcaratum Schmid, 1989
Xanthochorema celadon Schmid, 1989
Xanthochorema paniensis Ward & Mary, 2000
Xanthochorema neocaledonia Johanson, 2002
Xanthochorema nathaliae Espeland & Johanson, 2008
Xanthochorema christinae Espeland & Johanson, 2008
Xanthochorema johnwardi Espeland & Johanson, 2008

HYDROPSYCHIDAE Curtis, 1835

Hydropsyche Pictet, 1834
Hydropsyche amiena (Sykora, 1967)
 Cheumatopsyche amiena Sykora, 1967
 Orthopsyche amiena (Sykora, 1967); Oláh *et al.* (2006)
 Hydropsyche amiena (Sykora, 1967); Geraci *et al.* (2010)
Hydropsyche apide (Oláh & Johanson, 2006)
 Caledopsyche apide Oláh & Johanson, 2006
 Hydropsyche apide (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche atalanta (Schefter & Ward, 2002)
 Caledopsyche atalanta Schefter & Ward, 2002
 Hydropsyche atalanta (Schefter & Ward, 2002); Geraci *et al.* (2010)
Hydropsyche ayapona (Oláh & Johanson, 2006)
 Orthopsyche ayapona Oláh & Johanson, 2006
 Hydropsyche ayapona (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche caledona (Oláh & Johanson, 2006)
 Abacaria caledona Oláh & Johanson, 2006;
 Caledopsyche caledona (Oláh & Johanson, 2006); Espeland & Johanson (2010)
 Hydropsyche caledona (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche cerberus (Schefter & Ward, 2002)
 Caledopsyche cerberus Schefter & Ward, 2002
 Hydropsyche cerberus (Schefter & Ward, 2002); Geraci *et al.* (2010)
Hydropsyche cheesmanae (Kimmins, 1953)
 Caledopsyche cheesmanae Kimmins, 1953
 Hydropsyche cheesmanae (Kimmins, 1953); Geraci *et al.* (2010)
Hydropsyche edhamasa (Oláh & Johanson, 2006)
 Orthopsyche edhamasa Oláh & Johanson, 2006
 Hydropsyche edhamasa (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche erotos (Schefter & Ward, 2002)
 Caledopsyche erotos Schefter & Ward, 2002
 Hydropsyche erotos (Schefter & Ward, 2002); Geraci *et al.* (2010)
Hydropsyche imbah (Oláh & Johanson, 2006)
 Orthopsyche imbah Oláh & Johanson, 2006

Hydropsyche imbah (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche kimminsi (Oláh & Johanson, 2006)
Caledopsyche kimminsi Oláh & Johanson, 2006
Hydropsyche kimminsi (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche kina (Oláh & Johanson, 2006)
Orthopsyche kina Oláh & Johanson, 2006
Hydropsyche kina (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche leander (Schefter & Ward, 2002)
Caledopsyche leander Schefter & Ward, 2002
Hydropsyche leander (Schefter & Ward, 2002); Geraci *et al.* (2010)
Hydropsyche mcfarlanei (Oláh & Johanson, 2006)
Orthopsyche mcfarlanei Oláh & Johanson, 2006
Hydropsyche mcfarlanei (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche nadauna (Oláh & Johanson, 2006)
Orthopsyche nadauna Oláh & Johanson, 2006
Hydropsyche nadauna (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche nevoissi (Oláh & Johanson, 2006)
Orthopsyche nevoissi Oláh & Johanson, 2006
Hydropsyche nevoissi (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche noumea (Oláh & Johanson, 2006)
Caledopsyche noumea Oláh & Johanson, 2006
Hydropsyche noumea (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche pakaha (Oláh & Johanson, 2006)
Orthopsyche pakaha Oláh & Johanson, 2006
Hydropsyche pakaha (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche peta (Oláh & Johanson, 2006)
Orthopsyche peta Oláh & Johanson, 2006
Hydropsyche peta (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche phallaina (Schefter & Ward, 2002)
Caledopsyche phallaina Schefter & Ward, 2002
Hydropsyche phallaina (Schefter & Ward, 2002); Geraci *et al.* (2010)
Hydropsyche piuna (Oláh & Johanson, 2006)
Orthopsyche piuna Oláh & Johanson, 2006
Hydropsyche piuna (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche rashala (Oláh & Johanson, 2006)
Orthopsyche rashala Oláh & Johanson, 2006
Hydropsyche rashala (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche sematho (Oláh & Johanson, 2006)
Orthopsyche sematho Oláh & Johanson, 2006
Hydropsyche sematho (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche schefterae (Oláh & Johanson, 2006)
Orthopsyche schefterae Oláh & Johanson, 2006
Hydropsyche schefterae (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche tnedá (Oláh & Johanson, 2006)
Orthopsyche tnedá Oláh & Johanson, 2006
Hydropsyche tnedá (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche touna (Oláh & Johanson, 2006)
Orthopsyche touna Oláh & Johanson, 2006
Hydropsyche touna (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche vrupama (Oláh & Johanson, 2006)
Orthopsyche vrupama Oláh & Johanson, 2006
Hydropsyche vrupama (Oláh & Johanson, 2006); Geraci *et al.* (2010)
Hydropsyche wardi (Oláh & Johanson, 2006)
Orthopsyche wardi Oláh & Johanson, 2006

Hydropsyche wardi (Oláh & Johanson, 2006); Geraci *et al.* (2010)

PHILOPOTAMIDAE Stephens, 1829

Hydrobiosella Tillyard, 1924

Hydrobiosella brevis Espeland & Johanson, 2007

Hydrobiosella dzumacensis Espeland & Johanson, 2007

Hydrobiosella longispina Espeland & Johanson, 2007

Hydrobiosella mouensis Espeland & Johanson, 2007

Hydrobiosella neocaledoniae Espeland & Johanson, 2007

Hydrobiosella uncinata Kimmins, 1953

Chimarra Stephens, 1829

Chimarra hienghene Malicky, 1981

ECNOMIDAE Ulmer, 1903

Agmina Ward & Schefter, 2000

Agmina acula Ward, 2003

Agmina arator Ward, 2003

Agmina artarima Ward & Schefter, 2000

Agmina berada Ward & Schefter, 2000

Agmina bimaculata Ward & Schefter, 2000

Agmina cheirella Ward, 2003

Agmina comata Ward, 2003

Agmina diriwi Ward & Schefter, 2000

Agmina hamata Ward & Schefter, 2000

Agmina hastata Ward & Schefter, 2000

Agmina hexacantha Ward, 2003

Agmina hircina Ward & Schefter, 2000

Agmina hirta Ward & Schefter, 2000

Agmina jepiva Ward & Schefter, 2000

Agmina joycei Ward & Schefter, 2000

Agmina kapiwa Ward & Schefter, 2000

Agmina kara Ward & Schefter, 2000

Agmina kavinia (Ward & Schefter, 2000)

Ecnomina kavinia Ward & Schefter, 2000

Agmina kavinia (Ward & Schefter, 2000); Johanson & Espeland (2010)

Agmina mariae Ward & Schefter, 2000

Agmina nodosa Ward, 2003

Agmina padi Ward & Schefter, 2000

Agmina panda Ward & Schefter, 2000

Agmina parie Ward & Schefter, 2000

Agmina pugnea Ward, 2003

Agmina rhara Ward & Schefter, 2000

Agmina tridactyla Ward, 2003

Agmina urugi Ward & Schefter, 2000

Agmina vuegi Ward & Schefter, 2000

Caledomina Johanson, 2011

Caledomina noumea Johanson, 2011

POLYCENTROPODIDAE Ulmer, 1903

Polyplectropus Ulmer, 1905b

Polyplectropus aberrus Johanson & Ward, 2009

Polyplectropus angustus Johanson & Ward, 2009

Polyplectropus aoupiniensis Johanson & Ward, 2009
Polyplectropus caledonia Johanson & Ward, 2009
Polyplectropus christinae Johanson & Ward, 2009
Polyplectropus clavus Johanson & Ward, 2009
Polyplectropus curvispinus Johanson & Ward, 2009
Polyplectropus dorsospinus Johanson & Ward, 2009
Polyplectropus hovmoelleri Johanson & Ward, 2009
Polyplectropus koueus Johanson & Ward, 2009
Polyplectropus millei Johanson & Ward, 2009
Polyplectropus nathalae Johanson & Ward, 2009
Polyplectropus nodyg Johanson & Ward, 2009
Polyplectropus piroguensis Johanson & Ward, 2009
Polyplectropus papei Johanson & Ward, 2009
Polyplectropus pernodensis Johanson & Ward, 2009
Polyplectropus taoensis Johanson & Ward, 2009
Polyplectropus tenerus Johanson & Ward, 2009
Polyplectropus triangulatus Johanson & Ward, 2009
Polyplectropus viklundi Johanson & Ward, 2009
Polyplectropus yndog Johanson & Ward, 2009

KOKIRIIDAE McFarlane, 1964

Mecynostomella Kimmins, 1953
Mecynostomella brevis Johanson, 2003a
Mecynostomella caledonia Johanson, 2003a
Mecynostomella flinti Johanson, 2003a
Mecynostomella fusca Kimmins, 1953
Mecynostomella hollowayi Johanson, 2003a
Mecynostomella sigma Johanson, 2003a
Mecynostomella spinosa Johanson, 2003a

LEPTOCERIDAE Leach, 1815

Gracilipsodes Sykora, 1967
Gracilipsodes aoupiniensis Malm & Johanson, 2008b
Gracilipsodes aureus Malm & Johanson, 2008b
Gracilipsodes aurorus Malm & Johanson, 2008b
Gracilipsodes grandis Malm & Johanson, 2008b
Gracilipsodes koghiensis Malm & Johanson, 2008b
Gracilipsodes lanceolatus Malm & Johanson, 2008b
Gracilipsodes psocopterus Sykora, 1967
Gracilipsodes robustus Malm & Johanson, 2008b
Gracilipsodes similis Ward, 2001

Symphitoneuria Ulmer, 1905
Symphitoneuria clara Ward, 2001
Symphitoneuria digitata Malm & Johanson, 2007
Symphitoneuria lacsiensis Malm & Johanson, 2007
Symphitoneuria licmetica Neboiss, 1986
Symphitoneuria triangulata Malm & Johanson, 2007

Triplectides Kolenati, 1859
Triplectides abnormalis Malm & Johanson, 2008a
Triplectides aequalichelatus Malm & Johanson, 2008a
Triplectides australis Navás, 1934 (first recorded from New Caledonia by Malm & Johanson (2008a))
Triplectides dawnae Malm & Johanson, 2008a

Triplectides koghiensis Malm & Johanson, 2008a
Triplectides mariannae Malm & Johanson, 2008a
Triplectides minutus Malm & Johanson, 2008a
Triplectides mouiensis Malm & Johanson, 2008a
Triplectides nathaliae Malm & Johanson, 2008a
Triplectides noumeiensis Malm & Johanson, 2008a
Triplectides sasali Mary & Ward, 2001
Triplectides smithi Mary & Ward, 2001
Triplectides tigrinus Malm & Johanson, 2008a
Triplectides wardi Malm & Johanson, 2008a
Triplectides winstanleyi Mary & Ward, 2001

HELICOPHIDAE Mosely, 1953

Helicopha Mosely, 1953

Helicopha acuta Johanson & Keijsner, 2008
Helicopha amieuensis Johanson, 2003b
Helicopha angulata Johanson & Keijsner, 2008
Helicopha aoupiniensis Johanson & Keijsner, 2008
Helicopha bifurcata Johanson & Keijsner, 2008
Helicopha dognyensis Johanson, 2003b
Helicopha einap Johanson, 2003b
Helicopha koghi (Johanson & Ward, 2001)
 Briama koghi Johanson & Ward, 2001
 Helicopha koghi (Johanson & Ward, 2001); Johanson & Keijsner (2008)
Helicopha loripes Johanson & Keijsner, 2008
Helicopha mouirangensis Johanson & Keijsner, 2008
Helicopha neocaledonia Johanson & Keijsner, 2008
Helicopha paniensis Johanson, 2003b
Helicopha patriciae Johanson & Ward, 2001
Helicopha pouebo Johanson & Ward, 2001
Helicopha ramea Johanson, 2003b
Helicopha rembai Johanson & Ward, 2001
Helicopha taoensis Johanson & Keijsner, 2008
Helicopha stellata Johanson & Keijsner, 2008

HELICOPSYCHIDAE Ulmer, 1906

Helicopsyche von Siebold, 1856

Helicopsyche arenaria Ross, 1975
Helicopsyche arma Johanson, 1999
Helicopsyche asymmetrica Ross, 1975
Helicopsyche baroua Johanson, 1999
Helicopsyche boualaria Ross, 1975
Helicopsyche browni Johanson, 1999
Helicopsyche caledonia Ross, 1975
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Helicopsyche rembaia Johanson, 1999
Helicopsyche rossi Johanson, 1999
Helicopsyche starmuehlneri Ross, 1975
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