



World Catalog of the Beach-Fly  
Family Canacidae (Diptera)

WAYNE N. MATHIS

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## ABSTRACT

Mathis, Wayne N. World Catalog of the Beach-Fly Family Canacidae (Diptera). *Smithsonian Contributions to Zoology*, number 536, 18 pages, 1992.—All genera and species of the dipterous family Canacidae, more commonly known as beach or surf flies, are cataloged. Included are 113 species and 12 genera that are arranged within a classification of two tribes and three subfamilies. The distribution of each species is given by major zoogeographic region(s) and country(ies) within each region. Information on the natural history, as available in the literature, and depository of primary types are also provided.

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# World Catalog of the Beach-Fly Family Canacidae (Diptera)

*Wayne N. Mathis*

## Introduction

True flies of the family Canacidae, more commonly known as beach or surf flies, are found in temperate and tropical zones throughout the world, usually in association with maritime beaches. The family has comparatively few species, at least by hexapod standards, and except for Wirth's review (1951), the family has never been treated comprehensively. Wirth's paper is now of limited use, especially at the species level, where less than one-third of the present species were treated (32 of 113 species). Most species and several genera have been described since 1951, and few comprehensive treatments are now available except on a regional level (see review of faunal and revisionary papers below). The purpose of this paper is to partially address the lack of comprehensive works through publication of this catalog, which is intended to have worldwide coverage and to include all taxa that have been described.

Catalogs or checklists are an indispensable tool for anyone needing an up-to-date reference to a currently accepted name and frequently to other pertinent information such as bibliographic and distributional data. This is so because most information is filed under a species' scientific name, which then becomes the key to retrieval of information from the literature. The system, however, is dynamic and subject to interpretation. The taxonomic literature is constantly changing to reflect current work, and some species are known by several names. Thus a complete listing of names, including synonyms, is an important starting point for locating information, whether as the basis for applied and basic research or simply to satisfy a curiosity.

The information included in a catalog is usually arranged in a logical and organized format that allows for its convenient and rapid conveyance—in short, a quick and easy storage and retrieval system. The format and amount of information presented varies greatly, however, and these issues have in part led to semantic debates over differences between the terms “checklist” and “catalog” and attempts to obviate the issue through use of a more neutral term, such as database (Cogan et al., 1980; Thompson and Knutson, 1987). My use of the term catalog is intended to convey a more comprehensive treatment, including information on all valid names, synonyms, type species, and deposition of primary types. The bibliographic section includes complete references (author, date, original and most subsequent citations), and distributional and other biotic information, as available in the literature, are also provided. Not all citations that occur in the literature of beach flies are included in this catalog or the bibliography section, especially where I suspect that the species being treated was misidentified, and inclusion would further promulgate inaccurate distributional data.

The sequence of taxa, especially at the generic level and above, should not be interpreted to represent a phylogenetic scheme. Indeed, one subfamily, *Zaleinae*, comprising only three species, is only questionably included in the family and in this catalog. When McAlpine (1982, 1985) proposed *Zaleinae* he was unsure of its phylogenetic relationship, although he did associate it with the Canacidae. Others have followed that precedent (Mathis, 1989a), mostly for convenience and completeness. The phylogenetic relationships of *Zaleinae* remain enigmatic, however, and further study may reveal its placement elsewhere, such as with the Tethinidae.

FORMAT.—The format I have adopted follows that advocated by systematists from the Systematic Entomology Laboratory (United States Department of Agriculture) (Hodges, pers. comm.). Details are illustrated in the following hypothetical examples of generic and species entries (genera *Xus* and *Yus* and species *albus* and *zeus*). All valid generic and species names are indicated in bold face type.

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Genus *Xus* Author(s) (number of species in the genus)

*Xus* Author(s), year:page. Type species: *Xus albus* Author(s), year, method of type designation.—Author(s), year:page [annotation(s)].

*Yus* Author(s), year:page. Type species: *Yus zeus* Author(s), year, method of type designation.—Author(s), year:page [annotation(s) such as “synonymy”].

*albus* Author(s). Geographic distribution by major faunal realm(s): Country (province or state).

*Yus albus* Author(s), year:page [primary type(s) and gender(s) (deposition information); type locality (Country. Province or state: specific locality (annotation(s) such as elevation or habitat)].—Author, year:page [annotation(s)].

*Xus zeus* Author(s), year: page [primary type(s) and gender(s) (deposition information); type locality (Country. Province or state: specific locality (annotation(s) such as elevation or habitat)].—Author, year:page [annotation(s) such as “synonymy”].

*Yus zeus*.—Author(s), year:page [annotation(s) such as “generic combination”].

Within a taxon, the subordinate taxa are listed alphabetically, i.e., genera within a tribe, species within a genus.

Although this is the first treatment of the family on a worldwide basis since Wirth (1951), there are several papers that treat beach flies on a regional basis. These may be of interest and use to the reader, and a summary of these and revisionary works are provided here.

**FAUNAL TREATMENTS** (papers listed chronologically under major faunal realms).—Afrotropical: Frey (1958b, fauna of the Cape Verde Islands); Wirth (1960, South African fauna); Mathis and Wirth (1979, Malagasy fauna); Cogan (1980, catalog); Canzoneri (1982, fauna of Sierra Leone); Canzoneri (1987, fauna of the Sudan); Mathis (1988b, fauna of the Seychelles); Mathis and Freidberg (1991, tribe Canacini and subfamily Nocticanacinae).

Australasian/Oceanian: Delfinado (1970, fauna of New Guinea); Hardy and Delfinado (1980, Hawaiian fauna); Mathis (1989a, catalog).

Nearctic: Wheeler (1952, fauna of the United States); Wirth (1965, catalog); Cole (1969, fauna of Western North America); Wirth (1987, general description and discussion of family, key to nearctic genera).

Neotropical: Wirth (1969b, fauna of the Galápagos Islands); Wirth (1975, catalog); Mathis (1989b, fauna of the Caribbean and Gulf of Mexico).

Oriental: Delfinado (1975, Sri Lankan fauna); Delfinado and Wirth (1977, catalog).

Palaearctic: Becker (1926, palaearctic fauna); Séguy (1934, fauna of France); Frey (1936, 1945, 1949, 1958a, faunas of the Canary Islands, Azores, Madeira, and Canary Islands respectively); Miyagi (1963, Korean fauna); Stackelberg (1970,

western palaearctic fauna); Cogan (1976, checklist of the British fauna); Mathis (1982a, fauna of Israel); Mathis and Freidberg (1982, review of western palaearctic species); Cogan (1984, catalog).

**REVISIONARY TREATMENTS** (papers listed chronologically).—Wirth (1964, *Trichocanace* Wirth); Wirth (1969a, *Canaceoides* Cresson); Wirth (1970, the *snodgrassii* group = *Canacea* Cresson); Mathis and Wirth (1978, *Paracanace* Mathis and Wirth); Mathis (1982a, *Canace* Haliday); Mathis (1982b, *Isocanace* Mathis); McAlpine (1982, *Zalea* McAlpine = *Zalea* McAlpine, 1985); Mathis, 1989b, the *texensis* group of *Nocticanace* Malloch).

**ABBREVIATIONS**.—To economize on space I have used well-known acronyms for museums, especially to indicate the deposition of a primary type(s), and also for some locality data. These abbreviations are as follows:

AM	Australian Museum, Sydney, Australia
AMNH	American Museum of Natural History, New York, New York, USA
ANSP	Academy of Natural Sciences of Philadelphia, Pennsylvania, USA
BBM	Bernice P. Bishop Museum, Honolulu, Hawaii, USA
BMNH	former British Museum (Natural History), collections in The Natural History Museum, London, England
CAS	California Academy of Sciences, San Francisco, California, USA
DEI	former Deutsches Entomologisches Institut, collections in the Institut für Pflanzenschutzforschung, Zweigstelle Eberswalde, Abteilung Taxonomie der Insekten, Eberswalde, Germany
DCSA	Dipterorum Collectionis Strobl, Admont, Austria
HUS	Hokkaido University, Sapporo, Japan
IOC	Instituto Oswaldo Cruz, Rio de Janeiro, Brazil
LACM	Los Angeles County Museum of Natural History, Los Angeles, California, USA
MCV	Museo Civico di Storia Naturale de Venezia, Venice, Italy
MNHN	Museum National d'Histoire Naturelle, Paris, France
MRAC	Musée Royal de l'Afrique Centrale (Koninklijk Museum voor Midden-Afrika), Tervuren, Belgium
NMI	National Museum of Ireland, Dublin, Ireland
NMP	Natal Museum, Pietermaritzburg, South Africa
NZAC	New Zealand Arthropod Collection, Entomology Division, DSIR, Auckland, New Zealand
SUJ	Saikyo University, Kyoto, Japan
SMN	Staatliches Museum für Naturkunde in Stuttgart, Ludwigsburg, Germany
TMC	Transvaal Museum Collection, Pretoria, South Africa



UMO	University Museum, Oxford University, Oxford, England
USNM	former United States National Museum, collections in the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA
ZIL	Zoological Institute, Lund University, Lund, Sweden
ZMA	Instituut voor Taxonomische Zoologie, Zoologisch Museum, Universiteit van Amsterdam, Amsterdam, Netherlands
ZMHU	Zoologisches Museum, Humboldt Universität, Berlin, Germany

Abbreviations for primary types: HT = Holotype, LT = Lectotype, ST = Syntype, T = Type (the specific status of the primary type is unknown).

Abbreviations for states of the USA: CA = California, FL = Florida, MA = Massachusetts, MD = Maryland, ME = Maine, NC = North Carolina, RI = Rhode Island, SC = South Carolina, TX = Texas, VA = Virginia, WA = Washington.

Abbreviations for Canadian provinces and territories: BC = British Columbia, NB = New Brunswick, PE = Prince Edward Island.

Abbreviations for Mexican states: BCN = Baja California

Norte, BCS = Baja California Sur, QNR = Quintana Roo, TAB = Tabasco.

Abbreviations for Australian states: NSW = New South Wales, QLD = Queensland.

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## Catalog

### Family CANACIDAE Jones (113 species)

Canacinae Jones, 1906:170, 198 [as a subfamily of Ephydriidae, incorrect formation of the family-group name]. Type genus: *Canace* Haliday, 1837.

Canaceidae.—Hendel, 1916:297 [incorrect formation of the family-group name].—Wirth, 1951:245–275 [revision].

Canacidae.—Enderlein, 1935:235.—Mathis, 1982b:1–29 [classification].

### Subfamily CANACINAE Jones (32 species)

As above.

Canaceinae.—Hendel, 1913:93 [as a subfamily of Ephydriidae, incorrect formation of the family-group name].

Canacinae.—Enderlein, 1914:326 [as a subfamily of Ephydriidae].—Malloch, 1933:4 [as a subfamily of Ephydriidae].—Mathis, 1982b:2 [as a subfamily of Canacidae, phylogeny].

### Tribe Canacini Jones (5 species)

As above.

Canacini.—Mathis, 1982b:3 [as a tribe of Canacinae].

### Genus *Canace* Haliday (5 species)

*Canace* Haliday in Curtis, 1837:281 [published in synonymy; first made available by use in Haliday, 1839:411; see Thompson and Mathis, 1981]. Type species: *Ephydra nasica* Haliday, 1839, by subsequent monotypy (Haliday, 1839:411).—Loew, 1860:29 [review]; 1874:76 [review].—Schiner, 1863:268 [review].—Rondani, 1875:176, 169 [review].—Becker, 1896:245 [review]; 1905:215 [catalog]; 1926:106 [review].—Wirth, 1951:259 [review].—Stackelberg, 1970:363 [key].—Cogan, 1980:694 [Afrotropical catalog]; 1984:125 [palearctic catalog].—Mathis, 1982a:58 [review, figures of ♂ and ♀ terminalia, heads].—Mathis and Freidberg, 1991:71–75 [review of Afrotropical fauna].

*Ephydra* (*Canace*).—Haliday, 1839:411.—Walker, 1853:268 [review].

*actites* Mathis. Palearctic: Spain (Canary and Madeira Islands).

*Canace salonitana*, in part (misidentification).—Wirth, 1951:264 [review, figure of ♂ terminalia].

*Canace actites* Mathis, 1982a:58 [HT ♀ (USNM 76783); Spain. Canary Islands: Tenerife; figures of head, thorax,

♂ and ♀ terminalia].—Mathis and Freidberg, 1991:72 [key].

*nasica* (Haliday). Afrotropical: Cape Verde Islands, Senegal. Palearctic: Coast of western Europe (England, France, Ireland, and Spain), Mediterranean (Egypt), and islands of eastern Atlantic Ocean (Azores, Canary Islands, and Madeira Islands).

*Ephydra* (*Canace*) *nasica* Haliday, 1839:411 ["England." Type(s) apparently lost (see Mathis, 1982a:60)].—Walker, 1853:269 [review].

*Canace nasica*.—Loew, 1860:29 [review]; 1874:80 [review].—Schiner, 1863:269 [review].—Rondani, 1875:170 [review].—Becker, 1896:247 [list]; 1903:183 [list]; 1905:215 [catalog]; 1926:106 [review].—Séguy, 1934:401 [review, figure of wing and head]; 1936:21 [list, Azores, Canary Islands].—Cresson, 1936:265 [discussion].—Frey, 1936:110 [review, Canary Islands]; 1945:81 [review, Azores]; 1949:37 [list, Madeira Islands]; 1958a:53 [list, Canary Islands]; 1958b:48 [list, Cape Verde Islands].—Wirth, 1951:262 [review, figure of ♀ terminalia]; 1956a:161 [discussion].—Hinton, 1967:319 [natural history, especially of plastron respiration, figures of puparium].—Stackelberg, 1970:362 [list, English translation, 1988:603].—Cogan, 1976:87 [list, Great Britain]; 1980:694 [Afrotropical catalog]; 1984:124 [palearctic catalog].—Mathis, 1982a:60 [review, figures of head, ♂ and ♀ terminalia].—Mathis and Freidberg, 1991:72–73 [review].

*Canace salonitana* variety *rufitarsis* Strobl, 1902:503 [ST 3 ♀ (DCSA); Yugoslavia. Croatia: Fiume (= Rijeka)].—Strobl, 1904:564 [synonymy with *Canace nasica*].

*rossii* Canzoneri. Afrotropical: Sierra Leone.

*Canace rossii* Canzoneri, 1982:61 [HT ♂ (MCV); Sierra Leone. Western Area: Freetown, Lumley Beach di fronte a Juba; habitus].—Mathis and Freidberg, 1991:73 [review, figure of ♂ terminalia].

*salonitana* Strobl. Palearctic: Eastern Mediterranean (Crete, Egypt, Israel, Yugoslavia).

*Canace salonitana* Strobl, 1900:635 [HT ♀ (DCSA); Yugoslavia. Dalmatia (Salona)].—Becker, 1903:184 [review]; 1905:215 [catalog]; 1926:107 [review].—Mathis, 1982a:61 [review, figures of head, ♂ and ♀ terminalia].—Cogan, 1984:124 [palearctic catalog].

*zvuv* Mathis and Freidberg. Afrotropical: Cameroon.

*Canace zvuv* Mathis and Freidberg, 1991:73 [HT ♂ (USNM); Cameroon. Limbe (shore); figures of ♀ terminalia].

#### Tribe Dynomiellini Mathis (27 species)

Dynomiellini Mathis, 1982b:3 [as a tribe of Canacinae]. Type genus: *Dynomiella* Giordani Soika, 1956.

#### Genus *Canace* Cresson (4 species)

*Canace* [lapsus].—Malloch, 1924a:52–53 [description of *C. macateei*, diagnosis of genus, see next entry].—Johnson, 1925:276 [list].—Mathis, 1982a:58 [discussion].

*Canace* Cresson, 1924:164. Type species: *Canace macateei* Malloch, by original designation and monotypy; Cresson validated Malloch's name as an indication.—Mathis, 1982b:4–7 [review; discussion of nomenclatural status and reasons for selection of this genus-group name and author].

*Canace*, in part, of authors.—Malloch, 1933:4 [discussion].—Curran, 1934b:356 [discussion, generic key].—Cresson, 1936:264–265 [discussion, description of new species].—Wirth, 1951: 259–265 [review]; 1965:733 [nearctic catalog]; 1970:397–403 [revision as "*snodgrassii* group"]; 1975:1 [neotropical catalog].—Wheeler, 1952:90–91 [discussion].—Cole, 1969:391 [key, discussion].

*aldrichi* (Cresson). Nearctic: USA (CA).

*Canace aldrichi* Cresson, 1936:264 [HT ♂ (USNM 51848); USA. California: Santa Clara Co., Palo Alto].—Wirth, 1951:262 [review]; 1965:733 [nearctic catalog]; 1970:401 [review, figure of ♂ terminalia].—Wheeler, 1952:91 [distribution, key].—Cole, 1969:391 [list, Western North America].

*Canace aldrich* [sic, printing error].—Wirth, 1956a:161 [discussion].

*Canace aldrichi*.—Mathis, 1982b:6 [generic combination, catalog, key].

*currani* (Wirth). Neotropical: Panama (Canal Area, Darién, Panama), Ecuador (Guayas).

*Canace currani* Wirth, 1970:402 [HT ♂ (USNM 70341); Panama. Darién: Jaqué (light trap); figure of ♂ terminalia]; 1975:1 [neotropical catalog].—Arnaud, 1979:346 [list, type data].

*Canace currani*.—Mathis, 1982b:6 [generic combination, catalog, key].

*macateei* Malloch. Nearctic: Canada (NB, PE), USA (Atlantic and Gulf Coasts from ME to TX). Neotropical: Belize, West Indies (Anguilla, Cuba).

*Canace macateei* Malloch, 1924a:52 [HT ♂ (USNM 26883); USA. Georgia: Glynn Co., Jekyll Island].—Cresson, 1924:164 [discussion]; 1936:265 [discussion].—Johnson, 1925:276 [list, MA, RI]; 1930:145 [list, MA].—Mathis, 1982b:7 [catalog, key; figures of head, thorax, and leg].—Mathis, 1989b:592–593 [review].

*Canace snodgrassii*, in part (misidentification).—Johnson, 1910:807 [list, USA (NJ)].—Wirth, 1951:260 [review, synonymy, figure of ♂ and ♀ terminalia]; 1965:733 [nearctic catalog].

*Canace macateei*.—Malloch, 1933:5 [note].—Curran,

1934b:356 [status].—Wheeler, 1952:90–91 [distribution, key].—Wirth, 1970:399 [resurrection from synonymy, review, figure of ♂ terminalia].—Teskey and Valiela, 1977:545–547 [description of larva and puparium, natural history].

*snodgrassii* (Coquillett). Neotropical: Ecuador (Galápagos Islands), Panama (Canal Area).

*Canace snodgrassii* Coquillett, 1901:378 [LT ♂ (designated by Cresson 1936:264; USNM 4430); Ecuador. Galápagos Islands: Albemarle Island (= Isabela)].—Cresson, 1936:264 [review].—Cole, 1969:391 [list, Galápagos Islands].—Wirth, 1969b:578 [review]; 1970:401–402 [review, figure of ♂ terminalia]; 1975:1 [neotropical catalog].

*Canace snodgrassii*, in part.—Wirth, 1951:260 [review, figure of ♂ and ♀ terminalia]; 1956a:161 [discussion].

*Canace snodgrassii* [sic, lapsus].—Wirth, 1956b:48 [discussion].

*Canacea snodgrassii*.—Mathis, 1982b:7 [generic combination, catalog, key].

#### Genus *Chaetocanace* Hendel (2 species)

*Chaetocanace* Hendel, 1914:98. Type species: *Canace biseta* Hendel, by original designation and monotypy.—Malloch, 1924b:333 [generic key].—Curran, 1934b:357 [generic key].—Wirth, 1951:265 [review].—Miyagi, 1963:122 [list, Korea].—Delfinado and Wirth, 1977:391 [Oriental catalog].—Mathis, 1982b:7–9 [review]; 1989a:670 [Australasian/oceanian catalog].—Cogan, 1984:124 [palearctic catalog].

*biseta* (Hendel). Australasian/oceanian: Australia (QLD), Papua New Guinea (Central). Oriental: Japan (Ryukyu Islands), Philippines (Davao, Luzon), Taiwan (Tainan). Palearctic: Japan (Hokkaido, Honshu, Kyushu, Shikoku), Korea (Seoul).

*Canace biseta* Hendel, 1913:95 [ST (undetermined number, DEI); Taiwan. Tainan].

*Chaetocanace biseta*.—Hendel, 1914:98 [generic combination].—Wirth, 1951:265 [review].—Miyagi, 1963:122, 125 [review, figures of ♂ and ♀ terminalia]; 1973b:82 [list, Philippines].—Delfinado, 1975:221–222 [comparison with *C. brincki*, figure of ♂ terminalia].—Delfinado and Wirth, 1977:391 [Oriental catalog].—Mathis, 1982b:9 [review, catalog, key; figures of head and thorax].—Cogan, 1984:124 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].

*Canace (Chaetocanace) biseta*.—Hennig, 1941:158 [list of types, DEI].

*brincki* Delfinado. Australasian/oceanian: Australia (QLD), Papua New Guinea (Central). Oriental: Sri Lanka (Northern Province).

*Chaetocanace brincki* Delfinado, 1975:221 [HT ♂ (ZIL); Sri Lanka. Northern Province: Mannar (16 km E), Nay Aru at Pallamadu].—Delfinado and Wirth, 1977:391 [Oriental catalog].—Mathis, 1982b:9 [catalog, key]; 1989a:670 [Australasian/oceanian catalog].

#### Genus *Dynomiella* Giordani Soika (4 species)

*Dynomiella* Giordani Soika, 1956:130. Type species: *Dynomiella arenicola* Giordani Soika (= *Canace stuckenbergi* Wirth, 1956b), by original designation and monotypy.—Mathis, 1982b:9–11 [review].

*Canace*, in part, of authors.—Wirth, 1956b:48–51 [revision, key]; 1960:390 [synonymy of *Dynomiella* with *Canace*].—Cogan, 1980:694 [Afrotropical catalog].

*cala* (Cresson). Afrotropical: South Africa (Cape).

*Canace cala* Cresson, 1934:220 [HT ♀ (TMC); South Africa. Cape: East London].—Wirth, 1951:264 [review]; 1956b:49–51 [key, review].—Cogan, 1980:694 [Afrotropical catalog].

*Dynomiella cala*.—Mathis, 1982b:11 [generic combination, catalog, key].

*glauca* (Wirth). Afrotropical: South Africa (Cape).

*Canace glauca* Wirth, 1956b:49 [HT ♂ (USNM 62712); South Africa. Cape: Port Elizabeth (56 km E), Gamtoos River (lower reaches, within 3 km of ocean)].—Cogan, 1980:694 [Afrotropical catalog].

*Dynomiella glauca*.—Mathis, 1982b:11 [generic combination, catalog, key].

*spinosa* (Wirth). Afrotropical: South Africa (Cape).

*Canace spinosa* Wirth, 1956b:51 [HT ♂ (USNM 62714); South Africa. Cape: Port Elizabeth (56 km E), Gamtoos River (lower reaches, within 3 km of ocean)].—Cogan, 1980:694 [Afrotropical catalog].

*Dynomiella spinosa*.—Mathis, 1982b:11 [generic combination, catalog, key; figures of head, thorax, and leg].

*stuckenbergi* (Wirth). Afrotropical: South Africa (Cape), Namibia (Walvis Bay).

*Canace stuckenbergi* Wirth, 1956b:50 [HT ♂ (USNM 62713); South Africa. Cape: Port Elizabeth (56 km E), Gamtoos River (lower reaches, within 3 km of ocean)].—Cogan, 1980:694 [Afrotropical catalog].

*Dynomiella stuckenbergi*.—Mathis, 1982b:11 [generic combination, catalog, key].

*Dynomiella arenicola* Giordani Soika, 1956:130 [HT ♂ (MRAC); Namibia. Walfish Bay (= Walvis Bay)].—Wirth, 1960:391 [synonymy].

#### Genus *Isocanace* Mathis (4 species)

*Isocanace* Mathis, 1982b:11. Type species: *Isocanace briani* Mathis, by original designation; 1989a:670 [Australa-

sian/oceanian catalog].

- Canace*, in part, of authors.—Mathis and Wirth, 1979:786.
- albiceps*** (Malloch). Australasian/oceanian: Australia (NSW, QLD).  
*Canace albiceps* Malloch, 1925:87 [HT ♀ (AM); Australia. New South Wales: Sydney].—Wirth, 1951:262 [review].
- Isocanace albiceps* (Malloch).—Mathis, 1982b:18 [generic combination; figures of head, thorax, and ♂ terminalia]; 1989a:670 [Australasian/oceanian catalog].
- australis*** Mathis. Afrotropical: Kenya, South Africa (Cape).  
*Isocanace australis* Mathis, 1982b:14 [HT ♂ (NMP); South Africa. Cape: Port St. Johns; figure of head and ♂ terminalia].
- briani*** Mathis. Afrotropical: Madagascar (Antseranana), Seychelles (Aldabra).  
*Canace stuckenbergi* Mathis and Wirth, 1979:786 [HT ♂ (MNHN); Madagascar. Antseranana: Sambirano Lokobe Nosy Bé; figure of ♂ terminalia; junior primary homonym, see Wirth, 1956b:50].  
*Isocanace briani* Mathis, 1982b:15 [new name for *C. stuckenbergi* Mathis and Wirth, 1979; figures of head, thorax, and ♂ terminalia].
- flava*** (Canzoneri and Meneghini). Afrotropical: Zaire (Haut-Zaire).  
*Canace flava* Canzoneri and Meneghini, 1969:184 [HT ♂ (MRAC); Zaire. Albert National Park: May ya Moto].—Cogan, 1980:694 [Afrotropical catalog].  
*Isocanace flava*.—Mathis, 1982b:17 [generic combination; figures of head, thorax, ♂ terminalia].

#### Genus *Trichocanace* Wirth (3 species)

- Trichocanace*** Wirth, 1951:252. Type species: *Trichocanace sinensis* Wirth, by original designation and monotypy; 1964:225–227 [revision; key].—Wirth and Delfinado, 1977:392 [Oriental catalog].—Mathis and Wirth, 1979:795 [diagnosis, discussion].—Cogan, 1980:694 [Afrotropical catalog].—Mathis, 1982b:20–22 [review]; 1989a:670 [Australasian/oceanian catalog].
- atra*** Wirth. Australasian/oceanian: Australia (QLD), Papua New Guinea (Central). Oriental: Philippines (Mindanao), Thailand (Cholburi).  
*Trichocanace atra* Wirth, 1964:227 [HT ♂ (USNM 67135); Australia. Queensland: Cairns; figure of ♂ terminalia].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Mathis 1982b:21 [catalog, key]; 1989a:670 [Australasian/oceanian catalog].
- marksae*** Wirth. Australasian/oceanian: Australia (QLD).  
*Trichocanace marksae* Wirth, 1964:226 [HT ♂ (USNM 67134); Australia. Queensland: Cairns (bayshore); figure of ♂ terminalia].—Mathis, 1982b:21 [catalog, key; figures of head and thorax]; 1989a:670 [Australasian/oceanian catalog].

- sinensis*** Wirth. Afrotropical: Madagascar (Toliara). Australasian/oceanian: Australia (QLD). Oriental: China (Fukien), Malaysia (Negri Sembilan), Thailand (Bangkok).  
*Trichocanace sinensis* Wirth, 1951:253 [HT ♂ (BMNH); China. Fukien: Foochow (= Minhow); figure of head, wing, ♂ terminalia]; 1964:225 [review].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Mathis and Wirth, 1979:795 [review].—Cogan, 1980:694 [Afrotropical catalog].—Mathis, 1982b:22 [catalog, key]; 1989a:670 [Australasian/oceanian catalog].

#### Genus *Xanthocanace* Hendel (10 species)

- Xanthocanace*** Hendel, 1914:98. Type species: *Canace ranula* Loew, by original designation.—Malloch, 1924b:334 [discussion, generic key].—Cresson, 1936:270 [synonymy, discussion].—Curran, 1934b:357 [generic key].—Wirth, 1951:249 [review, key].—Miyagi, 1963:123 [review, key].—Delfinado and Wirth, 1977:393 [Oriental catalog].—Cogan, 1980:694 [Afrotropical catalog]; 1984:125 [palearctic catalog].—Mathis, 1982b:22–25 [review]; 1989a:670 [Australasian/oceanian catalog].—Mathis and Freidberg, 1982:97–104 [review of western palearctic species].
- Dinomyia*** Becker, 1926:107. Type species: *Canace ranula* Loew, by monotypy; preoccupied, Martynov, 1909 (Trichoptera), and Dyar, 1919 (Diptera).—Séguy, 1934:401 [generic key].—Cresson, 1936:270 [synonymy with *Xanthocanace*].—Stackelberg, 1970:362 [key].
- Myioblax*** Enderlein, 1935:235. Type species: *Canace ranula* Loew, by original designation; 1936:172 [review].—Cresson, 1936:270 [synonymy with *Xanthocanace*].
- capensis*** Wirth. Afrotropical: South Africa (Cape).  
*Xanthocanace capensis* Wirth, 1956b:47 [HT ♂ (USNM 62711); South Africa. Cape: Port Alfred, Kleinemonde River (sea water)].—Miyagi, 1963:125–126 [distribution, key].—Cogan, 1980:694 [Afrotropical catalog].—Mathis, 1982b:24 [catalog, key].
- kaplanorum*** Mathis and Freidberg. Palearctic: Egypt (Sinai), Oman.  
*Xanthocanace kaplanorum* Mathis and Freidberg, 1982:100 [HT ♂ (USNM 100203); Egypt. Sinai: Nabek; figures of head, ♂ terminalia].
- magna*** (Hendel). Oriental: Taiwan (Anping).  
*Canace magna* Hendel, 1913:95 [ST (2, DEI); Taiwan (Formosa). Anping].  
*Xanthocanace magna*.—Hendel, 1914:98 [generic combination].—Malloch, 1924b:334 [list].—Wirth, 1951:250 [review].—Miyagi, 1963:125–126 [distribution, key].—Delfinado and Wirth, 1977:393 [Oriental catalog].—Mathis, 1982b:24 [catalog, key].  
*Canace (Xanthocanace) magna*.—Hennig, 1941:158 [listing of syntypes in DEI].

- nigrifrons** Malloch. Australasian/oceanian: Australia (NSW, QLD).  
*Xanthocanace nigrifrons* Malloch, 1924b:334 [HT ♂ (AM); Australia. New South Wales: Woy Woy; figures of head].—Wirth, 1951:250 [review].—Miyagi, 1963:125–126 [distribution, key].—Griffiths, 1972:256 [discussion of ♂ terminalia].—Mathis, 1982b:24 [catalog, key, figures of head and thorax]; 1989a:670 [Australasian/oceanian catalog].
- orientalis** (Hendel). Oriental: China (Fukien), India (Bombay), Taiwan (Alikang, Anping), Thailand (Bangphra).  
*Canace orientalis* Hendel, 1913:94 [ST (14, DEI); Taiwan (Formosa). Anping].  
*Xanthocanace orientalis*.—Hendel, 1914:98 [generic combination].—Malloch, 1924b:334 [list].—Wirth, 1951:251 [review, figures of ♂ terminalia].—Miyagi, 1963:125–126 [distribution, key].—Delfinado and Wirth, 1977:393 [Oriental catalog].—Mathis, 1982b:24 [catalog, key].  
*Canace (Xanthocanace) orientalis*.—Hennig, 1941:158 [listing of syntypes in DEI].
- pollinosa** Miyagi. Oriental: Malaysia (Negri Sembilan, Perak). Palearctic: Japan (Hokkaido), Korea (Seoul).  
*Xanthocanace pollinosa* Miyagi, 1963:124 [HT ♂ (USNM); Korea. Seoul; figures of ♂ terminalia].—Mathis, 1982b:24 [catalog, key].—Cogan, 1984:126 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- ranula** (Loew). Palearctic: Belgium, Denmark, England, Germany, Ireland, Italy, Spain (Canary Islands).  
*Canace ranula* Loew, 1874:81 [ST (number undetermined): Germany. coast of North Sea, Cuxhaven (ZMHU). Ireland. Kerry, Rossbegh creek and Smerwick Bay (NMI or UMO)].—Gercke, 1887:1–4 [discussion, mouthparts].—Becker, 1896:247 [review, figures of head and wing]; 1905:215 [palearctic catalog].—Czerny and Strobl, 1909:266 [list, Spain].—Frey, 1921:140–142 [discussion, figures of mouthparts].  
*Xanthocanace ranula*.—Hendel, 1914:98 [generic combination]; 1928:108 [list, figures of head and wing].—Malloch, 1924b:334 [list].—Wirth, 1951:250 [review].—Miyagi, 1963:125 [distribution, key].—Rald, 1976:77–79 [list, Denmark, figure of head and mouthparts, key].—Cogan, 1976:87 [list, British insects]; 1984:126 [palearctic catalog].—Mathis, 1982b:24 [catalog, key].—Mathis and Freidberg, 1982:101 [review, figures of ♂ terminalia].  
*Dinomyia ranula*.—Becker, 1926:110 [generic combination, review].—Séguy, 1934:401 [review].—Goetghebuer, 1942:8 [list, Belgium].—Stackelberg, 1970:363 [list, North Sea].  
*Myioblax ranula*.—Enderlein, 1935:235 [generic combination]; 1936:172 [key].  
*Canace nasica* (misidentification).—Haliday, 1855:64 [review, figure of head and habitus (dorsal aspect)].
- sabroskyi** Mathis and Freidberg. Palearctic: Egypt (Sinai).  
*Xanthocanace sabroskyi* Mathis and Freidberg, 1982:100 [HT ♂ (USNM 100204); Egypt. Sinai: Nabek; figures of head, ♂ terminalia].
- seoulensis** Miyagi. Palearctic: Korea (Seoul).  
*Xanthocanace seoulensis* Miyagi, 1963:123 [HT ♂ (USNM); Korea. Seoul; figures of ♂ terminalia].—Mathis, 1982b:25 [catalog, key].
- zeylanica** Delfinado. Oriental: Sri Lanka (Northwestern Province).  
*Xanthocanace zeylanica* Delfinado, 1975:223 [HT ♀ (ZIL); Sri Lanka. Northwestern Province: Puttalan (5 km N, salt pan)].—Delfinado and Wirth, 1977:393 [Oriental catalog].—Mathis, 1982b:25 [catalog, key].
- Subfamily NOCTICANACINAE Mathis (78 species)  
 Nocticanacinae Mathis, 1982b:3. Type genus: *Nocticanace* Malloch, 1933.
- Genus *Canaceoides* Cresson (9 species)
- Canaceoides** Cresson, 1934:221. Type species: *Canace nudata* Cresson, 1926, by original designation.—Wirth, 1951:266–269 [revision]; 1954:59 [notes, comparison with *Nocticanace*]; 1965:733 [nearctic catalog]; 1969a:551–570 [revision]; 1975:1–5 [neotropical catalog].—Wheeler, 1952:91 [notes on synonymy].—Cole, 1969:391 [key, discussion].—Hardy and Delfinado, 1980:384–388 [revision of Hawaiian species].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- Procanace** Curran, 1934a:160. Type species: *Procanace panamensis* Curran, 1934a, by original designation; preoccupied, Hendel, 1913 (Diptera).
- Neocanace** Curran, 1934b:357. Type species: *Procanace panamensis* Curran, 1934a, automatic; new name for *Procanace* Curran, 1934.—Wirth, 1951:266 [synonymy with *Canaceoides*].
- angulatus** Wirth. Australasian/oceanian: Hawaii (Hawaii, Kauai, Oahu). Nearctic: Mexico (BCN). Neotropical: Ecuador (Galápagos Islands), Peru (Lima).  
*Canaceoides nudatus*, in part (misidentification), of authors.—Bryan, 1926:69 [list]; 1934:432, 455 [list].—Hardy, 1952:466 [list].  
*Canaceoides angulatus* Wirth, 1969a:556 [HT ♂ (USNM 69932); Hawaii: Oahu, Waimea (intertidal rocks); figures of ♂ and ♀ terminalia]; 1969b:590 [review]; 1975:2 [neotropical catalog].—Arnaud, 1979:346 [list, type data].—Hardy and Delfinado, 1980:384 [revision, figures of head, ♂ and ♀ terminalia, larvae].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- balboai** Wirth. Neotropical: Panama (Canal Area, Darién).  
*Canaceoides balboai* Wirth, 1969a:559 [HT ♂ (USNM

- 69933); Panama. Darién: Jaqué; figures of ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].
- hawaiiensis** Wirth. Australasian/oceanian: Hawaii (Hawaii, Maui, Oahu).
- Canaceoides hawaiiensis* Wirth, 1969a:561 [HT ♂ (BBM); Hawaii. Maui: Hana; figures of ♂ and ♀ terminalia].—Hardy and Delfinado, 1980:387 [revision, figures of ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- nudatus** (Cresson). Nearctic: Mexico (BCN), USA (CA, WA).
- Canace nudata* Cresson, 1926:257 [HT ♂ (ANSP 6307); USA. California: Los Angeles Co.].—Malloch, 1933:114 [note].—Williams, 1938:108 [natural history].—Arnaud, 1979:346 [list, type data].
- Canaceoides nudatus*.—Cresson, 1934:221 [generic combination].—Wirth, 1951:266 [revision, figures of ♂ terminalia]; 1954:60 [notes]; 1965:733 [nearctic catalog]; 1969a:562 [revision, figures of ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].—Wheeler, 1952:92 [notes].—Cole, 1969:391 [list, CA, WA].
- panamensis** (Curran). Neotropical: Panama (Canal Area).
- Procanace panamensis* Curran, 1934a:161 [HT ♂ (AMNH); Panama. Canal Area: Patilla Point].
- Canaceoides panamensis*.—Wirth, 1951:268 [revision, generic combination; figures of ♂ terminalia]; 1969a:563 [revision, figures of ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].
- scutellatus** Wirth. Nearctic: Mexico (BCS).
- Canaceoides scutellatus* Wirth, 1969a:563 [HT ♂ (CAS 10156); Mexico. Baja California Sur: Gulf of California, Isla de Sanildefonso; figures of ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].—Arnaud, 1979:347 [list, type data].
- setosus** Wirth. Nearctic: Mexico (BCS).
- Canaceoides setosus* Wirth, 1969a:565 [HT ♀ (CAS 10157); Mexico. Baja California Sur: Gulf of California, Isla de Santa Catalina; figures of ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].—Arnaud, 1979:347 [list, type data].
- spinus** Wirth. Nearctic: Mexico (BCS).
- Canaceoides spinus* Wirth, 1969a:567 [HT ♂ (CAS 10158); Mexico. Baja California Sur: Cabo San Lucas; figures of ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].—Arnaud, 1979:347 [list, type data].
- tenuistylus** Wirth. Nearctic: Mexico (BCS).
- Canaceoides tenuistylus* Wirth, 1969a:568 [HT ♂ (CAS 10159); Mexico. Baja California Sur: Gulf of California, Isla San Francisco; figures of ♂ and ♀ terminalia].—Arnaud, 1979:347 [list, type data].
- Genus *Nocticanace* Malloch (33 species)
- Nocticanace* Malloch, 1933:4. Type species: *Nocticanace peculiaris* Malloch, 1933, by original designation.—Wirth, 1951:269–274 [revision]; 1954:59 [notes]; 1969b:581–590 [revision of species from Galápagos Islands, discussion]; 1975:2–3 [neotropical catalog].—Miyagi, 1965b:299–303 [revision of Japanese species].—Cole, 1969:391 [key, discussion].—Delfinado and Wirth, 1977:391–392 [Oriental catalog].—Mathis and Wirth, 1979:788–790 [diagnosis, discussion].—Cogan, 1980:694 [Afrotropical catalog]; 1984:124 [palearctic catalog].—Mathis, 1989a:669 [Australasian/oceanian catalog]; 1989b:594–599 [review of Caribbean and nearby fauna].
- actites** Mathis and Wirth. Afrotropical: Madagascar (Tomasina), Seychelles (Aldabra).
- Nocticanace actites* Mathis and Wirth, 1979:790 [HT ♂ (MNHN); Madagascar. Toamasina: Fénérive (= Fenoarivo Atsinanana; beach); figures of ♂ terminalia].—Mathis and Freidberg, 1991:76 [review].
- arnaudi** Wirth. Nearctic: USA (CA).
- Nocticanace arnaudi* Wirth, 1954:59 [HT ♂ (USNM 61608); USA. California: Monterey Co., Point Lobos].—Wirth, 1965:734 [nearctic catalog].—Cole, 1969:391 [list, CA].—Arnaud, 1979:347 [list, type data].
- ashlocki** Wirth. Neotropical: Ecuador (Galápagos Islands).
- Nocticanace ashlocki* Wirth, 1969b:589 [HT ♂ (CAS 10160); Ecuador. Galápagos Islands: Isla Santa Cruz, Academy Bay (coastal rocks and beach); figures of wing, ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].—Arnaud, 1979:347 [list, type data].
- caffraria** (Cresson). Afrotropical: South Africa (Cape).
- Canaceoides caffraria* Cresson, 1934:222 [HT ♂ (TMC); South Africa. Cape: East London].
- Nocticanace caffraria*.—Wirth, 1951:273 [revision, generic combination]; 1956b:51 [review].—Cogan, 1980:694 [Afrotropical catalog].—Mathis and Freidberg, 1991:76–77 [review].
- cancer** Wirth. Neotropical: Ecuador (Galápagos Islands).
- Nocticanace cancer* Wirth, 1969b:586 [HT ♂ (SMN); Ecuador. Galápagos Islands: Isla Pinta (on crabs); figures of ♂ terminalia]; 1975:2 [neotropical catalog].
- chilensis** (Cresson). Neotropical: Chile, Panama.
- Canace chilensis* Cresson, 1931:116 [HT ♂ (BMNH); Chile. Chiloe Island, Ancud].
- Canaceoides chilensis*.—Cresson, 1934:221 [generic combination].—Stuardo Ortiz, 1946:146 [catalog, Chile].—Wirth, 1951:269 [review, figures of ♂ terminalia].
- Nocticanace chilensis*.—Wirth, 1954:61 [review; generic combination]; 1975:2 [neotropical catalog].
- curioi** Wirth. Neotropical: Ecuador (Galápagos Islands).
- Nocticanace galapagensis* (misidentification).—Curio, 1964:794–797 [habits].
- Nocticanace curioi* Wirth, 1969b:583 [HT ♂ (SMN); Ecuador. Galápagos Islands: Isla Wolf (from crabs);

- figures of leg, ♂ and ♀ terminalia]; 1975:2 [neotropical catalog].
- cyclura*** Mathis and Wirth. Afrotropical: Madagascar (Toliara).  
*Nocticanace cyclura* Mathis and Wirth, 1979:791 [HT ♂ (MNHN); Madagascar. Toliara: Sud-Est Sainte Luce, Fort Dauphin (= Taolanaro; 10 m); figures of ♂ terminalia].—Mathis and Freidberg, 1991:77 [review].
- danjoensis*** Miyagi. Palearctic: Japan (Kyushu).  
*Nocticanace danjoensis* Miyagi, 1973d:174 [HT ♂ (HUS); Japan. Kyushu: Nagasaki, Danjo Islands, Meshima; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- darwini*** Wirth. Neotropical: Ecuador (Galápagos Islands).  
*Nocticanace darwini* Wirth, 1969b:585 [HT ♂ (SMN); Ecuador. Galápagos Islands: Isla Genovesa (on crabs); figures of leg, ♂ and ♀ terminalia]; 1975:3 [neotropical catalog].
- flavipalpis*** Mathis and Wirth. Afrotropical: Madagascar (Toamasina), Seychelles (Aldabra, Cosmoledo).  
*Nocticanace flavipalpis* Mathis and Wirth, 1979:792 [HT ♂ (MNHN); Madagascar. Toamasina: Est Ivontaka, Mananara (15 m); figures of ♂ terminalia].—Mathis and Freidberg, 1991:77 [review].
- galapagensis*** (Curran). Neotropical: Ecuador (Galápagos Islands).  
*Procanace galapagensis* Curran, 1934a:160 [HT ♀ (CAS 3804); Ecuador. Galápagos Islands: Albemarle Island (= Isabela), Tagus Cove].—Arnaud, 1979:348 [list, type data].  
*Nocticanace galapagensis*.—Wirth, 1951:274 [revision, generic combination]; 1969b:581 [revision, figures of ♂ and ♀ terminalia]; 1975:3 [neotropical catalog].—Curio, 1964:794 [in part, habits].
- hachijuoensis*** Miyagi. Palearctic: Japan (Honshu).  
*Nocticanace hachijuoensis* Miyagi, 1965b:302 [HT ♂ (HUS); Japan. Honshu: Hachijo-jima; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- japonica*** Miyagi. Palearctic: Japan (Hokkaido, Honshu, Kyushu).  
*Nocticanace japonicus* Miyagi, 1965b:300 [HT ♂ (HUS); Japan. Hokkaido: Otaru; figures of ♂ and ♀ terminalia]; 1973d:175 [list].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- litoralis*** Delfinado. Oriental: Taiwan.  
*Nocticanace litoralis* Delfinado, 1971:119 [HT ♂ (BBM); Taiwan. Yehliu Beach, Taipei Hsien; figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:391 [Oriental catalog].
- littorea*** Mathis and Freidberg. Afrotropical: Kenya.  
*Nocticanace littorea* Mathis and Freidberg, 1991:77 [HT ♂ (USNM); Kenya. Takaungu (50 km N Mombasa); figure of ♂ terminalia].
- mahensis*** (Lamb). Afrotropical: Seychelles (Mahé).  
*Canace mahensis* Lamb, 1912:328 [HT ♀ (BMNH); Seychelles (Mahé)].  
*Nocticanace mahensis*.—Wirth, 1951:274 [generic combination, review].—Cogan, 1980:694 [Afrotropical catalog].—Mathis, 1982c:423 [revision, figures of ♂ terminalia].—Mathis and Freidberg, 1991:78 [review].
- malayensis*** Miyagi. Oriental: Malaysia.  
*Nocticanace malayensis* Miyagi, 1973c:169 [HT ♂ (HUS); Malaysia. Penang; figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:391 [Oriental catalog].
- marshallensis*** Wirth. Australasian/oceanian: Marshall Islands.  
*Nocticanace marshallensis* Wirth, 1951:272 [HT ♂ (USNM 59968); Marshall Islands. Ailinglapalap Atoll: Bigatyelung Island; figure of ♂ terminalia].—Arnaud, 1979:348 [list, type data].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- pacifica*** Sasakawa. Oriental: Japan (Ryukyu), Taiwan. Palearctic: Japan (Kyushu).  
*Nocticanace pacificus* Sasakawa, 1955:367 [HT ♂ (SUJ); Japan. Ryukyu Islands: Tokara Islands, Nakanoshima Island; figures of ♂ and ♀ terminalia].—Miyagi, 1965b:302 [revision, figures of ♂ and ♀ terminalia]; 1973a:81 [list, Taiwan].—Delfinado and Wirth, 1977:391 [Oriental catalog].—Morimoto, 1989:833 [list, Japan].
- panamensis*** Mathis. Neotropical: Panama (Canal Area).  
*Nocticanace panamensis* Mathis, 1989b:599 [HT ♂ (USNM); Panama. Canal Area: Mojinga Swamp, Ft. Sherman; figures of ♂ terminalia].
- peculiaris*** Malloch. Australasian/oceanian: Austral Islands, Marianas Islands, Marquesas, Mangareva. Oriental: Japan (Okinawa).  
*Nocticanace peculiaris* Malloch, 1933:4 [HT ♂ (BBM); Marquesas. Eiao: Vaituha].—Wirth, 1951:270 [revision, figures of ♂ and ♀ terminalia].—Cole, 1969:391 [list, Marquesas].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- propristyla*** Miyagi. Oriental: Malaysia.  
*Nocticanace propristyla* Miyagi, 1973c:170 [HT ♂ (HUS); Malaysia. Port Dickson; figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:391 [Oriental catalog].
- scapania*** Wirth. Neotropical: Ecuador (Galápagos Islands).  
*Nocticanace scapanius* Wirth, 1969b:586 [HT ♂ (CAS, 10161); Ecuador. Galápagos Islands: Isla Fernandina: Punta Espinosa (intertidal rocks); figures of ♂ and ♀ terminalia]; 1975:3 [neotropical catalog].—Arnaud, 1979:348 [list, type data].
- sinaiensis*** Mathis. Palearctic: Egypt, Israel.  
*Nocticanace sinaiensis* Mathis, 1982a:64 [HT ♂ (USNM

- 76784); Israel. Sinai: Ras Burka; figures of head, thorax, and ♂ terminalia].
- sinensis** Delfinado. Oriental: China (Hong Kong).  
*Nocticanace sinensis* Delfinado, 1971:120 [HT ♀ (BBM); Hong Kong. N.T. Sai Kung Station; figures of ♀ terminalia].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Mathis, 1982c:424 [review, figure of ♂ terminalia].
- spinicosta** Wirth. Neotropical: Ecuador (Galápagos Islands).  
*Nocticanace spinicosta* Wirth, 1969b:589 [HT ♂ (CAS 10162); Ecuador. Galápagos Islands: Isla Fernandina: Punta Espinosa (intertidal rocks); figures of ♂ and ♀ terminalia]; 1975:3 [neotropical catalog].—Arnaud, 1979:348 [list, type data].—Cogan, 1984:125 [paleartic catalog].
- takagii** Miyagi. Palearctic: Japan (Honshu, Shikoku, Kyushu).  
*Nocticanace takagii* Miyagi, 1965b:302 [HT ♂ (HUS); Japan. Honshu: Kumano, Kii, Wakayama-ken; figures of ♂ and ♀ terminalia]; 1973d:175 [list].—Morimoto, 1989:833 [list, Japan].
- taprobane** Mathis. Oriental: Sri Lanka.  
*Nocticanace taprobane* Mathis, 1982c:421 [HT ♂ (USNM 100224); Sri Lanka. Galle District: Mirigama; figures of ♂ terminalia].
- texensis** (Wheeler). Nearctic: USA (FL, NC, TX). Neotropical: Belize, Mexico (TAB), West Indies (Antigua, Dominica, St. Vincent).  
*Canaceoides texensis* Wheeler, 1952:92 [HT ♂ (CAS 6311); USA. Texas: Galveston Co., Galveston].—Arnaud, 1979:347 [list, type data].  
*Nocticanace texensis*.—Wirth, 1954:62 [review; generic combination]; 1965:734 [nearctic catalog]; 1975:3 [neotropical catalog].—Mathis, 1989b:595–598 [revision, figures of ♂ terminalia].
- usingeri** Wirth. Neotropical: Ecuador (Galápagos Islands).  
*Nocticanace usingeri* Wirth, 1969b:587 [HT ♀ (CAS 10163); Ecuador. Galápagos Islands: Isla Fernandina: Punta Espinosa; figures of ♂ and ♀ terminalia]; 1975:3 [neotropical catalog].—Arnaud, 1979:348 [list, type data].
- wirthi** Mathis. Nearctic: Bermuda, USA (FL). Neotropical: West Indies (Cuba).  
*Nocticanace wirthi* Mathis, 1989b:598 [HT ♂ (USNM); USA. Florida: Palm Beach Co., Boyton Beach; figures of ♂ terminalia].
- zimmermani** Wirth. Australasian/oceanian: Rapa Island.  
*Nocticanace zimmermani* Wirth, 1951:272 [HT ♂ (BBM); Rapa Island. Karapo Rahi Islet; figure of ♂ and ♀ terminalia].—Arnaud, 1979:348 [list, type data].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- designation.—Mathis, 1989b:600–603 [review of Caribbean and nearby fauna].
- Canace*, in part, of authors.—Wirth, 1975:1 [neotropical catalog].
- aicen** Mathis and Wirth. Nearctic: USA (FL). Neotropical: Belize, Mexico (QNR), West Indies (Cuba, Dominica, St. Lucia, St. Vincent).  
*Paracanace aicen* Mathis and Wirth, 1978:533 [HT ♂ (USNM 75304); Dominica. Calibishie; figures of wing, ♂ terminalia].—Mathis, 1989b:601–603 [review].
- blantoni** (Wirth). Neotropical: Panama (Darién).  
*Canace blantoni* Wirth, 1956a:162 [HT ♂ (USNM 63002); Panama. Darién: Jaqué]; 1975:1 [neotropical catalog].  
*Paracanace blantoni*.—Mathis and Wirth, 1978:524 [generic combination], 527 [key].
- cavagnaroi** (Wirth). Neotropical: Ecuador (Galápagos Islands).  
*Canace cavagnaroi* Wirth, 1969b:579 [HT ♂ (CAS 10155); Ecuador. Galápagos Islands: Isla Santa Cruz: Academy Bay (beach and coastal collecting); figure of ♂ terminalia, ♀ spermatheca]; 1975:1 [neotropical catalog].—Arnaud, 1979:346 [list, type data].  
*Paracanace cavagnaroi*.—Mathis and Wirth, 1978:524 [generic combination], 527 [key].
- hoguei** Mathis and Wirth. Neotropical: Costa Rica (Cocos Island).  
*Paracanace hoguei* Mathis and Wirth, 1978:527 [HT ♂ (LACM); Costa Rica. Cocos Island: Wafer Bay; figures of legs, wing, ♂ terminalia].
- lebam** Mathis and Wirth. Neotropical: West Indies (Jamaica).  
*Paracanace lebam* Mathis and Wirth, 1978:530 [HT ♂ (USNM 75303); Jamaica. Runaway Bay; figures of head, ♂ terminalia].—Mathis, 1989b:603 [review].
- maritima** (Wirth). Neotropical: Ecuador (Galápagos Islands).  
*Canace maritima* Wirth, 1951:263 [HT ♂ (USNM 59967); Ecuador. Galápagos Islands: Bartolomé Island (edge mangrove); figure of ♂ and ♀ terminalia]; 1956a:162 [key]; 1969b:578 [review]; 1975:1 [neotropical catalog].  
*Paracanace maritima*.—Mathis and Wirth, 1978:524 [generic combination], 527 [key].
- oliveirai** (Wirth). Neotropical: Brazil (Rio de Janeiro).  
*Canace oliveirai* Wirth, 1956a:164. [HT ♂ (IOC); Brazil. Rio de Janeiro: Ilha Guaiba, Baía de Sepetiba]; 1975:1 [neotropical catalog].  
*Paracanace oliveirai*.—Mathis and Wirth, 1978:524 [generic combination], 527 [key].

Genus *Procanace* Hendel (29 species)

Genus *Paracanace* Mathis and Wirth (7 species)

**Paracanace** Mathis and Wirth, 1978:524. Type species: *Paracanace hoguei* Mathis and Wirth, 1978, by original

**Procanace** Hendel, 1913:93. Type species: *Procanace griseocens* Hendel, by original designation.—Wirth, 1951:253–259 [revision].—Miyagi, 1965a:85 [revision of Japanese species].—Delfinado, 1970:527–531 [revision



- of species from New Guinea].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Mathis and Wirth, 1979:794 [diagnosis, discussion].—Hardy and Delfinado, 1980:388–406 [revision of Hawaiian species].—Cogan, 1984:125 [palearctic catalog].—Mathis, 1989a:669–670 [Australasian/oceanian catalog]; 1989b:603–607 [review of Caribbean and nearby fauna].
- acuminata** Hardy and Delfinado. Australasian/oceanian: Hawaii (Hawaii).  
*Procanace acuminata* Hardy and Delfinado, 1980:389 [HT ♂ (BBM)]; Hawaii. Hawaii: east slope of Mauna Kea, Kapue Stream (1000 ft [= 300 m]); figures of wing, ♂ and ♀ terminalia, larvae].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- aestuaticola** Miyagi. Palearctic: Japan (Shikoku).  
*Procanace aestuaticola* Miyagi, 1965a:89 [HT ♂ (HUS)]; Japan. Shikoku: Matsuyama; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- bifurcata** Hardy and Delfinado. Australasian/oceanian: Hawaii (Oahu).  
*Procanace bifurcata* Hardy and Delfinado, 1980:392 [HT ♂ (BBM)]; Hawaii. Oahu: Opaepa Stream (1150 ft [= 350 m]); figures of ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- canzonerii** Mathis and Freidberg. Afrotropical: Cameroon.  
*Procanace canzonerii* Mathis and Freidberg, 1991:79 [HT ♂ (USNM)]; Cameroon. Limbe (shore); figures of ♂ terminalia].
- cogani** Mathis. Afrotropical: Seychelles (Mahé).  
*Procanace cogani* Mathis, 1988:24 [HT ♂ (USNM)]; Seychelles. Mahé: Anse aux Pins; figures of ♂ terminalia].—Mathis and Freidberg, 1991:83 [review].
- confusa** Hardy and Delfinado. Australasian/oceanian: Hawaii (Hawaii).  
*Procanace confusa* Hardy and Delfinado, 1980:394 [HT ♂ (BBM)]; Hawaii. Hawaii: Akaka Falls (stream above); figures of ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- constricta** Hardy and Delfinado. Australasian/oceanian: Hawaii (Molokai).  
*Procanace constricta* Hardy and Delfinado, 1980:396 [HT ♂ (BBM)]; Hawaii. Molokai: Halawa Valley (wet rocks in swift moving stream); figures of ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- cressoni** Wirth. Oriental: China. Palearctic: Japan (Hokkaido, Honshu, Shikoku, Kyushu).  
*Procanace cressoni* Wirth, 1951:256 [HT ♂ (BMNH)]; China. Fukien: Foochow (= Minhow); figures of ♂ terminalia].—Miyagi, 1965a:97 [revision, figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Morimoto, 1989:833 [list, Japan].
- dianneae** Mathis. Nearctic: Bermuda, USA (FL, MD, NC, SC, VA).  
*Procanace dianneae* Mathis, 1988a:330 [HT ♂ (USNM)]; USA. Virginia: Westmoreland Co., Westmoreland State Park (banks of Potomac River); figures of ♂ terminalia].—Mathis, 1989b:606–607 [review].
- flavescens** Miyagi. Palearctic: Japan (Kyushu).  
*Procanace flavescens* Miyagi, 1965a:88 [HT ♂ (HUS)]; Japan. Kyushu: Ibusuki, Kagoshima-ken; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- flaviantennalis** Miyagi. Oriental: Japan (Ryukyu Islands).  
*Procanace flaviantennalis* Miyagi, 1965a:90 [HT ♂ (HUS)]; Japan. Ryukyu Islands: Ishigaki-jima; figures of ♂ and ♀ terminalia].—Morimoto, 1989:833 [list, Japan].
- fulva** Miyagi. Palearctic: Japan (Hokkaido, Honshu, Kyushu).  
*Procanace fulva* Miyagi, 1965a:91 [HT ♂ (HUS)]; Japan. Hokkaido: Okoppe; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- gressitti** Delfinado. Australasian/oceanian: Papua New Guinea.  
*Procanace gressitti* Delfinado, 1970:527 [HT ♂ (BBM)]; Papua New Guinea. NE Wonerara (1450 m); figures of ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- griseocens** Hendel. Afrotropical: Kenya, Liberia, Nigeria, Sierra Leone, Sudan, Zaire. Australasian/oceanian: Papua New Guinea, Yap Islands. Oriental: Bangladesh, Japan (Ryukyu Islands), Malaysia, Nepal, Taiwan, Thailand, West Pakistan.  
*Procanace griseocens* Hendel, 1913:93 [ST ♂ and ♀ (NMW); Taiwan. Anping].—Wirth, 1951:258 [revision, figures of ♂ terminalia].—Miyagi, 1965a:96 [revision, figures of ♂ and ♀ terminalia]; 1973b:82 [list].—Delfinado, 1970:528 [list, New Guinea, figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].—Mathis, 1989a:669 [Australasian/oceanian catalog].—Mathis and Freidberg, 1991:83–84 [review].
- Procanace fluvialis* Canzoneri, 1987:95 [HT ♂ (MCV)]; Sudan. Khartoum (Nile River); habitus figure].—Mathis and Freidberg, 1991:83 [synonymy].
- hendeli** Delfinado. Oriental: Taiwan.  
*Procanace hendeli* Delfinado, 1971:119 [HT ♂ (BBM)]; Taiwan. Wulai, Taipei Hsien (150 m); figures of ♀ terminalia].—Delfinado and Wirth, 1977:392 [Oriental catalog].
- macquariensis** Womersley. Australasian/oceanian: Macquarie Island.  
*Procanace macquariensis* Womersley, 1937:78 [HT ♂ (BMNH)]; Macquarie Island].—Wirth, 1951:259 [review].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- nakazatoi** Miyagi. Oriental: Japan (Ryukyu Islands).  
*Procanace nakazatoi* Miyagi, 1965a:95 [HT ♂ (HUS)];

- Japan. Ryukyu Islands: Okinawa, Nago; figures of ♂ and ♀ terminalia].—Morimoto, 1989:833 [list, Japan].
- nigroviridis** Cresson. Australasian/oceanian: Hawaii (Kauai).  
*Procanace nigroviridis* Cresson, 1926:277 [HT ♂ (BBM); Hawaii. Kauai].—Bryan, 1934:432, 455 [list].—Wirth, 1951:254 [revision, figures of ♂ and ♀ terminalia].—Hardy and Delfinado, 1980:398 [figures of head, ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- novaeguineae** Delfinado. Australasian/oceanian: Indonesia (Irian Jaya). Oriental: Philippines.  
*Procanace novaeguineae* Delfinado, 1970:529 [HT ♂ (BBM); Indonesia (Irian Jaya). Waris (S of Hollandia, 450–500 m); figures of ♂ and ♀ terminalia].—Miyagi, 1973b:82 [list, Philippines].—Delfinado and Wirth, 1977:392 [Oriental catalog].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- opaca** de Meijere. Oriental: Indonesia.  
*Procanace opaca* de Meijere, 1916:272 [T (number and sex undetermined; ZMA); Indonesia. Java: Wonosobo District].—Wirth, 1951:258 [review].—Delfinado and Wirth, 1977:392 [Oriental catalog].
- pauliani** Mathis and Wirth. Afrotropical: Madagascar (Toliara).  
*Procanace pauliani* Mathis and Wirth, 1979:794 [HT ♂ (MNHN); Madagascar. Toliara: Saint Augustin (6 m); figure of ♂ terminalia].—Mathis and Freidberg, 1991:84 [review, figures of ♂ terminalia].
- pninae** Mathis and Freidberg. Afrotropical: Kenya.  
*Procanace pninae* Mathis and Freidberg, 1991:81 [HT ♂ (USNM); Kenya. Takaungu (50 mi N [= 80 km] Mombasa); figures of ♂ terminalia].
- quadrisetosa** Hardy and Delfinado. Australasian/oceanian: Hawaii (Kauai).  
*Procanace quadrisetosa* Hardy and Delfinado, 1980:401 [HT ♀ (BBM); Hawaii. Kauai: Waipoo Falls, Waimea Canyon, Kokee (on wet rocks); figures of ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- rivalis** Miyagi. Palearctic: Japan (Hokkaido).  
*Procanace rivalis* Miyagi, 1965a:86 [HT ♂ (HUS); Japan. Hokkaido: Katsurasawa; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- suigoensis** Miyagi. Palearctic: Japan (Honshu).  
*Procanace suigoensis* Miyagi, 1965a:93 [HT ♂ (HUS); Japan. Honshu: Suigo, Chiba-ken; figures of ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Morimoto, 1989:833 [list, Japan].
- taiwanensis** Delfinado. Oriental: Taiwan.  
*Procanace taiwanensis* Delfinado, 1971:118 [HT ♂ (BBM); Taiwan. Yehliu Beach, Taipei Hsien; figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:392 [Oriental catalog].
- Procanace formosaensis* Miyagi, 1973a:80 [HT ♂ (HUS); Taiwan. Keelung; figures of ♂ and ♀ terminalia].—Delfinado and Wirth, 1977:392 [synonymy].
- townesi** Wirth. Australasian/oceanian: Marshall Islands.  
*Procanace townesi* Wirth, 1951:255 [HT ♂ (USNM 59966); Marshall Islands. Ailinglupalap Atoll: Bigatye-lang Island; figures of ♂ and ♀ terminalia].—Mathis, 1989a:669 [Australasian/oceanian catalog].
- williamsi** Wirth. Australasian/oceanian: Hawaii (Oahu). Palearctic: Japan (Honshu, Shikoku, Kyushu).  
*Procanace williamsi* Wirth, 1951:257 [HT ♂ (USNM 59965); Hawaii. Oahu: Kalihi, Honolulu; figures of ♂ terminalia].—Hardy, 1952:466 [list].—Miyagi, 1965a:96 [revision, figures of ♂ and ♀ terminalia].—Hardy and Delfinado, 1980:402 [revision, figures of head, ♂ and ♀ terminalia].—Cogan, 1984:125 [palearctic catalog].—Mathis, 1989a:670 [Australasian/oceanian catalog].—Morimoto, 1989:833 [list, Japan].
- wirthi** Hardy and Delfinado. Australasian/oceanian: Hawaii (Oahu).  
*Procanace wirthi* Hardy and Delfinado, 1980:404 [HT ♂ (BBM); Hawaii. Oahu: Maunawili Stream (800 ft [= 240 m], on wet rocks); figures of ♂ and ♀ terminalia].—Mathis, 1989a:670 [Australasian/oceanian catalog].

#### Subfamily ZALEINAE McAlpine (3 species)

- Zalinae McAlpine, 1982:116. Type genus: *Zale* McAlpine, 1982 [junior homonym, Hübner, 1818 (Lepidoptera)].
- Zaleinae McAlpine, 1985:81 [new name for Zalinae McAlpine, 1982]. Type genus: *Zalea* McAlpine, 1985.

#### Genus *Zalea* McAlpine (3 species)

- Zale* McAlpine, 1982:108. Type species: *Zale minor* McAlpine, 1982, by original designation; preoccupied, Hübner, 1818 (Lepidoptera).
- Zalea* McAlpine, 1985:82 [new name for *Zale* of McAlpine, 1982]. Type species: *Zale minor* McAlpine, 1982, automatic.—Mathis, 1989a:670 [Australasian/oceanian catalog].
- horningi** (Harrison). Australasian/oceanian: New Zealand.  
*Tethina horningi* Harrison, 1976:143 [HT ♂ (NZAC); New Zealand. Snares Islands: Seal Cove (on supralittoral rocks); figure of wing].
- Zalea horningi*.—McAlpine, 1985:82 [generic combination, discussion].
- major** (McAlpine). Australasian/oceanian: Australia (NSW).  
*Zale major* McAlpine, 1982:112 [HT ♂ (AM); Australia. New South Wales: Bundeena, Port Hacking; figures of head].
- Zalea major*.—McAlpine, 1985:82 [generic combination].—Mathis, 1989a:670 [Australasian/oceanian catalog].

*minor* (McAlpine). Australasian/oceanian: Australia (NSW).

*Zalea minor* McAlpine, 1982:110 [HT ♂ (AM); Australia. New South Wales: Sydney Harbour, Vaucluse, Nielsen Park, Bottle and Glass Rocks; figures wing, ♂ and ♀

terminalia].

*Zalea minor*.—McAlpine, 1985:82 [generic combination].—Mathis, 1989a:670 [Australasian/oceanian catalog].

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