

INTRODUCTION TO THE TRUE HOPPER FAUNA OF THE DUTCH
CARIBBEAN, WITH THE ADDITION OF II SPECIES (HEMIPTERA:
AUCHENORRHYNCHA)

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The true hopper fauna of the Dutch Caribbean is poorly studied and there are hardly any published records. A field trip to Bonaire and the revision of specimens stored in the collection of Naturalis yielded numerous new records and the discovery of 11 species new for the Dutch Caribbean. A short history of the earlier fieldwork in the Dutch Caribbean is given, as well as an overview of the families Cercopidae, Cicadidae, Acanaloniidae, Flatidae and Kinnaridae. Of each newly reported species the distribution and ecological details are given. Photos of habitus and male genitalia are provided for most species, to support a reliable identification.

INTRODUCTION

The Dutch Caribbean (formerly the Dutch Antilles) consists of six islands in the Caribbean Sea: Aruba, Bonaire, Curaçao, Saba, Sint Eustatius and Sint Maarten, the Dutch part of Saint Martin. The three islands Aruba, Bonaire and Curaçao are located near the Venezuelan coast in the Leeward Antilles and are often referred to as the ABC islands. These islands have a relatively dry climate, with a long dry period between February and September. Saba, Sint Eustatius and Sint Maarten are part of the Leeward Islands, and have a wetter climate with a short 'dry season' between January and April. A more comprehensive introduction to the ecology of the Dutch Caribbean is given by Colijn et al. (2019).

Records of Auchenorrhyncha from the Dutch Caribbean are scarce in the literature. Only ten species representing six families have been published, two of which were recently published in the course of the study of Auchenorrhyncha from the RMNH collection. Two species of Delphacidae were recorded: *Pentagramma bivittata* Crawford, 1914 is a widespread species, mentioned from Curaçao by Hedrick-Zeller & Wilson (2010). *Neopunana saba* Ashe, 1983 is an endemic of Saba, described from specimens collected by

R.H. Cobben during his collecting trip to the Dutch Caribbean (Asche 1983). Two species of Flatidae, *Metcalfa pruinosa* (Say, 1830) and *Ormenaria rufifascia* (Walker, 1851), were recorded from Sint Maarten (Yokoyama 2010, 2013). A single species of Kinnaridae, *Quilessa martinensis* De Haas & Bartlett, 2024 was described from Sint Maarten (De Haas & Bartlett 2024). *Aeneolamia*

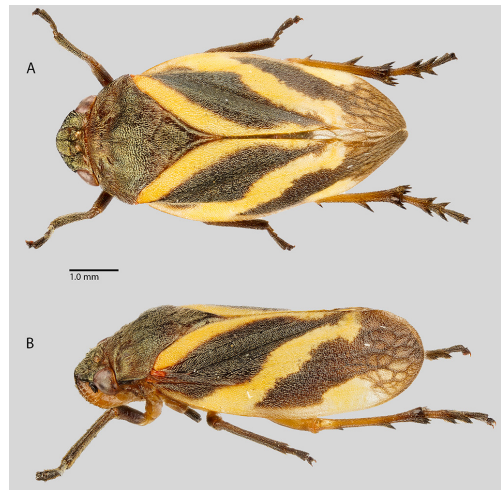


Figure 1. *Aeneolamia reducta* ♀, Curaçao, a. dorsal, b. lateral. All photos by Marco de Haas, unless stated otherwise.

varia (Fabricius, 1787), belonging to the Cercopidae, was reported from Curaçao by Van Buurt & Debrot (2012). Three species of Cicadellidae were described from Curaçao. *Scaphytopius hiliaris* Linnavuori, 1959 and *Tapajosa arawaka* De Haas & Gaiani, 2024 are only known from Curaçao (De Haas & Gaiani 2024, Linnavuori 1959), while *Docalidia pudica* Nielson, 1979 is known from several countries in northeastern South America and Honduras (Nielson 1979). Recently, Sanborn (2020) recorded the cicada *Ariasa albimaculosa* Sanborn, 2016 from Bonaire.

Besides the published species, many more species are present in the RMNH collection (Naturalis Biodiversity Center, Leiden, the Netherlands). These have been collected by only a handful of entomologists, mainly in the 20th century. Entomologists, apart from the authors, who collected ten or more specimens (based on the dataset for this publication) in the 20th century are in alphabetical order: A.C.J. Burgers, R.H. Cobben, W.N. Ellis, B. de Jong, H.J. Mac Gillavry, A.J. Kruseman, R.T. Simon Thomas, J.H. Stock, P. Wagenaar Hummelinck and Van Ypenburg. For most of these collectors, background information can be found in Colijn et al. (2019).

The majority of the available material has been collected by René Cobben, a Dutch entomologist, specialised in Heteroptera. He made a collecting trip to all islands in the Dutch Caribbean from September 1956 until June 1957 and subsequently published a series of papers on the Heteroptera that he collected. In the foreword of his first paper in this series (Cobben 1960), he wrote: "In our investigations emphasis was placed on the fauna and ecology of the Heteroptera or true bugs, to which the present series relates, and the Homoptera Auchenorrhyncha or leaf hoppers s.l., which are to form the subject of another series of publications." The intended series on the Auchenorrhyncha has never been published and most of the material collected by Cobben remained unidentified until the start of this study.

This paper is intended to be a starting point of the work which Cobben never came around to and is dedicated to him. As a sequel to a recent expedition to Bonaire, the Auchenorrhyncha material in the RMNH collection, collected in the Dutch Caribbean, is currently being revised.

Identification of Caribbean Auchenorrhyncha is often difficult due to the presence of numerous undescribed or poorly described species in nearly all studied families. For species that are not easily identified with available literature, photos and/or drawings of important characters will be produced and published in papers dealing with the family in question.

Considering the high number of taxonomic questions and undescribed taxa, only five families represented by few species are included in this first paper. The identification of the taxa in this paper is relatively straightforward. To allow for a reliable identification, photos of genitalia are given for most species.

MATERIAL AND METHODS

Studied specimens Collections of both authors, as well as the RMNH and NIVIP collections were studied. For a small part of material from Sint Maarten, it is not clear whether material was collected in the Dutch or the French part of the island. In this case, the material is only listed when indisputable records from the Dutch part of the island exist as well.

Additional records When possible (photos of high quality allowing a reliable identification), records from the Dutch Caribbean on the citizen science portals Observation.org and iNaturalist.org were identified and these data are added to the dataset. In some cases, collected specimens were both deposited in a collection, as well as uploaded to one of the citizen science portals. In this case, only the collected material is added to the dataset.

Figures Unless stated otherwise, all photos are made by the first author.

Table 1. Overview of Auchenorrhyncha in the Dutch Caribbean: Lit. = published in literature; number of records based on collected material/number of records based on citizen science platforms.

	Aruba	Bonaire	Curaçao	Saba	Sint Eustatius	Sint Maarten
<i>Acanalonia bonducellae</i>				3/2		
<i>Acanalonia viequensis</i>				6/0	5/0	9/0
<i>Aeneolamia reducta</i>			43/9			
<i>Ariasa albimaculosa</i>	5/5	Lit. + 9/6	24/8			
<i>Chalumalna martinensis</i>						0/1
<i>Flatoidinus caesalpiniae nevisanus</i>					5/0	
<i>Flatoidinus</i> spec. 1		38/0				
<i>Flatoidinus</i> spec. 2	8/0		68/0			
<i>Illesia anguillana</i>				5/0	4/0	3/0
<i>Melormenis basalis</i>					6/0	18/0
<i>Petrusa epilepsis</i>				8/2	13/0	19/0
<i>Prosotropis marmorata</i>				5/0		
<i>Quilessa martinensis</i>						1/0
<i>Neopunana saba</i>				Lit.		
<i>Pentagramma bivittata</i>			Lit.			
<i>Docalidia pudica</i>			Lit.			
<i>Scaphytopius hilaris</i>			Lit.			
<i>Tapajosa arawaka</i>			Lit.			

Records The records on which this paper is based are available in a dataset on GBIF (doi.org/10.15468/rajp6z).

The term ‘record’ in this paper refers to all specimens of a species collected on the same date and location.

Abbreviations Abbreviations for collections included in this paper (see GBIF dataset):

- CCB private collection of C.F.M. den Bieman (Ulvenhout, the Netherlands)
 CMH private collection of M.C. de Haas (Ede, the Netherlands)
 NIVIP Netherlands Institute for Vectors, Invasive plants and Plant Health (Wageningen, the Netherlands)
 RMNH Naturalis Biodiversity Center (Leiden, the Netherlands)

RESULTS

Order Auchenorrhyncha
 Suborder Cicadomorpha
 Superfamily Cercopoidea
 Family Cercopidae

Aeneolamia reducta (Lallemand, 1924)
 (fig. 1-3)

Distribution Lallemand (1924) described this species from the central part of Panama. It is also known from Colombia, Costa Rica and Venezuela (Peck 2001) and Brazil (Fidelis et al. 2021). In the Dutch Caribbean, this species is only found on Curaçao, where it is well established and common (table 1). A series of specimens from Bonaire seems to be wrongly labelled and the species is not considered to occur on Bonaire (see note below).

Identification This species can be identified with Fennah (1949), Carvalho & Webb (2005) and Hernández et al. (2021). On Curaçao, a dark



Figure 2. *Aeneolamia reducta* ♂, dark colour morph, Curaçao, a. dorsal, b. lateral.



Figure 3. *Aeneolamia reducta* ♂, aedeagus, lateral, Curaçao.

colour morph of *A. reducta* was collected by R.H. Cobben and B. de Jong (fig. 2). The wings are brown to dark brown with only a yellow spot along the anterior margin of the forewing, where in the typical colour morph the medial yellow band starts. This colouration has not yet been mentioned in literature. Comparison of the male genitalia (fig. 3) shows no differences between the dark and the typical morph. On Curaçao seven records are of dark colour morphs only, five records concern both colour forms and 40 records concern only the typical morph.

Biology Several Neotropical Cercopidae are considered pest species in grasslands, which also applies to *A. reducta* (Thompson & Gonzáles 2005). Along Colombia's northern coast, *A. reducta* is mainly found on the grass *Bothriochloa pertusa*, but it is also recorded from several other Poaceae (Peck 2001).

Remarks In a report on introduced agricultural pests, plant and animal diseases and vectors in the Dutch Caribbean, Van Buurt & Debrot (2012)

mention *Aeneolamia varia* (Fabricius, 1787) as being present on Curaçao. Based on the absence of specimens of this species in the studied material, the presence of the common *A. reducta*, and the fact that the published record of *A. varia* was not based on well-identified specimens, the record of *A. varia* on Curaçao is considered erroneous (pers. comm. Gerard van Buurt). This species has only once been collected on Bonaire, on 17.XII. 1957. This is also the case for *Flatoidinus* spec. 2 and most likely this is the result of an error in labelling of the material, see also the discussion.

Superfamily Cicadoidea
Family Cicadidae

***Ariasa albimaculosa* Sanborn, 2016**
(fig. 4-5)

Distribution After its recent description from Colombia (Sanborn 2016), Sanborn (2020)



Figure 4. *Ariasa albimaculosa* ♀, dorsal, Bonaire. Photo Jan Mertens.



Figure 5. *Ariasa albimaculosa* ♀, dorsolateral, showing the typical white spot on the upper corner of the mesonotum, Bonaire. Photo Jan Mertens.

recorded the species from Bonaire. This species has been commonly found on Aruba, Bonaire and Curaçao (table 1).

Identification The species can be identified with the original description by Sanborn (2016). The white spots in the upper corner of the mesonotum are typical (fig. 5).

Biology Most records from the Dutch Caribbean are done in the second half of the year. The species is often collected at light traps.

Remarks The number of collected specimens is relatively low, since the species often hides in dense thorny bushes or high trees. Due to its loud sound and large size, the species is regularly recorded on citizen science portals.

***Chalumalna martinensis* Boulard, 2001** (fig. 6)

Distribution *Chalumalna martinensis* was described from the French part of Saint Martin (Pic Paradis) (Boulard 2001) and is so far only known from Saint Martin (Sanborn 2024). There is only one observation of a dead female, drowned in a swimming pool, from Sint Maarten. This specimen was identified by the authors based on a photograph submitted by Tello Neckheim on Observation.org. No collected specimens have been seen by the authors.

Identification The species can be identified with the original description by Boulard (2001). An



Figure 6. *Chalumalna martinensis*, Saint Martin. Photo Karl Questel.

updated description, based on Boulard (2001) but with updated terminology was published by Sanborn (2024).

Biology Nothing has been published about the ecology of this species. Based on Boulard (2001) and records on iNaturalist.org and Observation.org, the species is found from May till December.

Remarks This is the only known cicada from Saint Martin (Sanborn 2024).

Suborder Fulgoromorpha
Family Acanaloniidae

***Acanalonia bonducellae* Fennah, 1955**

(fig. 7, 9a, 10a-c)

Distribution *Acanalonia bonducellae* was described from Montserrat and Saint Kitts. From the Dutch Caribbean, this species is only known from seven specimens (three records) on Saba. Two additional

records from Saba have been found on Observation.org.

Identification This species can be identified with the original description by Fennah (1955). Male and female have the same habitus, so only the male is figured (fig. 7). Fennah (1955) drew the left lateral view of the aedeagus, in which most characters can be seen. In addition, a dorsal and ventral view are given (fig. 10a-c).

Biology Specimens from Montserrat were collected on *Caesalpinia bonducella* (Fennah 1955). No hostplant records are available from the Dutch Caribbean.

***Acanalonia viequensis* Caldwell, 1951**

(fig. 8, 9b, 10d-f)

Distribution *Acanalonia viequensis* was described from Vieques Island and Antigua. From the Dutch Caribbean, the species is known from



Figure 7. *Acanalonia bonducellae* ♂, Saba, a. lateral, b. dorsal.



Figure 9. *Acanalonia* species, pygofer lateral, a. *A. bonducellae*, b. *A. viequensis*.

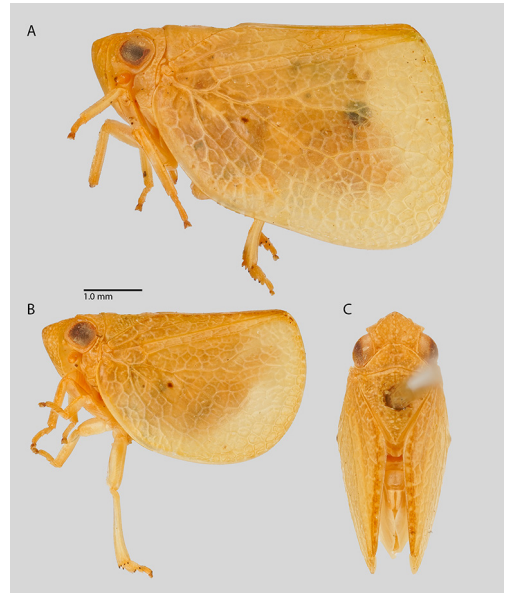


Figure 8. *Acanalonia viequensis*, Saba, a. ♀, lateral, b. ♂, lateral, c. ♂, dorsal.

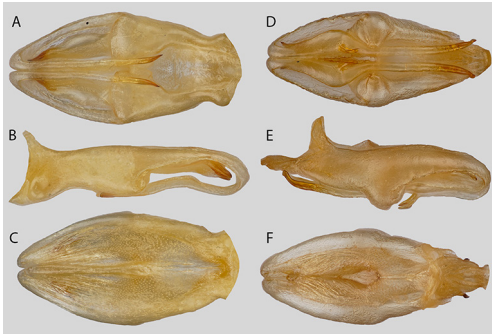


Figure 10. *Acanalonia* species, aedeagus, a-c. *A. bonducellae*, d-f. *A. viequensis*; a., d. aedeagus ventral, b., e. aedeagus left lateral, c., f. aedeagus dorsal.

multiple records from Saba, Sint Eustatius and Sint Maarten (table 1) and seems to be relatively common on all three islands. The records from the Dutch Caribbean fill in a part of the gap between the two previously known islands.

Identification This species can be identified with the original description (Caldwell & Martorell 1951). Male and female differ significantly in shape in lateral view, in contrast to *A. bonducellae*, therefore lateral habitus views are given for both sexes (fig. 8). Caldwell & Martorell (1951) drew the left lateral view of the aedeagus, in which most characters can be seen. In addition, dorsal and ventral views are given (fig. 10d-f).

Biology The specimens from Vieques Island were collected on *Tournefortia gnaphalodes* (= *Mallo-tonia gnaphalodes*) (Caldwell & Martorell 1951). On Sint Eustatius, the species was collected by R.H. Cobben on *Solanum bahamense* (= *Solanum racemosum*).

Family Flatidae

Flatoidinus caesalpiniae nevisanus Fennah, 1965

(fig. 11, 12a, 13)

Distribution The subspecies *Flatoidinus caesalpiniae nevisanus* was described from Nevis. In the Dutch Caribbean, the species is only known from

five records on Sint Eustatius.

Identification The subspecies can be identified with the original description (Fennah 1965), but the genitalia have never been figured. According to Fennah (1965), the subspecies *F. caesalpiniae nevisanus* differs from the nominal subspecies in the absence of markings on the forewings and some details of the male genitalia. Specimens from Sint Eustatius are in general lacking bold markings, though in some specimens a few bold markings are present. In order to facilitate a definitive identification, the complete male genitalia are figured here in the figures 12a and 13.

Biology The type-series from Nevis was collected on *Acacia* spec.

Flatoidinus spec. 1

(fig. 12b, 14, 15a-b)

Distribution This species has only been collected on Bonaire and seems to be absent from Aruba and Curaçao (table 1). On Bonaire it is common and widespread. Records of *Flatoidinus* species on citizen science portals are not included, due to the lack of distinct external differences between *Flatoidinus* spec. 1 and *Flatoidinus* spec. 2.

Identification This taxon differs from the other species from the Dutch Caribbean and all other



Figure 11. *Flatoidinus caesalpiniae nevisanus* ♂, Sint Eustatius, a. lateral, b. dorsal.

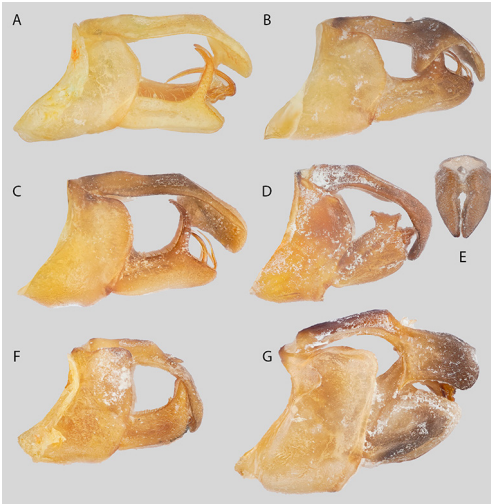


Figure 12. Pygofers of Flatidae, left lateral, a. *Flatoidinus caesalpiniae nevisanus*, b. *Flatoidinus spec. 1*, c. *Flatoidinus spec. 2*, d. *Ilesia anguilla*, e. *Ilesia anguilla* (anal tube, caudal), f. *Melormenis basalis*, g. *Petrusa epilepsis*.

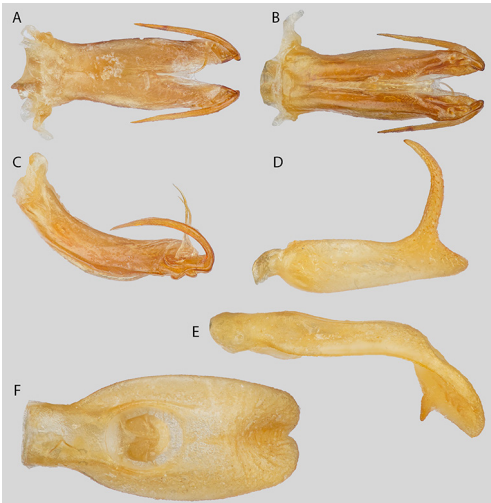


Figure 13. *Flatoidinus caesalpiniae nevisanus* ♂, terminalia, Sint Eustatius, a. aedeagus, dorsal, b. aedeagus, ventral, c. aedeagus, left lateral, d. stylus, left lateral, e. anal tube, left lateral, f. anal tube, dorsal.



Figure 14. *Flatoidinus spec. 1* ♀, a. lateral, b. dorsal, Bonaire.



Figure 15. *Flatoidinus* aedeagus, a-b. *Flatoidinus spec. 1* ♂, Bonaire, c-d. *Flatoidinus spec. 2* ♂, Curaçao, a., c. aedeagus, left lateral, b., d. aedeagus, ventral.



Figure 16. *Flatoidinus spec. 2* ♂, Curaçao, a. lateral, b. dorsal.

described taxa for which terminalia descriptions are available mainly in shape of the terminalia (fig. 15a-b).

Biology The species seems to be polyphagous and is collected on Bonaire on *Antirhea acutata* (= *Stenostomum acutatum*), *Avicennia*, *Batis*, *Bontia*, *Conocarpus* and *Suriana*.

Remarks *Flatoidinus* spec. 1 is probably an undescribed species, although it could also be one of the *Flatoidinus* species described from South America for which good descriptions are lacking. There are many obscure species in Neotropical Flatidae and no recent taxonomic work has been done on this group.

Flatoidinus spec. 2

(fig. 12c, 15c-d, 16)

Distribution Known from numerous records on Curaçao and few records from Aruba. A series of specimens from Bonaire (17.XII.1957) is considered to be wrongly labelled and the species is not considered to occur on Bonaire. Records of *Flatoidinus* species on citizen science portals are not included, due to the lack of distinct external differences between *Flatoidinus* spec. 1 and *Flatoidinus* spec. 2.

Identification This taxon differs from the other species from the Dutch Caribbean and all other described taxa for which descriptions of the terminalia are available, mainly in shape of the male terminalia (see fig. 15c-d).

Biology On Aruba and Curaçao the species was collected on *Acaciella villosa*, *Batis*, *Caesalpinia coriaria*, *Erithalis*, *Prosopis* and *Vachellia tortuosa*. The species seems to be polyphagous, but it is possible that the nymphs are restricted to a limited number of host-plants.

Remarks Like the previous species, *Flatoidinus* spec. 1, this taxon is probably undescribed.

Ilesia anguillana Fennah, 1942

(fig. 12d-e, 17-18)

Distribution This species was described from Anguilla, and has also been recorded from Nevis (Fennah 1942b). The species is common on the islands Saba, Sint Eustatius and Sint Maarten. On all three islands, it was recorded multiple times (table 1). However, this species seems to be usually present only in low numbers, most records are based on only one specimen. An exception is formed by 24 specimens from Sint Eustatius, which is more than half of the total number of specimens collected in the Dutch Caribbean.

Identification The species can be identified with the original description (Fennah 1942b). Compared with Fennah's drawings, the specimens from the Dutch Caribbean have a longer anteriorly directed spine on the aedeagus, which should be considered a variation (compare fig. 18c with fig. 1 in Fennah (1942b).

Biology On Anguilla, this species was collected on *Coccoloba uvifera*. On Sint Eustatius, the species was found by R.H. Cobben on *Solanum*

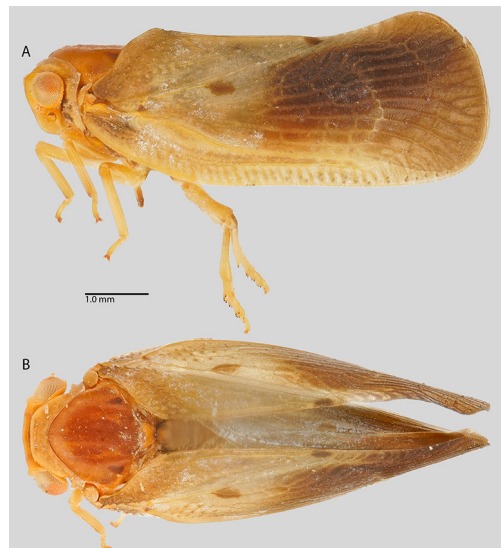


Figure 17. *Ilesia anguillana* ♂, Sint Eustatius, a. lateral, b. dorsal.



Figure 18. *Ilesia anguilla* ♂, terminalia, a. aedeagus, dorsal, b. aedeagus, ventral, c. aedeagus, left lateral, d. stylus, left lateral, e. anal tube, left lateral, f. anal tube, dorsal.

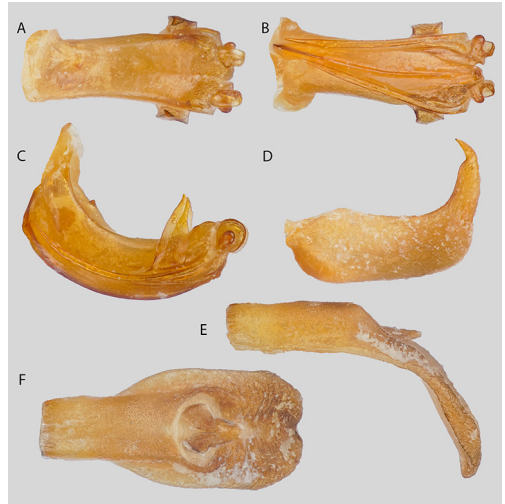


Figure 20. *Melormenis basalis* ♂, terminalia, Sint Eustatius, a. aedeagus, dorsal, b. aedeagus, ventral, c. aedeagus, left lateral, d. stylus, left lateral, e. anal tube, left lateral, f. anal tube, dorsal.

bahamense (= *Solanum racemosum*) and on Saba it was collected on sweet potato (*Ipomoea batatas*).

Melormenis basalis (Walker, 1851)

(fig. 12f, 19-20)

Distribution A widespread species in the Caribbean (Bourgoin 2024). This species has been found on Sint Eustatius and Sint Maarten and seems to be quite common on both islands (table 1), but it appears to be absent from Saba. The species is also found on the French part of Saint Martin and these records are included in the dataset.

Identification This species can be identified with Caldwell & Martorell (1951) (as *Melormenis antillarum*). According to Fennah (1965), specimens from Puerto Rico, drawn by Caldwell & Martorell (1951), differ from specimens from Saint Kitts & Nevis and Anguilla in details of the aedeagus. Figure 20 supports an easy and reliable identification.

Biology The species appears to be polyphagous, in the Dutch Caribbean it is recorded from



Figure 19. *Melormenis basalis* ♂, a. lateral, b. dorsal, Sint Eustatius.

Jatropha gossypifolia and Solanaceae. Fennah (1965) recorded the species from *Acacia* spec. and *Coccoloba uvifera*. In Florida, the species is recorded from many more plant species, representing 20 plant families (Halbert 2014).

Remarks Yokoyama (2013) reported *Metcalfa pruinosa* (Say, 1830) from Sint Maarten. However, based on the accompanying photo, this is *Melormenis basalis*. Another photo by M. Yokoyama from Sint Eustatius was placed on the website Dutchcaribbeanspecies.org as *Metcalfa pruinosa*, this photo does however also show a *Melormenis basalis* specimen. *Metcalfa pruinosa* does not occur in the Dutch Caribbean.

Petrusa epilepsis (Kirkaldy, 1906)

(fig. 12g, 21-23)

Distribution This is one of the most widespread Flatidae species in the Caribbean. An overview of the distribution is given by Bahder et al. (2018). The species is very common on the islands Saba, Sint Eustatius and Sint Maarten. On all three islands, it has been collected multiple times (table 1). The species is also found on the French part of Saint Martin, these records are included in the dataset.

Identification The species can be identified with Caldwell & Martorell (1951) (as *Petrusa margi-*



Figure 21. *Petrusa epilepsis* ♂, dark form, Sint Eustatius, a. lateral, b. dorsal.



Figure 22. *Petrusa epilepsis* ♂, light form, Saba, a. lateral, b. dorsal.



Figure 23. *Petrusa epilepsis* ♂, terminalia, Sint Eustatius, a. aedeagus, dorsal, b. aedeagus, ventral, c. aedeagus, left lateral, d. stylus, left lateral, e. anal tube, left lateral, f. anal tube, dorsal.

nata) and Fennah (1941) (as *Ormenis marginata*). The shape of the dorsal appendage of the aedeagus is variable. The colouration is also variable, the dark and light colour morphs are depicted (fig. 21-22). Both colour morphs occur together. **Biology** An overview of the host plants is given by Bahder et al. (2018).

Remarks Yokoyama (2010) reported *Ormenaria rufifascia* (Walker, 1851) from Sint Maarten. Based on the accompanying photo, this record concerns *Petrusa epilepsis*. No other records of *Ormenaria rufifascia* from the Dutch Caribbean are available, indicating that this species does not occur on these islands.

Family Kinnaridae

Prosotropis marmorata s.l. Fennah, 1942 (fig. 24-25)

Distribution The species *Prosotropis marmorata* Fennah, 1942 was described from Montserrat (Fennah 1942a). Later, Fennah (1948) described two subspecies, *P. m. antiguana* Fennah, 1948 from Antigua and *P. m. sancti-christopheri* Fennah, 1948 from Saint Kitts. From the Dutch Caribbean, the species has only been recorded from Saba where it was found on five different locations (table 1).

Identification The species can be identified with the original description (Fennah 1942a). Figures 24-25 show the exact colouration and morphology of the male terminalia of the populations found on Saba.

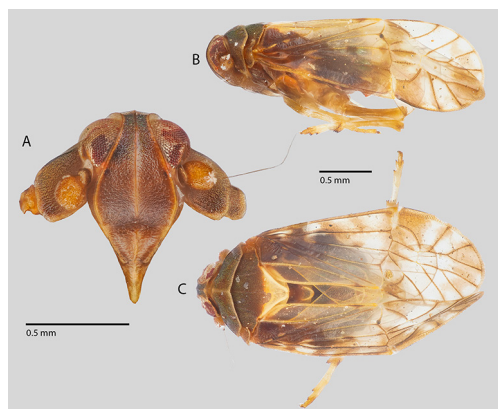


Figure 24. *Prosotropis marmorata* s.l. ♂, Saba, a. head, frontal, b. lateral, c. dorsal.

Biology No information about the biology of this species is available.

Remarks While *P. m. antiguana* differs from the other subspecies in colouration of the forewings, *P. m. marmorata* and *P. m. sancti-christopheri* are externally nearly identical and study of the male genitalia is needed for verification. The specimens from Saba differ slightly in colouration and structure of the male terminalia, compared to all described subspecies. We consider those slight differences insignificant and refrain from Fennah's method to put a different (subspecies) name on each slightly different form. Further study on additional material from various islands might change this opinion.

Quilessa martinensis De Haas & Bartlett, 2024 (fig. 26)

Distribution This taxon has only been found on Sint Maarten, where a series was collected at the Devils Swamp near Simpson Bay.

Remarks This taxon differs from other taxa in the forewings that lack any coloration and the shape of the male terminalia (De Haas & Bartlett 2024).

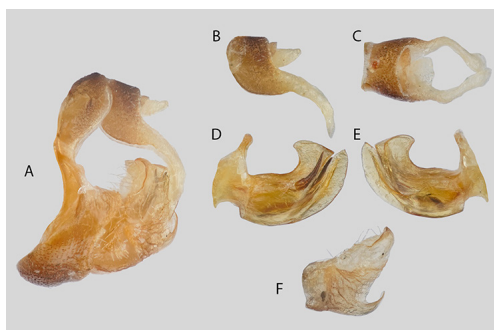


Figure 25. *Prosotropis marmorata* s.l. ♂, terminalia, Saba, a. terminalia, lateral, b. anal tube lateral, c. anal tube, dorsal, d. aedeagus left lateral, e. aedeagus right lateral, f. stylus.

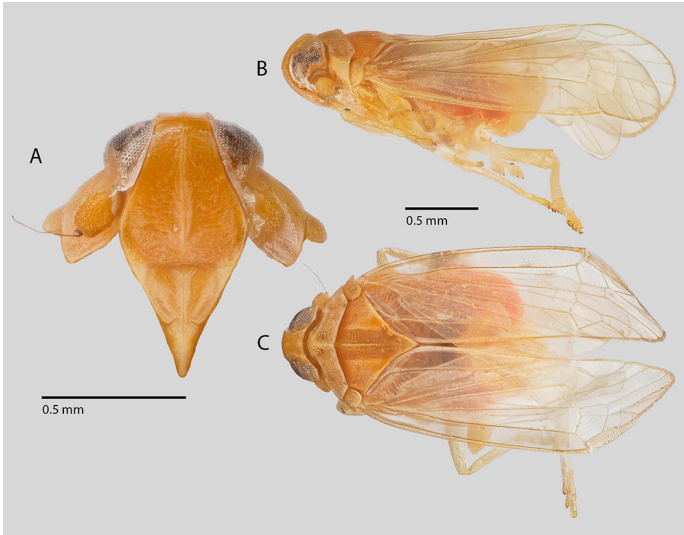


Figure 26. *Quilessa martinensis* ♂, Sint Maarten, a. head, frontal, b. lateral, c. dorsal.

DISCUSSION

Up to now only ten true hopper species were known from the Dutch Caribbean belonging to the families Cercopidae (1 species), Cicadidae (1), Kinnaridae (1), Delphacidae (2), Flatidae (2) and Cicadellidae (3). The records of *Aeneolamia reducta* (Cercopidae), *Metcalfa pruinosa* and *Ormenaria rufifascia* (Flatidae) were based on misidentifications. This study adds 11 species to the true hopper fauna of the Dutch Caribbean. At this moment 18 species are recorded for the Dutch Caribbean: Cercopidae (1), Cicadidae (2), Delphacidae (2), Acanaloniidae (2), Flatidae (6), Kinnaridae (2) and Cicadellidae (3). Two Flatidae could not be identified up to species level and (might) concern new species. Those will be subject of future publications.

The true hopper fauna known at this moment from Aruba, Bonaire and Curaçao shows no overlap with that of Saba, Sint Eustatius and Sint Maarten (table 1). Twelve species, out of 18 in total, are found on only one island. With the exception of *Chalumalna martinensis* all species/island records are based on collected specimens. For six species/island combinations, additional records were found on citizen science platforms.

In the case of *Chalumalna martinensis*, only a citizen science record was available for this study.

We don't consider *Aeneolamia reducta* and *Flatoidinus* spec. 2 to be present on Bonaire. Both species have been found in the RMNH collection with label data from Bonaire. However, in both cases the species would have only been collected once on light on 17.XII.1957. The lack of more collected material of these species from Bonaire, which are both relatively (or very) common on Aruba and/or Curaçao strongly suggests that the specimens with label data from Bonaire have been wrongly labelled. This is supported by the fact that the true hopper fauna of Bonaire is intensively studied in 2022 and these species have not been found.

Many more Auchenorrhyncha species in the Dutch Caribbean are awaiting publication. In the personal collections of the authors and the RMNH collection, 100+ species are present (pers. obs. of first author), significantly more than currently published.

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SAMENVATTING

Inleiding tot de cicadenfauna van de Nederlandse Cariben, met de toevoeging van 11 soorten (Hemiptera: Auchenorrhyncha)

Elf cicadensoorten worden voor het eerst van Caribisch Nederland gemeld. In totaal zijn op dit moment achttien cicadensoorten van Caribisch Nederland bekend: Cercopidae (1), Cicadidae (2), Delphacidae (2), Acanaloniidae (2), Flatidae (6), Kinnaridae (2) en Cicadellidae (3). Twee Flatidae konden niet tot op soortniveau gedetermineerd worden en betreffen (mogelijk) onbeschreven soorten. Verspreidingsgegevens en ecologische data worden per soort besproken.

Ter ondersteuning van een goede determinatie worden van de nieuw gemelde cicadensoorten habitusfoto's gepresenteerd, plus van de meeste soorten details van de mannelijke genitalia.

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