

# Lace bugs of Namibia (Heteroptera, Tingoidea, Tingidae)<sup>1</sup>

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**Abstract:** This paper provides locality records and host plant data for 85 species in 32 genera of Namibian Tingidae. Three new species are described: *Ammianus ernsti* nov.sp., *Cysteochila bassoni* nov.sp., and *Cysteochila rusti* nov.sp. Forty-three species are recorded for the first time from Namibia. A key to the genera found in Namibia is presented.

**Key words:** Afrotropical Tingidae, distribution, key, Namibia.

## Introduction

More than 2000 species of lace bugs in approximately 270 genera are known worldwide. One third of all known lace bugs occurs in Africa, which amounts to more than 600 species in 121 genera (GÖLLNER-SCHIEDING 2004a). Forty-two species of Tingidae have been recorded previously from Namibia and the present study increases this number to 85 species in 32 genera.

Tingidae are mainly distributed in the tropical and temperate zones. All species are of small size. Their total length is usually between two and four millimetres, but a few species measure less than two or up to eight millimetres. The adults of lace bugs have wings with a network of veins and their English common name refers to this lace-like surface texture of the fore wings. The pronotum is sculptured with ornamentations, which are very elaborate in some species, and then may give the insects a very bizarre appearance. The slowly moving insects are phytophagous in all developmental stages and they usually feed on the underside of leaves. When lace bugs infest native plants, this infestation remains frequently without economic consequences. However, on ornamental plants or cultivated crops they may achieve pest status (NEAL & SCHAEFER 2000). Most Tingidae are either adapted to a single host plant or they are

oligophagous on a group of related plants, but some species are polyphagous and feed on species of several different plant families.

The lion's share of Tingidae, more than 95 % of the described species, belongs to the subfamily Tinginae. Many genera of Tinginae remain poorly defined and several are almost certainly not monophyletic. LIS (1999) and GUILBERT (2001, 2004) discussed two contradicting views of the family and subfamily level classification of Tingoidea. One of the main differences between these two classifications is the position and treatment of *Cantacader* and some related species groups as either a separate family and the sister group of Tingidae (LIS 1999) or as subfamily nested within Tingidae (GUILBERT 2001, 2004). Here we include the three Namibian species of *Cantacader* as Cantacaderinae within Tingidae.

## Methods and depository of material

The material is deposited in the collection of Heteroptera of the "Museum für Naturkunde Berlin" and in the National Insect Collection at the National Museum of Namibia in Windhoek. We collected during several field trips to Namibia since 1989, some of which were conducted in the framework of the research project BIOTA-Africa.

<sup>1</sup>In dedication to Ernst Heiss on his 70<sup>th</sup> birthday.



**Fig. 1:** *Cantacader afzelii* (head and pronotum, total body length 5 mm).

“BIOTA” is the abbreviation for “Biodiversity Monitoring Transect Analysis in Africa”. The main objective of this project is to document and monitor biodiversity in time and space (SCHMIEDEL & JÜRGENS 2005). The data based on the collected specimens and host plant records are supplemented with previously published data from the literature. If no other references are mentioned, data for general distribution and host plants are based on DRAKE & RUHOFF (1965) and GÖLLNER-SCHIEDING (2004a, 2004b, 2004c).

Detailed information for more than 100 collecting sites (Map 1) is given in the appendix. We use the current names for the provinces in South Africa, also in data derived from the literature. If we do not provide the current name, this indicates that we did not trace the exact place.

The holotypes of the new species are deposited in the National Insect Collection at the National Museum in Windhoek. Paratypes are placed in the following museums: Museum für Naturkunde Berlin, Germany; National Museum Windhoek,

Namibia; Plant Protection Research Institute Pretoria, and Museum Cape Town, South Africa. Voucher specimens of other Tingidae that were collected in Namibia are deposited in the National Insect Collection Windhoek, National Museum in Windhoek.

## Results

### Cantacaderinae STÅL 1873

#### Genus *Cantacader*

#### AMYOT & SERVILLE 1843

The 34 known species of *Cantacader* are restricted to the Eastern Hemisphere. They are known from Saudi-Arabia and Yemen to Africa, Asia and Australia. Three species of 18 Afrotropical *Cantacader* are found in Namibia. Host plants of the African species are unknown.

#### *Cantacader afzelii* STÅL 1873 (Fig. 1)

Distribution: Angola, Botswana, Burkina Faso, Central African Republic, Cameroon, Chad, Comoros, Congo, Dem. Rep. Congo, Ethiopia, Gabon, Gambia, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Madagascar, Mauritius, Mozambique, Namibia, Nigeria, Réunion, Sierra Leone, Tanzania, Senegal, Somalia, South Africa, Sudan, Zambia.

Namibia: Katima-Mulilo III 1992 (at light).

Host: unknown.

#### *Cantacader attenuatus* DISTANT 1902 (Fig. 2)

Distribution: Namibia, South Africa (Western Cape Province).

Namibia: Popa Falls II 1992 (at light).

Host: unknown.

#### *Cantacader tenuipes* STÅL 1866

Distribution: Angola, Botswana, Burkina Faso, Cameroon, Congo, Chad, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Namibia, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Zambia, but so far not collected in South Africa. Occurs also in Saudi-Arabia and Yemen.

Namibia: Mile 46 III 2002 (at light), Popa Falls II 1992 (sieved at Okavango banks), Mahango Game Reserve XI 1993 (at light), and “S. W. Africa” (LINNAVUORI 1977).

Host: unknown.



**Fig. 2:** *Cantacader tenuipes* (4.7 mm).

Tinginae LAPORTE 1832

Genus *Afrotingis* DRAKE & HILL 1964

*Afrotingis* contains three African species that are known only from few records. All three species may occur in Namibia, but only the two species listed below are documented so far. The third species, *Afrotingis eumenes* DRAKE & HILL 1964, was collected in Botswana, Ethiopia, South Africa, Sudan, and Yemen so far. It was found on the shrubs *Grewia mollis* JUSS. and *Grewia tenax* (FORSSK.) FIORI (Malvaceae), the latter also occurs in Namibia (CRAVEN 1999).

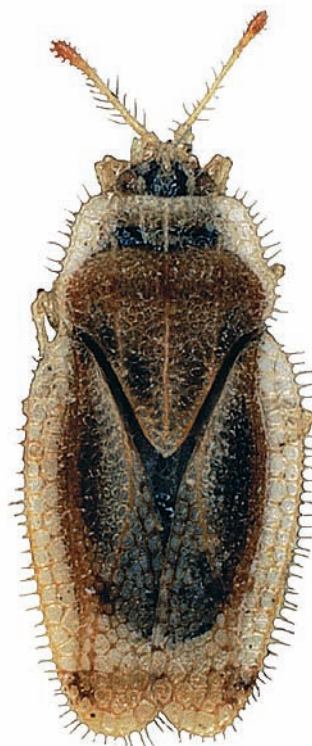
*Afrotingis elachys*  
(DRAKE & RUHOFF 1961)

(*Leptopharsa elachys* DRAKE & RUHOFF 1961)  
Distribution: Botswana, Namibia, South Africa.  
Namibia: Windhoek IX 1920 (type locality).  
Host: *Pappea capensis* ECKL. & ZEYH (Sapindaceae). This plant is widespread in southern Africa as well as in eastern and southern tropical Africa (COATES PALGRAVE 2002).

*Afrotingis mboloko* LINNAVUORI 1977  
(Fig. 3)

Distribution: Burkina Faso, Namibia, Sudan, Zambia.

Namibia: Eden III 2005, Otjiamongombe V 2003, Okaparakaha III 2004, Toggekry V 2003,



**Fig. 3:** *Afrotingis mboloko* (1.4 mm).

Varianto III 2005, Windhoek III 2004.

Host: *Grewia flava* DC. (Malvaceae), a plant with southern African distribution.

Genus *Agramma* STEPHENS 1829

(*Serenthia* SPINOLA 1837)

*Agramma* is distributed in Asia, Africa, and Europe. Forty-four Afrotropical species belong to the genus, two were collected in Namibia.

*Agramma maynei*  
(SCHOUTEDEN 1916) (Fig. 4)

Distribution: Angola, Dem. Rep. Congo, Kenya, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia.

Namibia: Ameib Farm II 1972 (DUARTE RODRIGUES 1989), Okahandja XII 1927 (DUARTE RODRIGUES 1982b), Daan Viljoen Game Reserve III 1994, Katima-Mulilo III 1992.

Host: unknown.

*Agramma peringueyi* (DISTANT 1904)

(*Serenthia karisimbiensis* SCHOUTEDEN 1953)

Distribution: Kenya, Madagascar, Namibia, Rwanda, South Africa (Western and Northern Cape Province).

Namibia: Oranjemund, Long Island, IX 1994.

Host: unknown.



**Fig. 4:** *Agramma maynei* (2.3 mm).





**Fig. 5:** *Ammianus alaticollis* (4.5 mm).



**Fig. 6:** *Ammianus echo* (4.5 mm).



**Fig. 7:** *Ammianus ernsti* nov.sp. (male, 5.3 mm).



**Fig. 8:** *Ammianus junodi* (3.8 mm).

#### Genus *Ammianus* DISTANT 1903

(*Phyllontocheila* STÅL 1855, *Kitoko* SCHOUTEDEN 1953, *Monanthia* [*Phyllontochila*] STÅL 1866)

Thirty-two species are distributed in the Afrotropical region, several of them only in Madagascar, five are known from Namibia. *Ammianus* species also live in Asia.

#### *Ammianus alaticollis* (STÅL 1855) (Fig. 5)

Distribution: Ethiopia, Kenya, Mozambique, Namibia, South Africa (KwaZulu-Natal, Northern Province), Tanzania, Zimbabwe.

Namibia: Buffalo Base IV 1990, Mahango Game Reserve II 1992 / II 1998, Mutompo III 2003, Popa Falls III 1992, Richthofen 126 VIII 1978 (pitfall traps), Rooiwal IV 1989.

Host: unknown.

#### *Ammianus echo* LINNAVUORI 1977 (Fig. 6)

Distribution: Namibia, Sudan, South Africa (KwaZulu-Natal).

Namibia: Popa Falls III 1992.

Host: unknown.

#### *Ammianus ernsti* nov.sp. (Fig. 7)

Distribution: Namibia.

Namibia: Osona III-IV 1989, Windhoek III-IV 1989 / IX 1991 / III 2005.

Host: *Kleinia longiflora* DC. (Asteraceae) (Fig. 49). The host plant is found in arid parts of southern Africa.

#### *Ammianus junodi* (DISTANT 1904) (Fig. 8)

Distribution: Botswana, Cameroon, Dem. Rep. Congo, Kenya, Malawi, Mozambique, Namibia, Nigeria, South Africa (KwaZulu-Natal, Northern Province), Sudan, Tanzania, Togo, Uganda, Zambia.

Namibia: Andara VIII 1971 (DUARTE RODRIGUES 1982e), Gelukkie III 1992, Katima-Mulilo III 1992 (at light), Van Bach Damm X 2002, Windhoek III 1989.

Host: unknown.

#### *Ammianus spinosus* (SCHOUTEDEN 1923)

Distribution: Benin, Cameroon, Dem. Rep. Congo, Ghana, Guinea, Ivory Coast, Kenya, Namibia, Nigeria, South Africa (Mpumalanga), Tanzania, Uganda.

Namibia: Karakuvisa II 1958 (DUARTE RODRIGUES 1987b).

Host: unknown.

#### Genus *Angolusa* DRAKE 1958

Three African species belong to the genus and are known from Angola, Dem. Rep. Congo, Namibia. Only one is known from Namibia.

#### *Angolusa machadoi* DRAKE 1958 (Fig. 9)

Distribution: Angola, Namibia.

Namibia: North of Kaudom Game Reserve III 1992.

Host: unknown.



**Fig. 9:** *Angolusa machadoi* (2.9 mm).



**Fig. 10:** *Bako dieides* (3.2 mm).



**Fig. 11:** *Bako lebruni* (2.3 mm).

### Genus *Bako* SCHOUTEDEN 1923

(*Galeotingis* DRAKE 1947)

Species of the genus *Bako* are found in Africa as well as in the Oriental region. Seven species are known from the Afrotropical region, distributed especially in southern Africa, four are known from Namibia.

#### *Bako dieides* DRAKE & RUHOFF 1961 (Fig. 10)

Distribution: Namibia, South Africa (Eastern and Western Cape Provinces).

Namibia: Manywa River IV 1990 (pitfall traps), Regenstein XII 1973.

Host: *Salsola* L. (Chenopodiaceae) (DUARTE RODRIGUES 1990).

#### *Bako distinctus* DUARTE RODRIGUES 1982

Distribution: Namibia.

Namibia: Swakopmund I 1972 (type locality).

Host: unknown.

#### *Bako lebruni* SCHOUTEDEN 1923 (Fig. 11)

(*Galeotingis usumburana* DRAKE 1947)

Distribution: Botswana, Dem. Rep. Congo, Mozambique, Namibia, Nigeria, South Africa (KwaZulu-Natal, Cape Provinces).

Namibia: Okavango River, Susuwe, IX-X 1998 (Malaise trap).

Host: unknown.

#### *Bako lepidus* DUARTE RODRIGUES 1982 (Fig. 12)

Distribution: Namibia, South Africa (Northern Cape Province).

Namibia: Gunsbewys IV 1995, Regenstein XII 1973.

Host: "Salzstrauch" (as written on the label of the type specimen), this local name is applied for *Chenopodium olukondae* (MURR) MURR.

### Genus *Bunia* SCHOUTEDEN 1955

Five species belong to this African genus, one species is known from Namibia.

#### *Bunia milleri* (DRAKE 1954) (Fig. 13)

Distribution: Dem. Rep. Congo, Madagascar, Namibia, Nigeria, South Africa (KwaZulu-Natal), Zimbabwe.

Namibia: Tsumeb III 2003.

Host: "Polony tree" (record after the original description by DRAKE 1954). Polony tree is an unusual name for sausage tree, *Kigelia africana* BENTH. (Bignoniaceae).

### Genus *Ceratinoderma* STÅL 1873

Three species belong to this African genus; two are found in South Africa, one is known from Congo and Rwanda. One of the three species also occurs in Namibia. No information is available on host plants.



**Fig. 12:** *Bako lepidus* (2.4 mm).





**Fig. 13:** *Bunia milleri* (2.2 mm).

***Ceratinoderma fornicata*  
STÅL 1873 (Fig. 14a, b)**

Distribution: South Africa (Western Cape Province), Namibia.

Namibia: Ai-Ais IV 1995.

Host: unknown.

**Genus *Cochlochila* STÅL 1873**

(*Monanthia* [*Cochlochila*] STÅL 1873, *Cochlochila* HORVÁTH 1910, *Cochlochila* [*Cochlochila*] DUARTE RODRIGUES 1982, *Cochlochila* [*Kibongoto*] DUARTE RODRIGUES 1982)

Eighteen species are distributed in the Afrotropical region, several species of the genus are known only from South Africa. Six species are found in Namibia. Species of *Cochlochila* are distributed outside of Africa as well, e.g. in Saudi-Arabia and in the Oriental region.

***Cochlochila ampliata*  
DUARTE RODRIGUES 1982**

Distribution: Namibia.

Namibia: Aus XI 1929 (type locality), Okaparakaha III 2006.

Host: unknown.

***Cochlochila austroafricana* DUARTE  
RODRIGUES 1982 (Fig. 15a, b)**

Distribution: Namibia, South Africa (Western Cape Province, Northern Cape Province).

Namibia: Osona III/IV 1989, Rushoek III 2004, Seeis (16 km ESE of) III 1976 (DUARTE RODRIGUES 1982f).

Host: unknown.

***Cochlochila bullita* (STÅL 1873)**

(*Tingis globulifera* WALKER 1873, *Monanthia mitrata* DISTANT 1904)

Distribution: Botswana, Dem. Rep. Congo, Eritrea, Ethiopia, Kenya, Malawi, Mozambique, Namibia, South Africa, Sudan, Tanzania, Uganda, also Yemen and in the Oriental region (China, India, Java, Philippines, Sri Lanka).

Namibia: Abachaus III 1950, Ameib II 1975 (beaten), Ohopoho (44 km NW of) II 1975 (grassnetting) (all data DUARTE RODRIGUES 1987b), Katima-Mulilo III 1992 / III 1998, Kaudom Game Reserve II 1992, Klein Dobe II 1992, Mahango Game Reserve II 1992, Nibuamis 37 II 1975 (Malaise trap) (DUARTE RODRIGUES 1982e), Okaparakaha III 2001 / V 2003 / III 2004 / III 2006, Omandumba III 2005, Omaruru (HESSE 1925), Toggekry V 2003, Osona III 1989, Paradies III 2004 / III 2006, Popa Falls III 1992 / I 1993 / III 1994, Rooiwal IV 1989, Rushoek III 2004, Seeis (16 km ESE of) III 1976 (DUARTE RODRIGUES 1982f), Windhoek III 1989 / III 2004 / III 2006.

Host: *Carthamus tinctorius* L. (Asteraceae) (Safflower, not native in Africa), and on Lamiaceae: *Ocimum americanum* L., *O. gratissimum* L. (syn. *urticifolium* ROTH), *Rosmarinus officinalis* L., *Salvia coccinea* ETL.

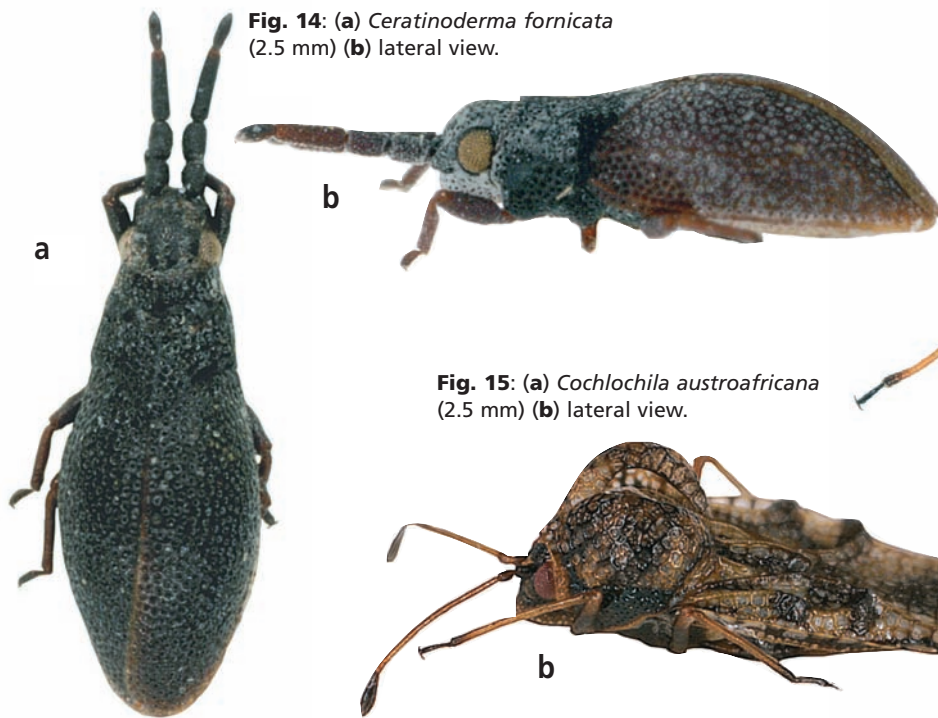
***Cochlochila dispar*  
DUARTE RODRIGUES 1982**

Distribution: Namibia, South Africa (Northern and Western Cape Province).

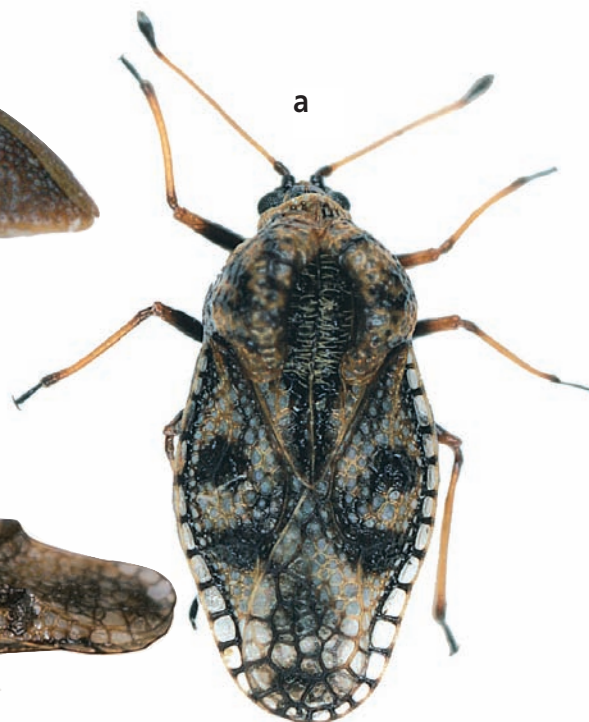
Namibia: Okaparakaha III 2004.

Host: unknown.

**Fig. 14:** (a) *Ceratinoderma fornicata* (2.5 mm) (b) lateral view.



**Fig. 15:** (a) *Cochlochila austroafricana* (2.5 mm) (b) lateral view.





**Fig. 16:** *Compseuta holana* (3.0 mm).



**Fig. 17:** (a) *Cysteochoila bassoni* nov.sp., male paratype (3.1 mm)  
(b) female (3.3 mm).



***Cochlochila nemesiae* DUARTE  
RODRIGUES 1982**

Distribution: Namibia, South Africa (Western Cape Province).

Namibia: Abachaus (DUARTE RODRIGUES 1987b).

Host: *Nemesia fruticans* (THUNB.) BENTH. (Scrophulariaceae), a plant species restricted to southern Africa. DUARTE RODRIGUES (1982f) mentioned *Nemesia capensis* (SPRENG.) KUNTZE as host, which is synonym with *N. fruticans*.

***Cochlochila theroni*  
DUARTE RODRIGUES 1982**

Distribution: Namibia, South Africa (Western Cape Province).

Namibia: Okaparakaha V 2003 / III 2004 / III 2006.

Host: *Elytropappus rhinocerotis* (L. F.) LESS. ("Rhenosterbos", only in South Africa), in Namibia on *Seriphium plumosum* L. (syn. *Stoebe vulgaris* LEVYNS) (both species are Asteraceae).

***Cochlochila zetana* DRAKE 1954**

Distribution: Namibia, South Africa (Western Cape Province, Free State (formerly Orange Free State)).

Namibia: Okahandja II 1972 (general sweeping), Swakop R[iver] 3 mls S Okahandja IV 1972 (DUARTE RODRIGUES 1982f).

Host: *Elytropappus rhinocerotis* (L. F.) LESS (Asteraceae) (in South Africa).

**Genus *Compseuta* Stål 1873**

(*Monanthia* [*Compseuta*] STÅL 1873)

Most species of *Compseuta* are of Afrotropical distribution; 15 species are known to occur in tropical Africa, where they are mainly found in the central part of the continent. Only one species, *Compseuta montandoni* DISTANT, is also known from North Africa, another one from Australia, southern China, India, and Java. Only one species occurs in Namibia.

***Compseuta holana* DRAKE 1948**

(Fig. 16)

Distribution: Botswana, Dem. Rep. Congo, Ethiopia, Namibia, South Africa (KwaZulu-Natal, Northern Province), Tanzania, Uganda, Zambia.

Namibia: Hurisib IV 1989, Kaudom Game Reserve II 1992, Popa Falls III 1994.

Host: *Malva* L. sp. (Malvaceae).

**Genus *Cysteochoila* STÅL 1873**

*Cysteochoila* is a species-rich Old World genus. Seventy-one African species are known; some of them are widely distributed. Nine species are restricted to Madagascar, 13 occur in Namibia.





**Fig. 18:** *Cysteochila bassoni* nov.sp. on *Cyphostemma juttiae* (Otavi Mountains, February 2004).



**Fig. 19:** *Cysteochila endeca* (2.8 mm).



**Fig. 20:** *Cysteochila nervosana* (3.3 mm).

***Cysteochila bassoni* nov.sp.  
(Figs 17a, b, 18)**

Distribution: Namibia.

Namibia: Varianto II 2004 / III 2005.

Host: *Cyphostemma juttiae* (DINTER & GILG) DESC. (Vitaceae), a rare endemic plant in Namibia (CRAVEN 1999).

***Cysteochila bredoi* SCHOUTEDEN 1953**

Distribution: Botswana, Dem. Rep. Congo, Namibia, Zimbabwe.

Namibia: Abachaus X 1953 (DUARTE RODRIGUES 1987b).

Host: unknown.

***Cysteochila endeca* DRAKE 1954  
(Fig. 19)**

Distribution: Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Dem. Rep. Congo, Gambia, Ghana, Ivory Coast, Mali, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, Uganda, Zambia, Zimbabwe.

Namibia: Hurisib X 1991, Mutompo III 2003, Otjua X 1991.

Host: *Cassia* L. sp. (Fabaceae), *Gardenia aqualla* STAPF & HUTCHINSON (Rubiaceae), *Lansea fulva* ENGL. (Anacardiaceae), *Rhizophora mangle* L. (Rhizophoraceae), *Tamarindus indica* L. (Fabaceae). Species of *Cassia* L., *Gardenia* ELLIS, and *Lansea* A. RICH. are native in Namibia.

***Cysteochila impressa* HORVÁTH 1910**

Distribution: Central African Republic, Comoros, Dem. Rep. Congo, Ethiopia, Kenya, Madagascar, Malawi, Namibia, Nigeria, Rwanda, Senegal, South Africa (North West Province), Sudan, Tanzania, Uganda.

Namibia: Gelukkie IV 1990.

Host: *Carapa grandiflora* SPRAGUE (Meliaceae), *Cynometra alexandri* C.H. WRIGHT (Fabaceae, also placed in Caesalpiniaceae), in South Africa on *Olea europaea* L. subsp. *cuspidata* (WALL. ex G. DON) CIF (Oleaceae) (mentioned as *Olea africana* MILL. by DUARTE RODRIGUES 1982c) and *Chrysophyllum* L. sp. (Sapotaceae) (DUARTE RODRIGUES 1982c). These plant genera are not found in Namibia, except *Olea* L. sp.

***Cysteochila lineata*  
DUARTE RODRIGUES 1982**

Distribution: Namibia, South Africa (Western Cape Province).

Namibia: Namibia (GÖLLNER-SCHIEDING 2004a), we could not trace the exact source and location.

Host: *Olea capensis* L. (Oleaceae). This plant species is not mentioned by CRAVEN (1999) for Namibia.



***Cysteochila natalensis* (STÅL 1855)**

Distribution: Dem. Rep. Congo, Ethiopia, Kenya, Namibia, Rwanda, South Africa (KwaZulu-Natal), Tanzania, Uganda, Zimbabwe.

Namibia: Mahango Game Reserve III 1994, Popa Falls III 1992.

Host: *Dalbergia armata* E. MEY. (Fabaceae) (not known for Namibia) and *Cyphostemma cirrhosum* (THUNB.) DESC. ex WILD & R.B. DRUMM. (Vitaceae) (*Cyptersremma sic!*) (DUARTE RODRIGUES 1982c).

***Cysteochila nervosana* DRAKE 1956 (Fig. 20)**

Distribution: Namibia, South Africa (Western Cape Province, KwaZulu-Natal).

Namibia: Windhoek XI 1991.

Host: unknown.

***Cysteochila otaviana* DRAKE 1954**

Distribution: Namibia, Ivory Coast.

Namibia: Otavi VI 1920 (type locality), Tsumeb III 2003.

Host: unknown.

***Cysteochila rusti* nov.sp. (Fig. 21a, b)**

Distribution: Namibia.

Namibia: Omandumba III 2004 (type locality).

Host: *Cyphostemma currorii* (HOOK. f.) DESC. (Vitaceae), distributed in Namibia and southern Angola.

***Cysteochila senegalensis* (DRAKE 1954)**

Distribution: Chad, Guinea, Namibia, Senegal, Sudan.

Namibia: Katima-Mulilo III 1992.

Host: *Cordia sinensis* LAM. (syn. *Cordia rothii* ROEM. & SCHULT.) (Boraginaceae), *Tamarindus indica* L. (Fabaceae). Only the widely distributed *Cordia sinensis* belongs to the flora of Namibia.

***Cysteochila stricta* (BERGEVIN 1929)**

(*Cysteochila pelates* DRAKE 1963, *Cysteochila poecilia* DRAKE & RUHOFF 1961)

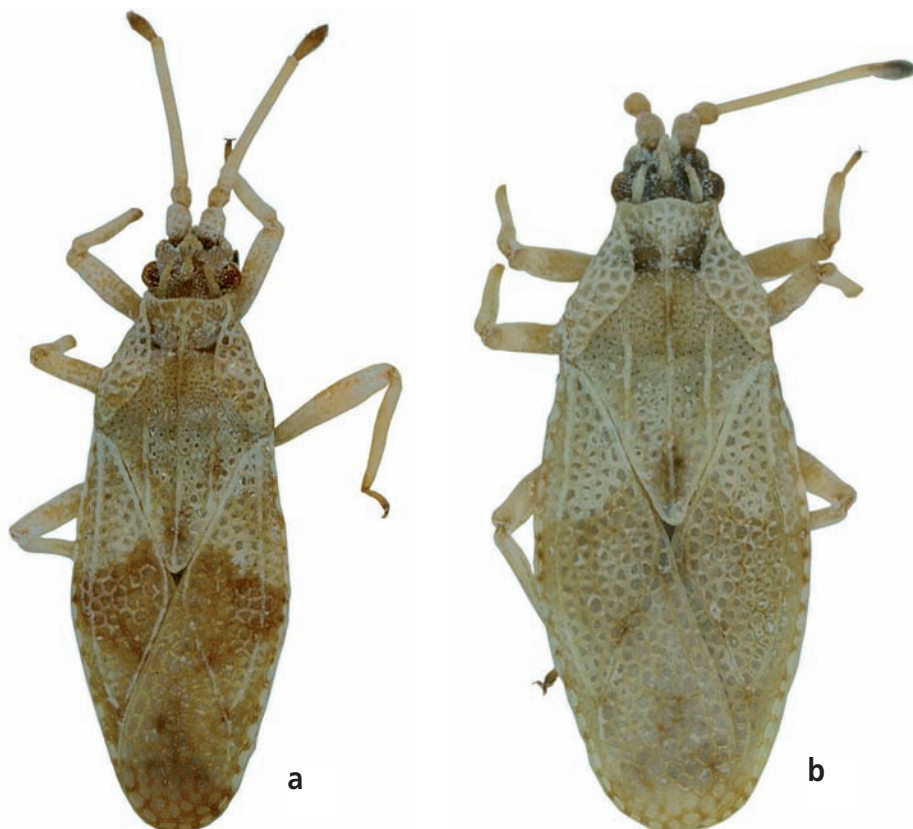
Distribution: Chad, Namibia, Niger, Nigeria, Senegal, Somalia, South Africa, Sudan, also found in Yemen and in Algeria, Israel, and Jordan.

Namibia: Abachaus XII 1949 (DUARTE RODRIGUES 1987b), Daan Viljoen Game Park VII 1974 (DUARTE RODRIGUES 1988), Iikango III 1994, Okaparakaha III 2001 / III 2002.

Host: *Acacia hebeclada* DC. (Eastern to South African distribution, including Namibia), host plants outside of southern Africa are *A. raddiana* SAVI and *A. seyal* DEL. (Fabaceae).

***Cysteochila tombeuri* SCHOUTEDEN 1923**

Distribution: Angola, Dem. Rep. Congo, Ethiopia, Kenya, Malawi, Mozambique, Namibia, South Africa, Tanzania, Uganda, Zimbabwe.



**Fig. 21: (a) *Cysteochila rusti* nov.sp., male paratype (2.8 mm) (b) female paratype (2.9 mm).**

Namibia: Abachaus VII 1959 (DUARTE RODRIGUES 1987b), Katima-Mulilo III 1992, Kaandom Game Reserve II 1992.

Host: *Bauhinia* L. sp. (Fabaceae), *Cissus* L. sp. (Vitaceae).

***Cysteochila transvaalensis* DUARTE RODRIGUES 1982**

Distribution: Namibia, South Africa (Limpopo (formerly Northern Transvaal)).

Namibia: Okaparakaha II 2005, Omandumba III 2004, Popa Falls III 1994, Windhoek IV 1989.

Host: unknown.

**Genus *Dictyla* STÅL 1874**

(*Monanthia* MAYR 1858, *Horvathula* SCHOUTEDEN 1957, *Octacysta* DRAKE & RUHOFF 1960)

Species of *Dictyla* are found in all major zoogeographic regions. Twenty-six species from Africa belong to the genus, seven are known from Namibia.

***Dictyla australis* DUARTE RODRIGUES 1987**

Distribution: Namibia, South Africa (Northern Province)

Namibia: Etosha National Park (Zebrapomp) V 1986, Kaoko Otavi III 1926 (type locality), Warmbad II 1925 (DUARTE RODRIGUES 1987a), Kamanjab (12 km W of) II 1975 (DUARTE RODRIGUES 1987b).

Host: unknown.



**Fig. 22:** *Dictyla flavipes* (2.6 mm).



**Fig. 23:** *Dictyla picturata* (3.5 mm).



**Fig. 24:** *Dictyla poecilla* (2.7 mm).

***Dictyla flavipes* (SIGNORET 1861) (Fig. 22)**

(*Cysteochila caffra* STÅL 1873, *Monanthia rwandae* SCHOUTEDEN 1953, *Dictyla flavipes* DRAKE & RUHOFF 1960)

Distribution: Angola, Comoros, Ethiopia, Madagascar, Malawi, Mozambique, Namibia, Rwanda, South Africa (Eastern Cape Province, KwaZulu-Natal), Sudan, Tanzania, Zambia, Zimbabwe.

Namibia: Epupa Falls II 1994, Messum XI 1998 (yellow pan traps) (GÖLLNER-SCHIEDING 2000), Ruacana (9 km W of) II 1994, Spitzkoppe IV 1998.

Host: *Cordia sinensis* LAM. (syn. *C. rothii* ROEM. & SCHULT.) (Boraginaceae), *Dalbergia armata* E. MEY (Fabaceae). *Dalbergia armata* does not occur in Namibia, but other species of *Dalbergia* as well as *Cordia sinensis* are known from this country. So far, we have no host records from Namibia, but several specimens of *D. flavipes* were found on *Strophantus amboensis* (SCHINZ) ENGL. & PAX (Apocynaceae) at Spitzkoppe in Namibia.

***Dictyla jacobsi* DUARTE RODRIGUES 1990**

Distribution: Namibia, South Africa (Northern Cape Province).

Namibia: Naukluft III 2003.

Host: *Berkheya* EHRH. (Asteraceae).

***Dictyla nodipennis* (HORVÁTH 1910)**

(*Monanthia zavattarii* MANCINI 1953)

Distribution: Dem. Rep. Congo, Ethiopia, Kenya, Namibia, Tanzania, Uganda.

Namibia: Mahango Game Reserve III 1992, Popa Falls III 1992 / III 1994.

Host: unknown.

***Dictyla picturata* (DISTANT 1902) (Fig. 23)**

Distribution: Namibia, South Africa (Western Cape Province, Free State, Northern Province).

Namibia: Ai-Ais II 1994, Stormberg VIII 1990.

Host: *Lobostemon argenteus* BUEK (Boraginaceae) in South Africa after DUARTE RODRIGUES (1982c). This plant genus is not mentioned for Namibia in CRAVEN (1999).

***Dictyla poecilla* DRAKE & HILL 1964 (Fig. 24)**

Distribution: Cameroon, Chad, Ethiopia, Kenya, Namibia, Niger, Nigeria, Sudan, also in Yemen.

Namibia: Abachaus XII 1949, III 1950 (DUARTE RODRIGUES 1987b), Ameib forest (sic!) I-II 1972 (DUARTE RODRIGUES 1988), Epupa Falls II 1994, Etosha National Park (Okaukuejo, Etosha Pan) XII 1974 (beating) (DUARTE RODRIGUES 1987b), Gunsbeways IV 1995, Gobiswater Fm. (DUARTE RODRIGUES 1982b), Ruacana (9 km W of) II 1994, Spitzkoppe IV 1998.

Host: *Cordia sinensis* LAM. (syn. *C. rothii* ROEM. & SCHULT.) (Boraginaceae).



***Dictyla pongana* (DRAKE 1953)**

Distribution: Botswana, Namibia, South Africa (Limpopo, Gauteng).

Namibia: Abachaus I 1956 (DUARTE RODRIGUES 1987b), Gobiswater Fm. IV 1972, Kaudom II 1992, Klein Dobe II 1992, Okahandja I 1928 (type locality), Omandumba X 2002, Varianto III 2005.

Host: *Vitellariopsis* (syn. *Austromimusops*) *dispar* (N.E. BR.) AUBRÉV. (Sapotacea), Tugela bush-milkwood, an endemic plant in KwaZulu-Natal, and *Croton gratissimus* BURCH. (Euphorbiaceae), which is widespread in tropical Africa and known from central and northern parts of Namibia.

**Genus *Dulinius* DISTANT 1903**

(*Sankisia* SCHOUTEDEN 1916)

The genus contains 11 species, which are all found on the Africa continent, Madagascar, and on the Seychelles, with the exception of one species, which is distributed outside of Africa in the Oriental region and in the southeast Palearctic.

***Dulinius maculatus* DUARTE RODRIGUES 1979 (Fig. 25a, b)**

Distribution: Botswana, Ivory Coast, Namibia, Nigeria, South Africa (KwaZulu-Natal).

Namibia: Gelukkie IV 1990, Popa Falls III 1994.

Host: unknown.

**Genus *Gabirobios* SCHOUTEDEN 1955**

The genus *Gabirobios* contains a single species, described from Rwanda. It is also known for Nigeria (GÖLLNER-SCHIEDING 2004a) and for northern Namibia.

***Gabirobios basilewskyi* SCHOUTEDEN 1955 (Fig. 26)**

Distribution: Namibia, Nigeria, Rwanda.

Namibia: Gelukkie III 1992, Katima-Mulilo III 1992, Kaudom II 1992, Nakatwa III 1992.

Host: unknown.

**Genus *Galeatus* CURTIS 1833**

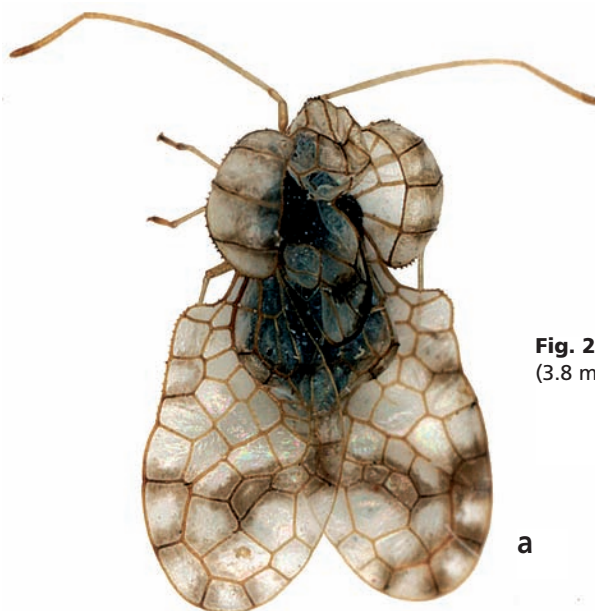
(*Cadmilos* DISTANT 1909)

Species of the genus *Galeatus* are found in the Afrotropical, Palearctic and Oriental region. Only one widespread species is common in Namibia.

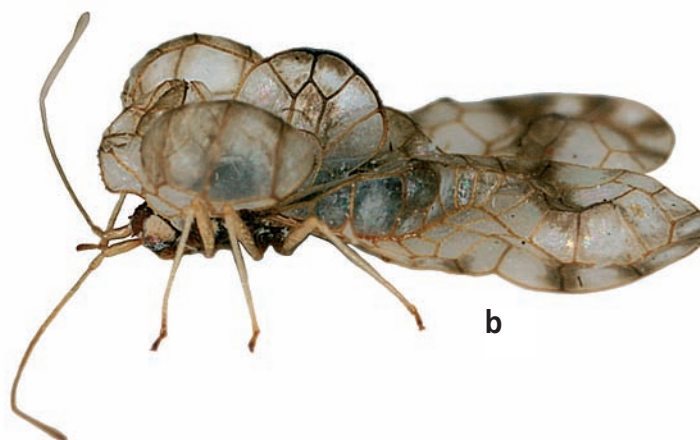
***Galeatus scrophicus* SAUNDERS 1876 (Figs 27a, b, 28)**

(*Galeatus semilucidus* JAKOVLEV 1884, *Cadmilos reitarius* DISTANT 1909, *Galeatus helianthi* ÖNDER & LODOS 1977)

Distribution: Botswana, Cape Verde, Chad, Egypt, Ethiopia, Namibia, Nigeria, Senegal, South



**Fig. 25: (a) *Dulinius maculatus* (3.8 mm) (b) lateral view.**



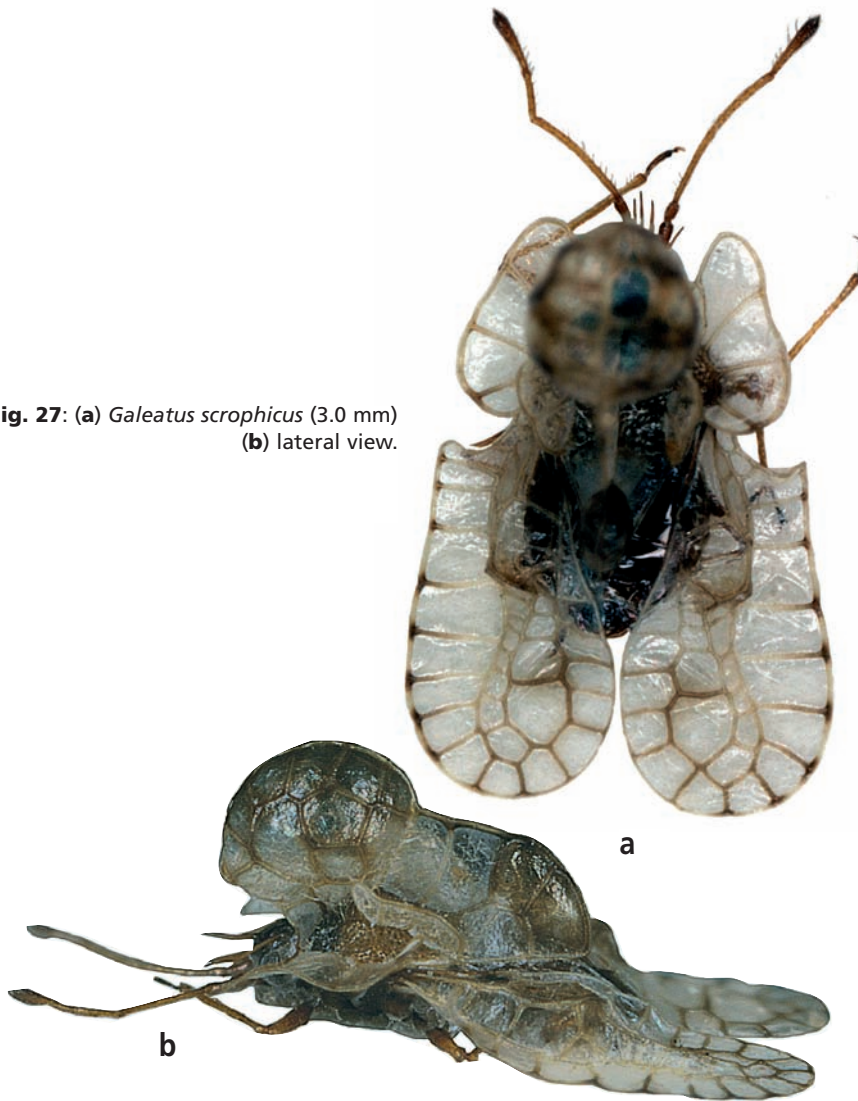
Africa, Sudan, Tanzania, also in Yemen. This species is widely distributed from southern Europe and northern Africa to South Africa, Asia and India.

Namibia: Ai-Ais II 1994, Buffalo Camp II 1992, Daan Viljoen Game Reserve III 1994, Eddahof IX 2003, Epupa Falls III 1994, Etosha National Park (Dorsland V 1987, Halali IV 1989, Namutoni XII 1993, Otjivasandu V 1986, W of Wolfsnes III-IV 1988), Fish River Canyon II 1994, Gobabeb IX 1974 (shore washing) and Kuiseb R. near Gobabeb II-III 1983 (DUARTE RODRIGUES 1987b), Gunsbewys IV 1995, Hardapdam I 1993, Huab-River X 1998 (Malaise trap), Kamanjab X 1978 (DUARTE RODRIGUES 1988), Mahanene Agric. Res. Station XII 1993, Mahango Game Reserve II 1992, Nabaos X 2002, Ohlshenhagen II 1998, Okahandja Townlands IV 1976 (DUARTE RODRIGUES 1982e), Okaparakaha III 2004 / III 2005, Omandumba III 2004 / III 2005, Omaruru XI 1971, Omungwindi IV 1996, Ondorusu Falls VI-II 1973, Osona II 2002 / X 2002, Otjinungwa VI-II 1973 (DUARTE RODRIGUES 1982e), Paradies III



**Fig. 26: *Gabirobios basilewskyi* (2.4 mm).**

**Fig. 27:** (a) *Galeatus scrophicus* (3.0 mm)  
(b) lateral view.



**Fig. 28:** *Galeatus scrophicus* on *Laggera decurrens* (Brakwater near Windhoek, October 2003).

2004, Popa Falls VIII 1994, Regenstein XII 1973, Ugab River X 1998 (sweeping), Van Bach Damm X 2002, Waterberg VIII 1994, Windhoek XI 1974 / III 2004.

Host: *Artemisia* L. sp., *Chrysanthemum* L. sp., *Echinops* L. sp., *Laggera decurrens* (VAHL) HEPPER & J.R.I WOOD, *Pechuel-loeschea leubnitziae* O. HOFFM. (Asteraceae), *Astragalus* L. sp. (Fabaceae) and others.

### Genus *Habrochila* HORVÁTH 1912

Most of *Habrochila* species are distributed in Africa (13 species), including Madagascar (three endemics). Three additional species are found in Sri Lanka, India, and China. Namibia hosts six species, including two that are presently only known from that country.

### *Habrochila africana* DRAKE 1948

(*Habrochila natalana* DRAKE 1956)

Distribution: Botswana, Cameroon, Dem. Rep. Congo, Kenya, Madagascar, Namibia, South Africa (Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga), Sudan, Tanzania, Uganda, Zimbabwe.

Namibia: Popa Falls III 1992.

Host: *Acanthus* L. sp. (Acanthaceae) (not in Namibia), *Ehretia rigida* DRUCE (Boraginaceae), *Lantana* L. sp. and *Lippia* L. sp. (Verbenaceae).

### *Habrochila clivosa* DRAKE 1954

Distribution: Botswana, Kenya, Mozambique, Namibia, South Africa (Eastern and Western Cape Province, Northern Province, KwaZulu-Natal), Sudan.

Namibia: Mahango Game Reserve III 1994, Popa Falls III 1992 / III 1994.

Host: *Rinorea beniensis* ENGL. (Violaceae) (not known from Namibia), *Solanum* L. (Solanaceae) (DUARTE RODRIGUES 1982c).

### *Habrochila ghesquierei*

SCHOUTEDEN 1953

Distribution: Dem. Rep. Congo, Madagascar, Malawi, Namibia, Rwanda, Tanzania, Uganda.

Namibia: Popa Falls III 1992 / III 1994.

Host: *Coffea* L. sp. (Rubiaceae), mangrove (*Avicennia* L. sp.?) (Avicenniaceae?), neither of them is known to exist in Namibia.

### *Habrochila kalahariana* DUARTE RODRIGUES 1982 (Fig. 29)

Distribution: Namibia.

Namibia: Okaparakaha III 2002 / V 2003 / III 2004 / III 2005, Cleveland III 1979 (type locality), Windhoek III 2005.

Host: unknown.





**Fig. 29:** *Habrochila kalahariana* (2.7 mm).



**Fig. 30:** *Haedus agelasticus* (2.3 mm).



**Fig. 31:** *Haedus foetidus* (2.0 mm).

***Habrochila namibiana* DUARTE  
RODRIGUES 1989**

Distribution: Namibia.

Namibia: Ameib I / II 1972 (type locality), Omandumba III 2004, Okaparakaha III 2003 / III 2004, Windhoek III 2005.

Host: *Barleria* L. sp. (Acanthaceae), a pantropical, species rich plant genus, also widespread in Namibia.

***Habrochila placida* HORVÁTH 1912**

Distribution: Dem. Rep. Congo, Ghana, Namibia, South Africa (Transvaal), Tanzania, Uganda, Zimbabwe.

Namibia: Mahango Game Reserve III 1994, Otzazuma IV 1996 (beating), Popa Falls III 1992 / III 1994.

Host: *Coffea* L. sp. (Rubiaceae), *Theobroma cacao* L. (Sterculiaceae). Neither plant species is native in Namibia.

**Genus *Haedus* DISTANT 1904**

(*Hormisdas* DISTANT 1910)

Twenty-three species of *Haedus* are found predominantly in tropical Africa and Madagascar. Six additional species are described from the Oriental region and China. Three species of *Haedus* are known from Namibia.

***Haedus agelasticus* GÖLLNER-SCHIEDING  
2003 (Fig. 30)**

Distribution: Namibia, South Africa.

Namibia: Brandberg Wasserfallfläche (yellow pan traps) X 1998, Eden III 2005, Fish River Canyon II 1994, Gellap Ost X 2002 (type locality) / V 2003, Oanob Dam III 2003, Omandumba X 2002 / III 2004, Otjiamongombe III 2003, Otjua X 1991, Spitzkoppe IV 1998, Toggekry V 2003, Viljoenskroon X 1998 (Malaise trap), Waterberg X 1998, Wildernis III 2005, Windhoek III-IV 1989 / III 2004.

Host: *Boscia albitrunca* GILG & BENEDICT (Capparaceae), found in the drier parts of southern Africa.

***Haedus cirratus* DRAKE & HILL 1964**

Distribution: Botswana, Burkina Faso, Central African Republic, Ethiopia, Madagascar, Namibia, Nigeria, Rwanda, Sudan.

Namibia: Eden III 2005, Mahango Game Reserve III 1992, Omandumba III 2004, Paradies III 2005 / III 2006, Popa Falls III 1994, Varianto III 2005, Windhoek III 2004 / III 2005.

Host: *Grewia flavescens* JUSS. (Malvaceae).

***Haedus foetidus* GÖLLNER-SCHIEDING  
2003 (Fig. 31)**

Distribution: Namibia.

Namibia: Karios X 2002 / III 2003 (Malaise trap), Nabaos II-III 2002 (type locality), Omandumba III 2005.



**Fig. 32:** *Kalama pusana* (2.9 mm).



**Fig. 33:** *Kapiriella inopinus* (2.8 mm).



**Fig. 34:** *Lasiacantha kamanyabensis* (3.0 mm).

Host: *Boscia foetida* SCHINZ (Capparaceae), occurs in Northern Cape and Namibia.

#### Genus *Kalama* PUTON 1876

(*Campylostira* [*Kalama*] PUTON 1876, *Dictyonota* [*Kalama*] PUTON 1876, *Dictyonota* [*Elina*] FERRARI 1878, *Elina* LETHIERRY & SEVERIN 1896 [preoccupied], *Alcletha* KIRKALDY 1900, *Dictyonota* [*Alcletha*] HORVÁTH 1906)

Several species are known from the Palearctic and Oriental region, only three species are found in the Afrotropical region, and one in Namibia.

#### *Kalama pusana* (DRAKE & MAA 1955) (Fig. 32)

Distribution: Burkina Faso, Cape Verde, Chad, Dem. Rep. Congo, Ethiopia, Ghana, Ivory Coast, Namibia, Nigeria, Senegal, Somalia, South Africa, Sudan, Tanzania, Zambia. This species was described from India.

Namibia: Locality not specified (DUARTE RODRIGUES 1987c).

Host: unknown. The species was found at its type locality "on potato in store". Often collected at light.

#### Genus *Kapiriella* SCHOUTEDEN 1918

(*Lembella* SCHOUTEDEN 1918)

The eight species of this genus are restricted to Africa, only one occurs in Namibia.

#### *Kapiriella inopinus* (DRAKE 1945) (Fig. 33)

(*Kapiriella conradi* DRAKE 1957)

Distribution: Botswana, Dem. Rep. Congo, Namibia, Rwanda, Tanzania, Zimbabwe.

Namibia: Popa Falls III 1992 / III 1994 / VIII 1994.

Host: unknown.

#### Genus *Lasiacantha* STÅL 1873

(*Tingis* [*Lasiacantha*] STÅL 1873)

Species of *Lasiacantha* are widely distributed in the Old World. Nineteen African species are described, six are found in Namibia, including two, which are only known for that country so far.

#### *Lasiacantha crassicornis* HORVÁTH 1929

Distribution: Mozambique, Namibia, South Africa (KwaZulu-Natal, Transvaal, Cape Province).

Namibia: Brandberg Wasserfallfläche IV 1999 (yellow pan traps), Kaross II 1925 (DUARTE RODRIGUES 1987a), Osuna IV 1989.

Host: unknown.

#### *Lasiacantha exigua* DUARTE RODRIGUES 1987

Distribution: Botswana, Namibia.

Namibia: Okarukondovi VII 1978 (type locality) (ground trap) (DUARTE RODRIGUES 1987b).

Host: unknown.





**Fig. 35:** *Lullius major* (3.0 mm).

***Lasiacantha horváthi* DRAKE 1951**

(*Lasiacantha yebo* SCHOUTEDEN 1955)

Distribution: Dem. Rep. Congo, Ethiopia, Kenya, Namibia, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Uganda, Zambia, also in Yemen.

Namibia: Kaudom Game Reserve II 1992, Popa Falls III 1994.

Host: unknown.

***Lasiacantha kamanyabensis*  
DUARTE RODRIGUES 1987 (Fig. 34)**

(*Cysteochila theroni* DUARTE RODRIGUES 1990)

Distribution: Madagascar, Namibia, South Africa (Cape Provinces).

Namibia: Kamanjab I 1925 (type locality), Omandumba III 2004 / III 2005, Otjiamongombe III 2002 / V 2003, Otjondeka III 2003, Toggekry V 2003, Windhoek III 2004.

Host: *Monechma genistifolium* C.B. CLARKE (Acanthaceae), common in Namibia.

***Lasiacantha lata*  
GÖLLNER-SCHIEDING 2005**

Distribution: Namibia.

Namibia: Naukluft III 2003 (type locality), Omandumba III 2004 / III 2005.

Host: *Barleria lancifolia* T. ANDERS. (Acanthaceae), a plant with southern African distribution, widely distributed also in Namibia.

***Lasiacantha turneri* DRAKE 1953**

Distribution: Namibia.

Namibia: Brandberg plateau X 1998 (yellow pan traps), Okahandja II 1928 (type locality), Omandumba III 2004 / III 2005, Otjiamongombe III 2002 / V 2003, Otjondeka III 2003, Toggekry V 2003, Windhoek III 2004.



**Fig. 36:** *Mafa lanceolata* (3.3 mm).

dumba III 2005, Paradies III 2005, Windhoek III 2005.

Host: *Blepharis mitrata* C.B. CLARKE (Acanthaceae), found in Namibia and South Africa.

***Lasiacantha zimbabwensis*  
DUARTE RODRIGUES 1982**

Distribution: Namibia, South Africa (Natal), Sudan, Tanzania, Zambia, Zimbabwe.

Namibia: Buffalo Camp IV 1990, Kaudom Game Reserve III 1992, Osona IV 1989, Paradies III 2004, Windhoek III 1989.

Host: unknown.

**Genus *Lullius* DISTANT 1904**

All seven species of the genus are found in South Africa (Western and Northern Cape Province, one species in Free State), one species extends its range to Namibia.

***Lullius major* DISTANT 1904 (Fig. 35)**

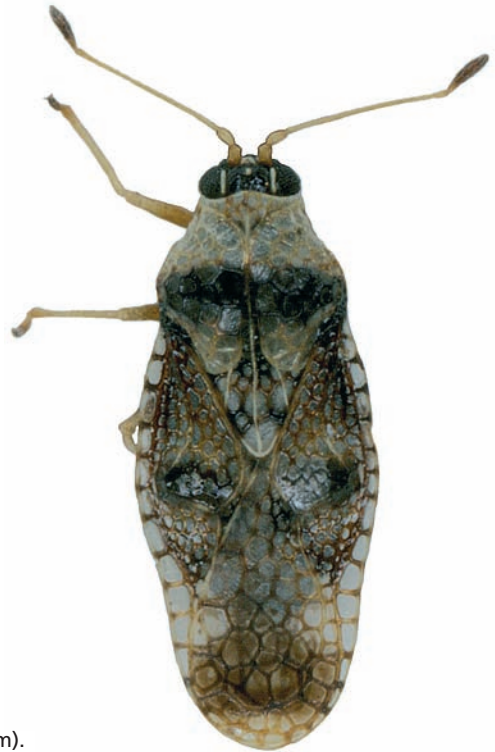
Distribution: Namibia, South Africa (Western Cape Province).

Namibia: Ai-Ais IV 1995.

Host: Restionaceae (DUARTE RODRIGUES 1990), which are often dominant plants of fynbos vegetation in the Cape region, although the family does not occur in Namibia at all.

**Genus *Mafa* HESSE 1925**

The African genus *Mafa* contains seven species. The most widespread one lives also in Namibia.



**Fig. 37:** *Naochila parvella* (1.8 mm).



**Fig. 38:** *Neoplerochila inflata* (3.3 mm).



**Fig. 39:** *Paracopium stolidum* (4.1 mm).



**Fig. 40:** *Phaenotropis cleopatra* (2.0 mm).

***Mafa lanceolata* HESSE 1925 (Fig. 36)**

Distribution: Botswana, Mozambique, Namibia, South Africa.

Namibia: Eden III 2005, Klein Dobe II 1992, Mafa (type locality in Ovamboland, not traced), Mutompo III 2002 / III 2003, Ohlshenhagen II 1998, Okaparakaha III 2004, Otjiamongombe III 2003, Toggekry III 2003, Windhoek III 2005.

Host: *Aristida* L. sp. (Poaceae).

The species was found on Mopane (*Colophospermum mopane*) in Botswana. DUARTE RODRIGUES (1982b) cited the label of the specimens collected by the Southern African Expedition in Botswana as “beaten from *Colophospermum mupanelum* (?)”, which we interpret as *Colophospermum mopane* (J. KIRK ex BENTH.) J. LÉONARD, but this tree is surely not the host plant.

**Genus *Naochila* DRAKE 1957**

Nineteen species have an Afrotropical distribution, two are known from India. Two species are known for Namibia.

***Naochila natalana* (DRAKE 1954)**

Distribution: Kenya, Mozambique, Namibia, South Africa (Eastern Cape Province, KwaZulu-Natal, Mpumalanga), Sudan.

Namibia: Kaudom Game Reserve II 1992, Kati-

ma-Mulilo III 1992, Mahango Game Reserve III 1992, Okaparakaha II 2005 / V 2003, Paradies III 2004, Popa Falls III 1994, Rushoek III 2004, Windhoek (3 km S of) III 1976 (DUARTE RODRIGUES 1982d), Windhoek III 2004.

Host: *Ocimum americanum* (Lamiaceae).

***Naochila parvella* (DRAKE 1954) (Fig. 37)**

(*Naochila parallela* [sic] DRAKE 1957)

Distribution: Botswana, Madagascar, Mozambique, Namibia, South Africa (Eastern Cape Province, Kwa-Zulu Natal, Transvaal).

Namibia: Boxhagen X 1991, Eddahof IX 2003, Eden III 2005, Okaparakaha V 2003 / III 2004, Paradies III 2005, Windhoek III 2004.

Host: *Acacia hebeclada* DC. (Fabaceae), *Ehretia rigida* (THUNB.) DRUCE (Boraginaceae), both species are found in Namibia.

**Genus *Neoplerochila***

DUARTE RODRIGUES 1982

This genus contains four species from South Africa and one from Namibia.

***Neoplerochila inflata* DUARTE RODRIGUES 1982 (Fig. 38)**

Distribution: Namibia.

Namibia: Gobiswater Fm. IV 1972 (type locality), Paradies III 2006, Tsumeb III 2003.

Host: unknown.



### Genus *Paracopium* DISTANT 1902

The genus *Paracopium* contains more than 40 species, distributed mainly in the Afrotropical, but also in the Oriental and Australian region. The highest species diversity is in Africa, where 34 species are recorded for Africa and Madagascar. The host plants, as far as known, belong to *Clerodendrum* L. (Verbenaceae). *Paracopium* species are gall-inducing organisms. Only one species is known from Namibia.

#### *Paracopium stolidum* (HORVÁTH 1912) (Fig. 39)

Distribution: Angola, Dem. Rep. Congo, Gambia, Madagascar, Namibia.

Namibia: Popa Falls II 1994.

Host: unknown.

### Genus *Phaenotropis* Horváth 1906

(*Monosteira* [*Phaenotropis*] HORVÁTH 1906)

In Africa, three of the four species of the genus *Phaenotropis* are found; one in Northern Africa and Ethiopia, one appears to be restricted to South Africa and one widespread species is known from Namibia.

#### *Phaenotropis cleopatra* (HORVÁTH 1905) (Fig. 40)

Distribution: Namibia, Nigeria, Senegal, Sudan, also records from Egypt, Socotra, Yemen, Israel, Pakistan, and India.

Namibia: Brandberg Wasserfallfläche (yellow pan traps) X 1998, XI 1998 (as *Phaenotropis parvula* in GÖLLNER-SCHIEDING 2000), Dakota III 1998, Fish River Canyon II 1994, Gellap Ost X 2002 (at light), Nabaos V 2003 (pitfall traps), Omandumba III 2004, Okaparakaha V 2003, Paradies III 2004 / III 2005, Rushoek III 2004, Waterberg XII 1993, Wildheim Ost 384, Windhoek III 2004. Host: *Panicum turgidum* FORSSK. (Poaceae) and *Tephrosia* PERS. sp. (Fabaceae), both plant genera are known from Namibia.

#### *Physatocheila* FIEBER 1844

(*Monanthia* [*Physatocheila*] FIEBER 1844, *Phyllochisme* KIRKALDY 1904)

The species of this genus are found primarily in the Old World, but some also in North America. Eight African species are described. One species is restricted to Namibia.



Fig. 41: *Physatocheila namibiana* (3.0 mm).



Fig. 42: *Plerochila australis* (3.9 mm).

#### *Physatocheila namibiana* DUARTE RODRIGUES 1982 (Fig. 41)

Distribution: Namibia.

Namibia: Gobiswater Fm. IV 1972 (type locality), Paradies III 2004 / III 2006, Regenstein IV 1972 (paratypes, general sweeping) (both data DUARTE RODRIGUES 1982b), Regenstein XII 1973, Tsumeb III 2003, Windhoek II 1950 (on olive) (DUARTE RODRIGUES 1989).

Host: *Olea* L. sp. (Oleaceae).

### Genus *Plerochila* DRAKE 1954

The species of *Plerochila* are restricted to the Afrotropical region; two of the 17 known species are recognized from Namibia.

#### *Plerochila australis* (DISTANT 1904) (Fig. 42)

Distribution: Ethiopia, Dem. Rep. Congo, Kenya, Madagascar, Mascarene Islands (Mauritius), Mozambique, Namibia, South Africa (Northern Cape Province, Transvaal), Sudan, Tanzania, Uganda.

Namibia: Regenstein XII 1972 (DUARTE RODRIGUES 1982b), Neisip 34 (yellow tray) VII-IX 1994.

The locality given for Namibia “nr [near] Onseepkans, Orange R.[iver] ban[k]s“ I 1972 by DUARTE RODRIGUES (1989) is actually in South Africa (Northern Cape Province).

Host: *Olea europea* L. (Oleaceae) (DUARTE RODRIGUES 1982b, 1982c).

***Plerochila horvathi* (SCHOUTEDEN 1907)**

Distribution: Dem. Rep. Congo, Kenya, Mascarene Islands (Mauritius, Réunion), Namibia, Tanzania.

Namibia: "South West Africa" (DUARTE RODRIGUES 1982b).

Host: *Jasminum* L. sp., *Olea europea* L. (Oleaceae). In Tanzania this species was collected by tree fogging from *Afrocrania volckensii* (HARMS) HUTCH (Cornaceae), *Podocarpus latifolius* (THUNB.) R. BR. ex MIRB. (Podocarpaceae), *Teclea nobilis* DELILE, and *T. simplicifolia* VERDOORN (Rutaceae) (collected by Th. WAGNER, deposited in Museum für Naturkunde Berlin). *Jasminum* L. sp. and *Olea europea* L. are found in Namibia.

**Genus *Pogonostyla* DRAKE 1953**

The six species of *Pogonostyla* are distributed in Africa including Madagascar. Two species are known from Namibia.

***Pogonostyla discrega* DRAKE & SMITHERS 1958 (Fig. 43)**

Distribution: Namibia, South Africa (Limpopo), Zimbabwe.

Namibia: Ghaub 47 III 1979 and Tsumeb III 1979 (DUARTE RODRIGUES 1982e), Hurisib X 1991, Waterberg VIII 1994.

Host: *Clerodendrum glabrum* E. MEY (Verbenaceae), *Combretum hereroense* SCHINZ (Combretaceae), *Bauhinia petersiana* BOLLE (= *Cassia petersiana*) (Fabaceae), *Grewia flavescens* (JUSS.) (Tiliaceae) (DUARTE RODRIGUES 1982c).

***Pogonostyla natalicola* (DISTANT 1902)**

Distribution: Madagascar, Namibia, South Africa (KwaZulu-Natal).

Namibia: Popa Falls III 1994.

Host: unknown.

**Genus *Sinuessa* HORVÁTH 1910**

(*Phyllontochila* [*Sinuessa*] HORVÁTH 1910)

Seven African species are described; one common and widely distributed species occurs in Namibia.

***Sinuessa subinermis* (HORVÁTH 1910) (Fig. 44)**

Distribution: Angola, Botswana, Dem. Rep. Congo, Eritrea, Ethiopia, Fernando Po, Ivory Coast, Kenya, Malawi, Namibia, Nigeria, South Africa (KwaZulu-Natal, Transvaal), Sudan, Tanzania, Uganda, Zimbabwe, also Yemen.

Namibia: Askeveld II 1992, Buffalo Camp II 1992, Klein Nosib IV 1989, Gelukkik III 1992, Hurisib IV 1989, Leeupan I 1991, Mahango Game Reserve III 1994, Otavi II 1992, Otavi Fontein II 1992, Popa Falls III 1992 / III 1994, Varianto II 2004.

Host: unknown.

**Genus *Teleonemia* COSTA 1864**

The genus contains a few species of the Neotropical region. One species, *T. scrupulosa* has been introduced throughout the tropics to control the weed *Lantana camara* L. (Verbenaceae) in Africa, Australia, and Asia.

***Teleonemia scrupulosa* STÅL 1873 (Fig. 45)**

Distribution: The origin of this species is America. Records for Africa are known for Botswana, Dem. Rep. Congo, Ghana, Kenya, Madagascar, Malawi, Mascarene Islands (Mauritius), Mozambique, Namibia, Rwanda, Seychelles, South Africa, St. Helena, Tanzania, Uganda, Zambia, Zimbabwe.

Namibia: Katima-Mulilo III 1992.

Host: Found not only on *Lantana* L. sp. (Verbenaceae), but also on *Laggerra decurrens* (VAHL) HEPPER & J. R. I WOOD (Asteraceae), both found in Namibia. There are also probable host records from plants belonging to other families.

**Genus *Urentius* DISTANT 1903**

(*Ayrenus* DISTANT 1903, *Prionostirina* SCHUMACHER 1913)

The genus *Urentius* contains seven species in the Old World. Five species occur in Africa and in the southern Palearctic re-



Fig. 43: *Pogonostyla discrega* (4.0 mm).



Fig. 44: *Sinuessa subinermis* (5.0 mm).





**Fig. 45:** *Teleonemia scrupulosa* (3.4 mm).

gion. One species is endemic to Australia. Two widely distributed species are found not only in Africa, including Namibia, but also in the southern Palearctic and the Oriental region. Three species are known from southern Africa.

#### *Urentius euonymus* DISTANT 1909

(*Urentius hoggari* BERGEVIN 1928, *Urentius maculatus* DRAKE 1933, *Urentius abutilinus* PRIESNER & ALFIERI 1953)

Distribution: Ethiopia, Kenya, Mozambique, Namibia, Nigeria, South Africa (Transvaal), Senegal, Sudan. The species is also known from Algeria, Egypt, Israel, Saudi-Arabia, Yemen and from India, Sri Lanka.

Namibia: Eddahof IX 2003, Eden III 2005, Kaudom II 1992, Klein Dobe II 1992, Mahango Game Reserve II 1998, Ganab III 1983 (DUARTE RODRIGUES 1987b), Okahandja II 2004, Omandumba III 2005, Otjiamongombe IV 2001, Paradies III 2005, Windhoek III 2005.

Host: *Abutilon* sp. (e.g. *A. muticum* in Egypt) (Malvaceae), *Althaea* sp. (Malvaceae), *Canna indica* (Cannaceae), *Helianthemum lippii* (Cistaceae) in North Africa, *Sida cordifolia* (Malvaceae), *Talinum triangulare* (Portulacaceae). All



**Fig. 46:** *Urentius hystricellus* (newly moulted adult and nymphs) on *Croton subgratissimus* (Otavi Mountains, February 2004).



**Fig. 47:** *Urentius hystricellus* (2.9 mm).

records from Namibia are without host plant information. However, *Althaea*, *Sida* (*S. cordifolia* and others), and *Talinum* are found in Namibia.

#### *Urentius hystricellus* (RICHTER 1870) (Figs 46, 47)

(*Urentius echinus* DISTANT 1903, *Urentius olivaceus* DISTANT 1909 *Urentius sentis* DISTANT 1909 *Urentius aegyptiacus* BERGEVIN 1930)

Distribution: Botswana, Ethiopia, Ghana, Kenya, Mozambique, Namibia, Niger, Nigeria, Senegal, South Africa (Transvaal), Sudan, Tanzania, Uganda, Zambia, Zimbabwe. The species is also found in Egypt, Israel, Yemen and in the Oriental region and was imported accidentally to the USA.

Namibia: Brandberg Wasserfallfläche (yellow pan traps) IV 1999 (GÖLLNER-SCHIEDING 2000), Brandberg (roadside south of) III 2003, Kaudom II 1992, Mahango Game Reserve II 1998, Okaparakaha V 2003 / III 2004, Omandumba III 2005, Otjondeka III 2003, Paradies III 2004, Popa Falls III 1992 / III 1994, Owingi II 1982, Ruacana (9 km W of) II 1994, Varianto II 2004, Waterberg (edge of plateau) III 2003, Windhoek III 2005.



Fig. 48: *Urentius vepriis* (2.0 mm).

Host: *Croton gratissimus* BURCH. var. *subgratissimus* PRAIN (Euphorbiaceae). Adult specimens and nymphs were found on this plant in Otavi Mountains, Varianto. *Solanum* L. sp. (e.g. *S. incanum* L., *S. melongena* L.) (Solanaceae). *Solanum incanum* L. is known as an alien plant in Namibia (CRAVEN 1999), several species of *Solanum* L. occur in Namibia.

***Urentius vepriis* DRAKE 1945 (Fig. 48)**

Distribution: Botswana, Chad, Namibia, South Africa (North West Province), Sudan.

Namibia: Katima Mulilo III 1992, Klein Dobe II 1992, Nakatwa III 1992, Nya Nya Pan V 1993, Okaparakaha III 2004 / II 2005.

Host: *Hermannia* L. sp. (Sterculiaceae). DRAKE (1945) wrote in his original description that *Urentius vepriis* –which was collected some kilometres west of Pretoria in South Africa – was “breeding on *Hermannia micropetala*“. However, this plant is endemic to Southern Mozambique (EXELL & WILD 1961). DUARTE RODRIGUES (1982c) mentioned *Hermannia glanduligera* K. SCHUM. from South Africa as host plant, this species occurs in Namibia too (CRAVEN 1999).

**Key to subfamilies of Tingidae in Namibia**

- A Clavus of hemelytron clearly visible when wings at rest, not covered by pronotum. Bucculae always extending beyond apex of head, head elongate anterior to eyes . . . . . Cantacaderinae STÅL 1873  
Only one genus in Namibia:  
*Cantacader* AMYOT & SERVILLE 1843.  
4.5-5mm (three species) (Figs 1-2).
- A\* Clavus of hemelytron more weakly developed than mesocorium and hardly visible, covered by extended pronotum, head not elongate, bucculae not or only slightly extending beyond apex of head . . . . . Tinginae LAPORTE 1832

**Key to genera of Tinginae in Namibia**

- 1 Bucculae open in front, base of rostrum visible in frontal view . . . . . 2
- 1\* Bucculae closed in front, base of rostrum not visible . . . . . 6
- 2 Pronotum and hemelytra with small areolae, head with four spines, antennae shorter than width of pronotum, with

setae much longer than diameter of antennal segments. Hood slightly higher than median carina, rounded, produced anteriorly and extending beyond base of head. Pronotum with three carinae, covered with long setae. Hemelytra also with setae, but somewhat shorter than those on pronotum. Paranota with two to three rows of areolae, rounded laterally, costal area of hemelytra for greater part with one row of areolae. Discoidal area narrow, with three to four rows of areolae. Brown coloured, slender species. 2.9-3.2 mm . . . . .  
. . . *Kalama* PUTON 1876 (one species)

- 2\* Pronotum and hemelytra with large transparent areolae. Antennae very thin and long, with fine pilosity. Head concealed by large hood. Hood with areolae, pronotum tricarinate, median carina high and with large areolae. Hemelytra ovoid, with large areolae, discoidal area swollen, wings extending beyond abdomen . . . . . 3
- 3 Pronotum mostly concealed by large reflexed paranota, with large areolae. Hood large, cyst-like, head not visible from above. Median carina connected with hood, higher than hood, lateral carinae much smaller, but also upright and prolonged. Hemelytra very broad, with elevations anteriorly. When hemelytra covering at rest, sutural area not on top of the other. 3-4 mm . . . . .  
*Dulinius* DISTANT 1903 (one species)
- 3\* Paranota not reflexed and not covering pronotum, with one row of large areolae, hood anteriorly as long as paranota or slightly longer . . . . . 4
- 4 Margin of paranota anteriorly at inner site round, paranota almost forming a semicircle, hood balloon-like, connected with median carina, anterior part of median carina narrow and high, posterior part of median carina about equal in size and shape as hood, never smaller, forming a second balloon-like structure. Lateral carina partly inflated; of variable size between species. Hemelytra anteriorly with strong elevation, wings extending the abdomen. 2.7-4.5 mm . . . .



- Habrochila* HORVATH 1912 (six species)
- 4\* Paranota anteriorly at inner side more parallel sided or concave, never convex . . . . . 5
- 5 Hood laterally flattened, narrow, apically pointed, exceeding paranota and reaching base of 3<sup>rd</sup> antennal segment, median carina of pronotum more or less swollen and laterally depressed, inflated with a few large areolae, pronotum almost completely concealed by turned over extended lateral carina, lateral carinae composed of one large areola. Hemelytra slightly longer than abdomen, tips slightly separated in repose, hemelytra anteriorly in part of subcostal and discoidal area raised to a tumid elevation, not as prominent as in *Habrochila*. Smaller species, with pale coloured wings and dark brown body. 2.5-3 mm . . . . .
- Bako* SCHOUTEDEN 1923 (four species)
- 5\* Hood large, balloon-like, somewhat depressed anteriorly, paranota with one row of large areolae, produced anteriorly, median carina not as high as hood, with a few large areolae, posteriorly tumid, lateral carinae short, with one row of three areolae, hemelytra slightly longer than abdomen, costal area with one row of large areolae. Anterior part of hemelytra elevated, elevation starts at base of hemelytra. 3 mm . . . . .
- Galeatus* CURTIS 1833 (one species)
- 6 Head, pronotum and hemelytra covered densely with long spines, tip of spines with thin setae, head with three long spines. Small hood, extending only slightly beyond base, paranota broad, turned up and covering the pronotum – except hood and posterior part, carinae only visible in part, especially in the posterior part of pronotum. Costal area of hemelytra with one to two rows of areolae. Light yellow, 2-2.7 mm . . . . .
- Urentius* DISTANT 1903 (three species)
- 6\* Head, pronotum and hemelytra not covered with long spines . . . . . 7
- 7 Paranota reflexed, covering the pronotum, pronotum tricarinate, carinae partly covered by reflexed paranota, sometimes not visible . . . . . 24
- 7\* Paranota not reflexed . . . . . 8
- 8 Paranota produced laterally, one or more rows of areolae . . . . . 17
- 8\* Paranota absent or narrow with one row of small areolae, head short and wider than long, anterior part of pronotum with collar or with very small hood . . 9
- 9 Pronotum tricarinate . . . . . 10
- 9\* Pronotum unicarinate . . . . . 14
- 10 Lateral carinae long, clearly visible, reaching calli . . . . . 11
- 10\* Lateral carinae short, fading out anteriorly on tumid part of pronotum, all three carinae not very prominent but clearly visible on posterior part of pronotum, median carina also visible on anterior part of pronotum. Antennae stout, pilosity short, costal area of hemelytra very narrow, areolae only visible on the apical part of hemelytra. Dark brown species. 3 mm . . . . .
- Angolusa* DRAKE 1958 (one species)
- 11 Slender antennae, diameter of longest third antennal segment about same diameter as tibia . . . . . 12
- 11\* Antennae stout, diameter of third antennal segment clearly wider than diameter of tibia, densely pilose. Hood small, paranota reflexed but not resting onto the pronotum, narrow with one row of areolae, costal area of hemelytra with one row of quadratic areolae. Brown coloured. 4 mm . . . . .
- Teleonemia* COSTA 1864 (one species)
- 12 Body slender . . . . . 13
- 12\* Body ovoid. Antennae long, longer than widest part of pronotum, yellow brown, except dark brown fourth antennal segment, paranota, collar, carinae, and proximal part of pronotum with same colouration, contrasting with black head and pronotum. Head short and stout, paranota narrow and upright, over its length of about same width, with one row of indistinct areolae, hemelytra passing the abdomen, costal area with one row of distinct areolae, hemelytra much wider than pronotum (ratio: 1.6:1). 3 mm . . . . .
- Compseuta* STÅL 1873 (one species)

- 13 Antennae long, more than twice as long as greatest width of pronotum, nearly parallel sided hemelytra, paranota narrow, only slightly raised, with one row of clearly visible areolae, costal area with one row of distinct areolae. Third antennal segment, pronotal margins, costal area yellow brown, other antennal segments, head and central parts of pronotum dark brown. 2.5 mm . . . . .  
*Bunia* SCHOUTEDEN 1955 (one species)
- 13\* Antennae short, about as long as greatest width of pronotum, head and tumid part of pronotum dark brown, but only slightly contrasting with brown median portion of hemelytra. Paranota not equal in width over entire length and areolae well visible only on anterior part of pronotum. Hemelytra only 1.4 of the width of pronotum. 2.5 mm . . . . .  
*Gabiobius* SCHOUTEDEN 1955 (one species)
- 14 Surface with small, light brown to milky white scale-like setae, body stout, dark. Head, antennae, legs, pronotum, and most of venation black. Head with two pairs of short spines (black at its base, and light coloured tips). Dark body contrasting with light brown median carina, paranota, and parts of hemelytra. Paranota very narrow, as well as costal area of hemelytra narrow with one row of areolae, discoidal area with five areolae at widest part. 2-2.5 mm . . . . .  
*Phaenotropis* HORVATH 1906 (one species)
- 14\* Surface without small milky white scale-like setae, paranota absent or very narrow, species of slender appearance . . 15
- 15 Eyes touching margin of pronotum, areolae of hemelytra small, venation indistinct, difference between narrow costal area and other parts of hemelytra not very distinct . . . . . 16
- 15\* Eyes well separated from anterior part of pronotum, antennae long, slender, hirsute, head short and domed. Venation of hemelytra clearly visible, costal area with one row of large areolae, of about same size as areolae on membrane, subcostal area broad, discoidal and subcostal area with much smaller areolae, hemelytra longer than abdomen. 3 mm  
*Kapiriella* . . . . .  
 SCHOUTEDEN 1918 (one species)
- 16 Head short and spherical, median carina and veins on hemelytra hardly visible, antennae slender and short, only about 1/3 of remaining body, femora shorter than tibia, pronotum concave. Costal area of hemelytra very narrow, with one row of areolae. Body slender, yellow brown. About 2.5 mm . . . . .  
*Agramma* STEPHENS 1829 (two species)
- 16\* Head longer than wide, antennae long, nearly half as long as length of body, median carina visible but weakly developed, femora slightly longer than tibia. Costal area of hemelytra with one row of clearly visible areolae. Legs reddish brown, head, pronotum and thorax black, hemelytra brown. 3 mm . . . . .  
*Lullius* DISTANT 1904 (one species)
- 17 Paranota narrow, with one or two rows of more or less small areolae, costal area of hemelytra narrow, with one row of areolae . . . . . 18
- 17\* Paranota broad, areolae large, costal area of hemelytra with more than one row of areolae, if paranota and costal area of hemelytra narrow, then with setigerous tubercles . . . . . 20
- 18 Body elongate, wings nearly parallel sided, body (without antennae) more than four times as long as broad, antennae with tubercles with long, fine setae, longer than diameter of antennae, pronotum without hood, anteriorly concave, tricarinate, lateral carinae short, paranota posteriorly narrow, anterior part with one or two rows of small areolae. Costal area of hemelytra very narrow, very small areolae, hemelytra pointed apically. Yellow brown, head and pronotum dark brown. 3.2-3.4 mm . . . . .  
*Mafa* HESSE 1925 (one species)
- 18\* Body not elongate, not parallel sided and less than four times as broad . . 19
- 19 Antennae slender, head with five large dorsal spines. Pronotum tricarinate, paranota with one or two rows of areolae. Costal area of hemelytra with one row of areolae, lateral margin of pronotum and



- hemelytra with curled setae, light to medium brown, if without setae on lateral margin, than only indistinct tubercles and dark brown with milky white areolae on hemelytra. 2-3.5 mm . . . . .  
*Haedus* DISTANT 1904 (three species)
- 19\* Antennae solid, longer than half of body length, with fine, short and decumbent setae, third segment longest and apically thickened; fourth antennal segment about same diameter as apex of third segment, head with five spines of different sizes. Pronotum tricarinate, paranota and costal area of hemelytra with one row of easy visible areolae, sometimes a second row with small areolae partly present, light brown. 4-5 mm . . . . .  
*Paracopium* DISTANT 1902 (one species)
- 20 Pronotum without hood . . . . . 21
- 20\* Pronotum with hood of variable shape and size . . . . . 22
- 21 Paranota with one to three rows of large areolae, antennae slender with scattered long setae. Costal area with two rows of large areolae, lateral margin of hemelytra and paranota with spines. Small stout species, yellow brown or light brown. 1.7-1.8 mm . . . . .  
*Afrotigis* DRAKE & HILL 1964 (two species)
- 21\* Paranota large, rounded, up to five rows of areolae. Antennae longer than half of body length, slender, without tubercles, but with long fine setae. Body covered with long, fine setae, lateral margin of pronotum and hemelytra with additional tubercles with fine, long setae. Lateral margin of hemelytra convexly expanded at base, then sub-parallel, apical third widest part of hemelytra, distinctly curved outwards. Costal area of hemelytra with at most five rows of large areolae. Yellow brown. 4-4.5 mm . . . . .  
*Pogonostyla* DRAKE 1953 (two species)
- 22 Antennae, margin of pronotum and veins of hemelytra covered with strong, setigerous tubercles. Tubercles give body spiny appearance. Body hirsute. Yellow brown. 3-4.5 mm . . . . .  
*Lasiacantha* STÅL 1873 (seven species)
- 22\* Setigerous tubercles absent, but spines on pronotal margin present, spines on margin of hemelytra sometimes present. Antennae slender, hirsute, head short with five spines. Hood pointing dorsad. Pronotal margin large, with several rows of areolae, recurved dorsad. Costal area of hemelytra wider than discoidal area, yellow brown . . . . . 23
- 23 Paranota laterally prolonged, often concave posteriorly, margin of hemelytra with distinct spines in basal half, yellow brown. 3.5-5.3 mm . . . . .  
*Ammianus* DISTANT 1903 (five species)
- 23\* Paranota about as long as broad, lateral margin rounded posteriorly, only one distinct acute spine anteriorly, a few short spines laterally and posteriorly. Margin of hemelytra without spines, yellow brown. 5-5.5 mm . . . . .  
*Simuessa* HORVÁTH 1910 (one species)
- 24 Paranota large, reflexed and conchate, anterior part not in contact with anterior margin of collar, but in contact with median carina, open posteriorly, median carina visible, carinae with long, milky white setae. Hemelytra with two tumid elevations of each side. Costal area of hemelytra with one row of clearly visible areolae. Brown, head black, most veins dark brown to black, body short. 2.5-3.5 mm . . . . .  
*Cochlochila* STÅL 1873 (seven species)
- 24\* Paranota reflexed and more or less tumid, but not conchate, carinae without long setae . . . . . 25
- 25 Paranota tumid, reaching median carina at least partly, anterior part of paranota in contact with anterior margin of collar, hemelytra with one tumid elevation. Last antennal segment and head dark, reflexed paranota with dark brown median colouration, yellow brown and dark brown. 2-2.5 mm . . . . .  
*Naochila* DRAKE 1957 (two species)
- 25\* Paranota reflexed, of variable length, often not tumid, its anterior part not reaching anterior margin of collar . . 26
- 26 Slender species of about 4-5 mm, paranota reflexed, collar of variable size, narrow or with raised, distinct, but small hood produced anteriorly . . . . . 27

- 26\* Small species, 2.5 to at most 4 mm, antennae slender, paranota of different size. Pronotum with collar or small and low hood, sometimes produced over part of head . . . . . 29
- 27 Lateral carinae of pronotum short, not reaching callus. Collar of pronotum not with raised hood, antennae long and slender. Costal area of hemelytra narrow with very small areolae. 4.5-5 mm . . . .  
*Plerochila* DRAKE 1954 (two species)
- 27\* Lateral carinae of pronotum reaching callus . . . . . 28
- 28 Paranota reflexed, narrow, and in touch with pronotum. Collar with raised hood. Costal area of hemelytra with one row of areolae, small but clearly visible. Discoidal area broad. Yellow brown, short black head. 4 mm . . . . .  
*Physatocheila* FIEBER 1844 (one species)
- 28\* Paranota reflexed, slightly inflated, and not in touch with pronotal surface. Antennae long and slender, segment III very long, segment IV longer than I and II together. Collar with small hood, produced anteriorly. Costal area of hemelytra moderately wide and with one row of squarish areolae, only at base with two irregular rows of areolae. Discoidal area extending beyond middle of hemelytra. 3.3-3.4 mm . . . . .  
*Neoplerochila* DUARTE-RODRIGUES 1982 (one species)
- 29 Species of different habitus, body more or less oval, R+M vein joining Cu vein almost in a right angle or veins elevated, paranota reflexed, of variable length, reaching median carina in some species. Metathoracic scent glands without sulcus. Hemelytra often with tumid elevations, if indistinct or absent, veins elevated. Costal area of hemelytra with one row of areolae. 2.5-3.5 mm . . . . .  
*Dictyla* STÅL 1874 (seven species)
- 29\* Slender body, R+M vein joining Cu vein at acute angle. Metathoracic scent glands with sulcus. Reflexed paranota variable in length, reaching median carina in some species. Costal area of hemelytra with one or two rows of areolae, hemelytra without elevations. 2.5-3.5 mm . . . . .  
*Cysteochila* STÅL 1873 (13 species)

## Description of new species

### *Ammianus ernsti* nov.sp. (Fig. 7)

**Holotype:** ♂, Namibia, Windhoek, S22°30' E17°00'E, 17. III 2005, leg. U. Göllner (National Museum Windhoek, Namibia). Paratypes (same data): 1♂, 1♀ (National Museum Windhoek, Namibia), 2♂♂, 2♀♀ (Museum für Naturkunde Berlin, Germany), 1♂, 1♀ (Plant Protection Research Institute Pretoria).

**Diagnosis:** This species is distinguished from all other known species of *Ammianus* by the shape of its paranota, which are wider than the abdomen, but narrow.

**Description:** Colour from dark brown to yellow brown, forming a colour pattern as shown in Fig. 7. Antennae, legs, spines on head light yellow brown. Hemelytra also yellow brown, but with variable intensity, with costal area medially brown, resulting in a brown pre-median band and a brown apical band, areolae in between and anterior to pre-median band light yellow brown and shiny.

Head armed with five well-developed spines, bucculae extending slightly beyond apex of head, antenniferous processes spiny, antennae long, pilose. Pronotum punctate, with long, fine, light coloured setae, tricarinate, lateral carinae low, only with one row of small areolae, reaching anteriorly to middle of pronotum. Median carina with one row of large areolae, highest elevation anteriorly and in part with two rows of areolae. Hood of moderate size, with long setae, laterally compressed, and with a small spine on its crest. Paranota very large, broadly expanded laterally, with clearly visible areolae, posterior margin with about 15 areolae, with long, fine setae, two spines on front margin and one spine on posterolateral margin, lateral parts not rounded and with three blunt spines. Hemelytra slightly longer than abdomen, greatest width across pre-median band, lateral margin with small spines, costal area with a maximum of five areolae, subcostal area with five to six small areolae, discoidal area narrow and with four rows of areolae, ♂♂ with a little narrower discoidal area than ♀♀, sutural area width, with six rows of areolae. Legs slender, without spines. Sternum punctate, shiny.



**Measurements** (in mm): Body length 5.2-6.4, maximal wide (pronotum) 3.4-3.9. Antennal segment lengths I 0.32, II 0.23, III 1.82-2.20, IV 0.50-0.54. No significant difference between male and female.

**Etymology:** We are pleased to dedicate this new species to Ernst Heiss on his 70<sup>th</sup> birthday and in recognition of his many fundamental contributions to the knowledge on Heteroptera.

**Distribution:** This species is known from central parts of Namibia; from Windhoek and Osona (a farm area south of Okahandja).

**Host:** *Kleinia longiflora* DC. (Asteraceae) (Fig. 49). Adults and nymphs were found only on this plant.

***Cysteochila bassoni* nov.sp.**  
(Figs 17a, b, 18)

**Holotype:** ♂, Namibia, Tsumeb Distr., Farm Varianto, S19°23' E17°44', 2.-3. III 2005, leg. U. Göllner (National Museum Windhoek, Namibia). Paratypes (same data): 1 ♀ (National Museum Windhoek, Namibia), 1 ♀ (Plant Protection Research Institute Pretoria), 2 ♂♂, 2 ♀♀ (Museum für Naturkunde Berlin, Germany).

**Diagnosis:** This species is similar to *Cysteochila transvaalensis*, but is clearly distinguished by its smaller reflexed paranota. It differs from *Cysteochila rusti* nov.sp. by its longer antennae, the slender body, and the slender legs, and the rather uniformly colouration.

**Description:** Colour in general yellow brown, head dark with minute, yellow pilosity, first three antennal segments yellow brown, fourth antennal segment dark brown with yellow brown base. Calli of pronotum brown, apex of posterior process of pronotum darkened. Hemelytra yellow brown, with dark transversal band, legs yellow brown, apex of tarsi dark. Costal area partly with dark sutures, body beneath yellow brown and brown.

Body slender, lateral margin of hemelytra slightly convex. Head with five dorsal spines, antennae slender and sparsely pubescent. Pronotum tricarinate, carinae thin, raised, with one row of well developed areo-



**Fig. 49:** *Kleinia longiflora*, hostplant of *Ammianus ernsti* nov.sp.

lae, the central part of pronotum finely punctate, hood moderately large, low, somewhat produced anteriorly in middle, lateral carinae concealed on disc by reflexed paranota, paranota not substantially exceeding lateral carinae. Areolae of hemelytra punctate, costal area narrow with one row of areolae, subcostal area narrow, discoidal area broad, in female broader than in male, sutural area exceeding abdomen. Legs slender, diameter of femora 0.10-0.13 mm. Ostiole clearly visible.

**Fig. 50:** *Cyphostemma juttae*, hostplant of *Cysteochila bassoni* nov.sp. (Otavi Mountains).



**Measurements** (in mm): Body length male 3.0-3.2, female 3.3-3.7, maximal wide (hemelytra) female 1.1-1.2, male 1.0-1.1. Antennal length (male and female) 1.40-1.65, third antennal segment 0.9-1.1.

**Etymology:** This species is named after Piet Basson, in recognition of his hospitality and support while studying the fauna of Heteroptera on his property in the Otavi Mountains, Namibia.

**Distribution:** Namibia, Otavi Mountains.

**Host:** *Cyphostemma juttae* (DINTER & GILG) DESC. (Vitaceae) (Fig. 50). Adults and immatures of different instars were found on this endemic Namibian plant.

#### *Cysteochila rusti* nov.sp. (Fig. 21a, b)

**Holotype:** ♂, Namibia, Erongo Distr., Farm Omandumba, S21°34' E15°32', 10.-14. III 2004, leg. U. Göllner (National Museum Windhoek, Namibia). Paratypes (same data): 1♂, 2♀♀ (National Museum Windhoek, Namibia), 2♂♂, 2♀♀ (Museum für Naturkunde Berlin, Germany), 1♂, 1♀ (Plant Protection Research Institute Pretoria, South Africa), 1♂, 1♀ (Museum Cape Town, South Africa).

**Diagnosis:** This species is characterized by the shape of its reflexed paranota and the moderately broad body in the female (Fig. 49). It is distinguished from *Cysteochila bassoni* by having shorter antennae and stouter femora, and by the relatively uniform light brown colouration with only slightly darker patterns on pronotum and hemelytra.

**Description:** Colour of body almost uniformly light yellow brown; antennae – except brown fourth segment –, pronotum, hemelytra, and legs light yellow brown. Ventral surface of body light brown. Head brown, dorsal spines light yellow brown. Pronotum, especially calli, slightly darker, veinlets on posterior tip of pronotum somewhat darkened. Hemelytra in middle are to some extent darker in colouration.

Head with five dorsal spines, dull, with milky white inconspicuous short pubescence. Central part of pronotum very finely punctate, hood moderately large, low, some-

what produced anteriorly, pronotum tricarinate, Paranota reflexed, with three rows of areolae, reaching in the middle of pronotum the lateral carinae. All carinae only slightly raised, with one row of tiny areolae. Paranota with up to three rows of areolae at widest part. Hemelytra convex, areolae shallowly punctate, costal area narrow with one row of small areolae, subcostal area narrow, discoidal area with up to six rows of areolae, sutural area broad, only slightly longer than abdomen. Femora strong, diameter 0.13-0.14 mm. Ostiole clearly visible.

**Measurements** (in mm): Body length male 2.7-3.1, female 3.1-3.4, maximal wide (hemelytra) male 0.99-1.0, female 1.11-1.17, Antennal length (male and female) 1.2-1.3, third antennal segment 0.68-0.78.

**Etymology:** This species is named after Ehrhart Rust, the owner of the farm Omandumba. We are grateful to him for his friendly support.

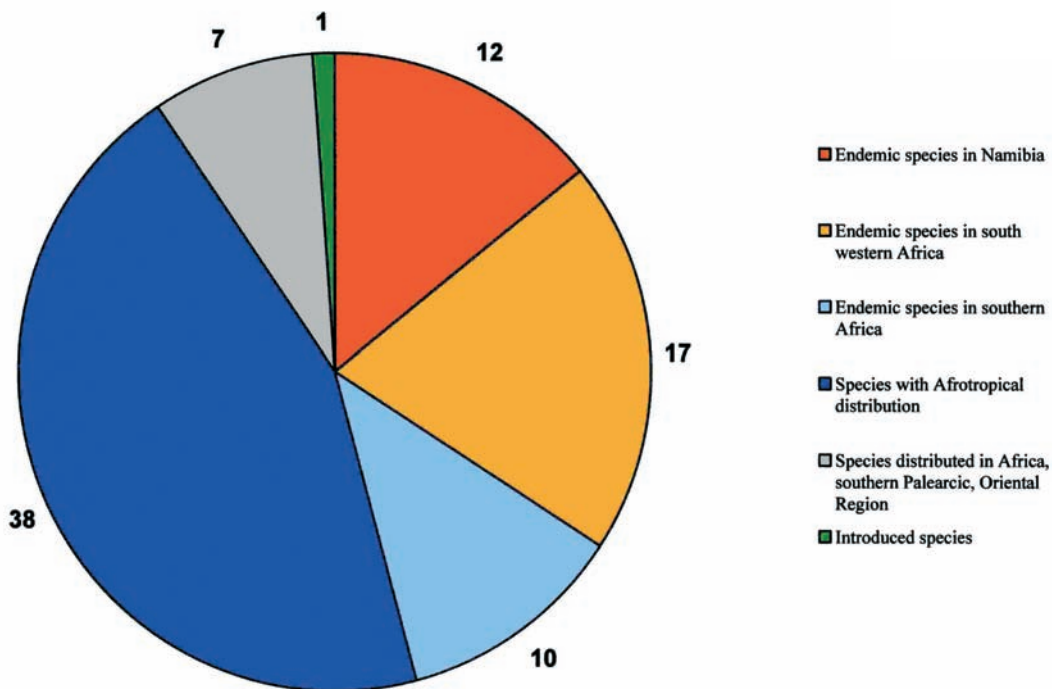
**Distribution:** Namibia.

**Host:** *Cyphostemma currorii* (HOOK. f.) DESC. (Vitaceae), endemic in Namibia and southwestern Angola.

#### Concluding remarks

In this paper, 85 species (14 %) of all presently recognized African species of Tingidae are recorded from Namibia. Nevertheless, some more species may be expected to occur in Namibia.

Host plants of lace bugs belong primarily to the families Fabaceae, Lamiaceae, Asteraceae, Boraginaceae, and Malvaceae. Host plants of more than one third of Namibian Tingidae remain completely unknown and the largest proportion of native Namibian plants has never been investigated for Tingidae. The host plant records from the literature, which were assembled in this publication, were often obtained from countries other than Namibia. Some of these host plants do not occur in Namibia; Tingidae, found on these plants elsewhere, must have additional hosts in Namibia. A few species currently only found in Namibia are probably more widespread, since their host plants show larger distributional ranges throughout southern Africa.

**Biogeographical origin of Tingidae in Namibia (in total 85 species)****Fig. 51** Biogeographical origin of Tingidae in Namibia.

Twelve (14 %) of the 85 Namibian species were collected only in Namibia (Fig. 51). Some of these species may be true endemics, but some others could be assumed to have a wider distribution in southern Africa, because their host plants also occur in neighbouring countries. However, 29 species (34 %) of Namibian Tingidae are restricted to the arid part of southwestern Africa (Southern Angola, Namibia, and Cape Provinces of South Africa). The second largest component of Namibian Tingidae species belongs to more widely distributed Afrotropical species (38 species, 45 %), with about half of them showing eastern to southern African distribution patterns. Seven oligo- or polyphagous species found in Namibia (8 %) have a wide range of distribution, which includes parts of the southern Palearctic and the Oriental region (Fig. 50). Only one species, *Teleonemia scrupulosa*, which is now found in many parts of tropical areas, where it feeds on *Lantana*, was introduced to Namibia from the New World.

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### Zusammenfassung

Die Zahl der für Namibia bekannten Tingidae erhöht sich durch diese Untersuchung von bisher 42 auf 85 Arten in 32 Gattungen, einschließlich der hier neu beschriebenen Arten *Ammianus ernsti* nov.sp., *Cysteochila bassoni* nov.sp. und *Cysteochila rusti* nov.sp. Insgesamt werden Daten von über 100 Fundorten in Namibia ausgewertet und zu allen Arten allgemeine Verbreitung und Wirtspflanzen angegeben. Von den meisten Arten sind die Wirtspflanzen nicht oder unzureichend bekannt, in einigen Fällen konnten hierzu Angaben ergänzt



werden. Zwölf Arten sind nur in Namibia gefunden worden, das sind 14 % aller dort festgestellten Arten. Insgesamt ist fast die Hälfte (45 %) der namibischen Tingidae im Vorkommen auf das südliche Afrika beschränkt, der Rest hat eine mehr oder weniger weite afrotropische Verbreitung. Außerdem gibt es sieben Arten, die ein sehr großes Areal in der Alten Welt besitzen, das weit über die Afrotropis hinausgeht. Nur eine Art, mit Ursprung in der Neotropis, ist in Afrika eingeführt worden und auch in Namibia zu finden.

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## Appendix I: List of Tingidae species of Namibia

(Species new for the fauna of Namibia are marked with an asterisk)

### Cantacaderinae:

*Cantacader* (\**afzelii*, \**attenuatus*, \**tenuipes*)

### Tinginae:

*Afrotingis* (*elachys*, \**mboloko*)

*Agramma* (*maynei*, \**peringueyi*)

*Ammianus* (\**alaticollis*, \**echo*, \**ernsti* nov.sp., \**junodi*, \**spinosus*)

*Angolusa* (\**machadoi*)

*Bako* (\**dieides*, \**distinctus*, \**lebruni*, \**lepidus*)

*Bunia* (\**milleri*)

*Ceratinoderma* (\**formicata*)

*Cochlochila* (*ampliata*, \**austroafricana*, \**bullita*, \**dispar*, \**nemesiae*, \**theroni*, \**zetana*)

*Compseuta* (\**holana*)

*Cysteochila* (\**bassoni* nov.sp., \**bredoi*, \**endeca*, \**impressa*, \**lineata*, \**natalensis*, \**nervosana*, \**otaviana*, \**rusti* nov.sp., \**senegalensis*, \**stricta*, \**tombeuri*, \**transvaalensis*)

*Dictyla* (*australis*, \**flavipes*, \**jacobsi*, \**nodipennis*, \**picturata*, \**poecilla*, \**pongana*)

*Dulinius* (\**maculatus*)

*Gabirobius* (\**basilewskyi*)

*Galeatus* (*scrophicus*)

*Habrochila* (\**africana*, \**clivosa*, \**ghesquierei*, \**kalahariana*, \**namibiana*, \**placida*)

*Haedus* (*agelasticus*, \**cirratu*s, \**foetidus*)

*Kalama* (*pusana*)

*Kapiriella* (\**inopinus*)

*Lasiacantha* (*crassicornis*, \**exigua*, \**horvathi*, \**kamanyabensis*, \**lata*, \**turneri*, \**zimbabwensis*)

*Lullius* (\**major*)

*Mafa* (*lanceolata*)

*Naochila* (*natalana*, \**parvella*)

*Neoplerochila* (*inflata*)

*Paracopium* (\**stolidum*)

*Phaenotropis* (\**cleopatra*)

*Physatocheila* (*namibiana*)

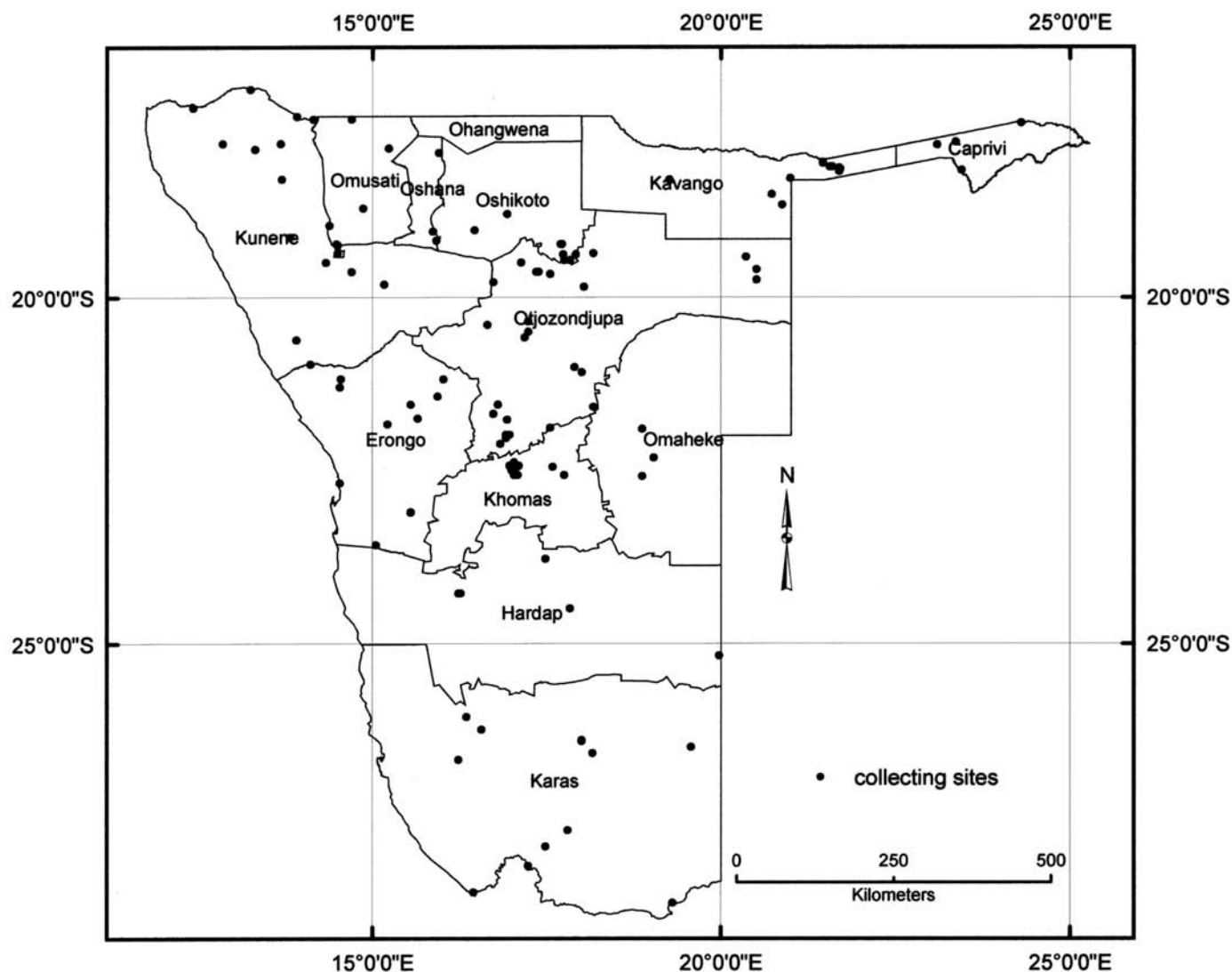
*Plerochila* (*australis*, \**horváthi*)

*Pogonostyla* (*discrega*, \**natalicola*)

*Simuessa* (\**subinermis*)

*Teleonemia* (\**scrupulosa*)

*Urentius* (*euonymus*, \**hystricellus*, \**vepris*)



**Map 1:** Location of collecting sites in Namibia.

### Appendix II: List of collecting sites in Namibia (Map 1)

The names printed in bold are used for the distributional records in this article. Different spellings of the same place and government region are in brackets. For every collecting site, we list the full name, explanations, date, collector, and coordinates.

**Abachaus** (Otjozondjupa): Farm area 75 km N of Otjivarongo, S19°47' E16°44'.

N. Abachaus, 12.1949, 3.1950, Abachaus, 10.1953, 4.1.1956, 8.7.1959 leg. Hobohm (DUARTE RODRIGUES 1987b).

**Ai-Ais** (Karas): Resort at hot springs and fish river canyon next to the campsite, S27°55' E17°29'.

10.-14.2.1993, 16.-17.4.1995 leg. Göllner-Scheidung. Some material in the collection of Museum für Naturkunde Berlin labelled as "Fish River Canyon" with collecting data 10.-14.2.1993 leg. Göllner-Scheidung refers to the same locality.

**Ameib** (Erongo): Farm area, Erongo Mountains, S21°45' E15°39'.

31.1.-2.2.1972, Southern African Exp. (DUARTE RODRIGUES 1989), 23.2.1975, leg. Endrödy-Younga (DUARTE RODRIGUES 1987b), 31.1.-2.2.1972, Ameib "forest" (as cited by DUARTE RODRIGUES 1988: 554 is a misinterpretation, it should be "farm").

**Andara** (Kavango): S18°04' E21°27'.

20.-25.8.1971 (no information about collector).

**Askevold** (Otjozondjupa): Farm area 20 km E Otavi, S19°40' E17°33'.

2.1992 leg. Deckert, leg. Göllner-Scheidung. On some labels of material from the Museum of Natural History Berlin from February 1992 is written "Farm Eggert" or "Askevold" with coordinates of nearby town Otavi, it refers to the same place.

**Aus** (Karas): S26°40' E16°14'.

8.-30.11.1929 leg. Turner (DUARTE RODRIGUES 1982e, 1989).



- Boxhagen** (Omaheke): Farm area 20 km SSW Gobabis, S22°35' E18°52'.  
5.10.1991 leg. Göllner-Scheidung.
- Brandberg, Wasserfallfläche** (Erongo): Brandberg, S21°10'-13' E14°31'-33', 1960-2000 m.  
19.-21.10.1998, S21°10'46" E14°32'52" leg. Butlin & Altringham, 21.-23.10.1998, 2000 m, S21°10' E14°33' leg. Butlin & Altringham, 10.-12.11.1998, 1980 m, S21°13'0.5" E14°31'0.1" leg. Kirk-Spriggs, 7.-10.4.1999, 1960 m, S21°10.77' E14°32.87' leg. van Noort & Compton.
- Brandberg (roadside south of)** (Erongo): "südlich Brandberg Piste", S21°18' E14°32'.  
10.3.2003 leg. Göllner-Scheidung.
- Brandberg plateau** (Erongo): S21°10'50" E14°32'50", 1960 m.  
19.-21.10.1998 leg. Butlin & Altringham.
- Buffalo Base** (Kavango): West Caprivi Park, 9 km E Bagani, S18°08' E21°41'.  
6.4.1990 leg. Marais.
- Buffalo Camp** (Kavango): West Caprivi Park, 10 km E Bagani, S18°09' E21°42'.  
28.2.1992 leg. Göllner-Scheidung.
- Cleveland** (Cleveland 17) (Otjozondjupa): Farm area 6 km N Otjivarongo, S20°24' E16°39'.  
8.3.1979, leg. Louw & Penrith (DUARTE RODRIGUES 1982b).
- Daan Viljoen Game Reserve** (Khomas): 19 km NW Windhoek, S22°26' E16°58'.  
D. Viljoen Parc, 4.-8.7.1974 leg. Theron (DUARTE RODRIGUES 1988), 7.3.1994 leg. Göllner-Scheidung.
- Dakota** (Otjozondjupa): Farm area 30 km NW of Otavi, S19°30' E17°08'.  
1.-3.3.1998 leg. Göllner-Scheidung.
- Eddahof** (Khomas): Farm area in Brakwater, 13 km North of Windhoek, S22°27' E17°04'.  
30.9.2003 leg. Willers, 11.2003 leg. Deckert, leg. Willers.
- Eden** (Eden 446) (Otjozondjupa): Farm area 150 km NE Okahandja, S21°05' E18°00'.  
5.-8.3.2005 leg. Göllner-Scheidung.
- Epupa Falls** (Kunene): S17°00' E13°15'.  
19.-21.2.1994 leg. Deckert.
- Etosha National Park** (Kunene): S18°00' E14°52' - S19°03' E15°52'.  
Dorsland, S18°43' E14°52', 4.5.1987 leg. Marais & Irish, Halali, S19°02' E16°28', 4.1989 leg. Göllner-Scheidung, Namutoni, S18°48' E16°56', 12.1993 leg. Deckert, Otjivasandu, S19°15' E14°30', 13.5.1986 leg. Griffin, Okaukuejo, Etosha Pan, Camp, S19°11' E15°55', 28.12.1974 leg. Endrödy-Younga (DUARTE RODRIGUES 1987b), W of Wolfnes, S19°03' E15°52', 24.3.-10.5.1988 leg. Griffin, Zebraomp, West Etosha, S19°22' E14°30' 13.5.1986 leg. Griffin.
- Ganab** (Erongo): Namib-Naukluft National Park, S23°06' E15°33'.  
16.3.1983 leg. Millar (DUARTE RODRIGUES 1987b).
- Gellap Ost** (Karas): Gellap Ost Research Station, S26°24' E18°00', 24 km NW Keetmanshoop, Biodiversity Observatory of BIOTA Southern Africa.  
10.2002 leg. Göllner-Scheidung.
- Gelukkie** (Kavango): About 2 km North of Andara at the opposite side of Okavango river, West Caprivi Park, S18°03' E21°27'.  
5.-11.4.1990 leg. Marais. Gelukkie, Kavango river banks, S18°03' E21°28', 1.3.1992 leg. Göllner-Scheidung.
- Ghaub** (Ghaub 47) (= Gaub) (Otjozondjupa): Farm area 35 km SE Otavi, S19°27' E17°47', 1400 m.  
9.-10.3.1979 leg. Louw & Penrith (DUARTE RODRIGUES 1982b).
- Gobabeb** (Erongo): Namib-Naukluft National Park, S23°34' E15°03'.  
7.9.1974 leg. Endrödy-Younga (DUARTE RODRIGUES 1987b).
- Gobiswater Fm.** (Otjozondjupa): 27 km N Grootfontein, S19°22' E18°10'.  
5.4.1972 („12 mls. N. Grootfontein“) (DUARTE RODRIGUES 1982b).
- Gunsbewys** (Karas): Farm area, 69 km N Aus, S26°03' E16°21'.  
14.-15.4.1995 leg. Göllner-Scheidung.
- Hardapdam** (Hardap): S24°29' E17°50'.  
1.1993 (Duarte Rodrigues 1988).
- Huab-River** (Kunene): Huab-River at Krone 721, S20°37'09" E13°54'31".  
23.-26.10.1998 leg. Kirk-Spriggs & Marais.
- Hurisib** (Otjozondjupa): Farm area 33 km NW Grootfontein, S19°23' E17°55'.  
4.1989, 10.1991 leg. Göllner-Scheidung.
- Iikango** (Omusati): Ovamboland, S17°51' E15°14'.  
3.3.1994 (no information about collector).
- Kamanjab** (= Kamanyab, Kamenjab) (Kunene): "Kaokoveld, Kamenjab 12 km W of", S19°38' E14°42'.  
25.2.1975, leg. Endrödy-Younga (DUARTE RODRIGUES 1987b), 2.10.1978 leg. Schlettwein (DUARTE RODRIGUES 1988), 1.1.1925 (DUARTE RODRIGUES 1987b).
- Kaoko Otavi** (Kunene): 30 km SW of Opuwo, S18°18' E13°42'.  
3.1926 (DUARTE RODRIGUES 1987a).
- Karakuvisa** (Karakuvisa = Okarukuvisa) (Otjozondjupa): 62 km E of Otjivarongo at Waterberg, S20°21' E17°14'.  
2.1958 leg. Kok (DUARTE RODRIGUES 1987b).
- Karios** (Karios 8) (Karas): Gondwana Canyon Park, S27°41' E17°48', Biodiversity Observatory of BIOTA Southern Africa.

- 23.10.2002 leg. Deckert, 12.-13.3.2003 leg. Schönefeld, 3.2003 leg. Deckert.
- Kaross** (Kunene): Farm area, S19°30' E14°20'.  
2.1925 (DUARTE RODRIGUES 1987a).
- Katima-Mulilo** (Caprivi): S17°29' E24°17'.  
3.-8.3.1992 leg. Göllner-Scheiding, leg. Uhlig, 3.-7.3.1998 leg. Göllner-Scheiding.
- Kaudom** (= Kaudom, Kaudum) (Kavango): Kaudom Game Reserve, S18°31' E20°43'.  
22.-25.2.1992 leg. Göllner-Scheiding.
- Klein Dobe** (Otjozondjupa): 40 km NE Tsumkwe, S19°25' E20°21'.  
19.-21.2.1992 leg. Deckert, leg. Göllner-Scheiding.
- Klein Nosib** (Otjozondjupa): Farm area between Grootfontein and Tsumeb, S19°28' E17°50'.  
4.1989 leg. Göllner-Scheiding.
- Kuiseb R. near Gobabeb** (Erongo): Kuiseb river near Gobabeb, Namib-Naukluft National Park, S23°34' E15°03'.  
18.2.-20.3.1983 Nat. Coll. Kuiseb Survey (DUARTE RODRIGUES 1987b).
- Leeupan** (Kavango): Kaudom Game Reserve, S18°40' E20°52'.  
12.-14.1.1991 leg. Marais.
- Mafa** (not traced): Ovamboland, Northern Namibia.  
HESSE (1925).
- Mahanene Agric. Res. Station** (Omusati): Ovambo, S17°26' E14°42'.  
5.10.-5.12.1993 leg. Wohlleber.
- Mahango Game Reserve** (Kavango): S18°11' E21°41'.  
28.2.1992 leg. Deckert, leg. Göllner-Scheiding, 11.1993 leg. Deckert, 2.1998 leg. Göllner-Scheiding.
- Manywa River** (Caprivi): West Caprivi Park, S17°48' E23°05'.  
4.-10.4.1990 leg. Marais.
- Messum** (Erongo): Messum river (650 m), S21°15'31" E14°28'17"  
7.-8.11.1998 leg. Kirk-Spriggs.
- Mile 46** (Kavango): Mile 46, Agricultural Research Station, about 68 km SW Rundu, S18°18'09.7" E19°15'11.9". Biodiversity Observatory of BIOTA Southern Africa.  
26.-28.2.2002 leg. Frisch, Richter, Uhlig & Vohland.
- Mutompo** (Kavango): Neighbouring communal area to Mile 46, 68 km SW Rundu, S18°18'38.7" E19°15'29.4", Biodiversity Observatory of BIOTA Southern Africa.  
3.2002 leg. Deckert, 11.3.-16.3.2003 leg. Frisch & Vohland.
- Nabaos** (Karas) (Nabaos 7): 26 km NW Keetmanshoop, S26°23' E18°00', Biodiversity Observatory of BIOTA Southern Africa.  
17.2.2002 leg. Göllner-Scheiding, 20.-27.5.2003 leg. Hoffmann.
- Nakatwa** (Caprivi): Mudumu National Park, S18°10' E23°26'.  
8.-13.3.1992 leg. Göllner-Scheiding.
- Naukluft** (Karas): Naukluft Mountains, Namib-Naukluft National Park, 16 km NW Büllsport, S24°16' E16°14', 1490m.  
17.3.2003 leg. Göllner-Scheiding.
- Neisip** (Neisip 34) (Karas): 148 km WSW Lüderitz, S26°14' E16°34'.  
13.7.-12.9.1994 leg. Holm & Marais.
- North of Kaudom Game Reserve** (Kavango): "zwischen Kaudom und Popa", S18°17' E20°59'.  
25.2.1992 leg. Göllner-Scheiding.
- Nibuamis** (Nibuamis 37, Plot 53) (Khomas): 11 km N of Windhoek, S22°28' E17°03'.  
15.2.-20.3.1975 (DUARTE RODRIGUES 1987a).
- Nyae Nya Pan** (Otjozondjupa): Bushmanland, 17 km S of Tsumkwe, S19°45' E20°30'.  
5.1993 leg. Green.
- Oanob Dam** (Hardap): 80km S of Windhoek („Oanob Stausee“), S23°46' E17°29'.  
3.2003 leg. Göllner-Scheiding.
- Ohlsenhagen** (Omaheke): Farm area 14.5 km NNE of Gobabis, S22°19' E19°02'.  
2.1998 leg. Göllner-Scheiding.
- Ohopoho (44 km NW of)** (Ohopoho = Opuwo) (Kunene): Ohopoho, 44 km NW, Kaokoveld, S17°47' E13°41'.  
13.2.1975 leg. Endrödy-Younga (DUARTE RODRIGUES 1987b).
- Okahandja** (Otjozondjupa): 75 km N of Windhoek, S21°59' E16°55'.  
19.-29.12.1927 leg. Turner (DUARTE RODRIGUES 1982a), 2. 1928 (DRAKE 1953), 2.-4.2.1972 Okahandja Townlands, 4.-19.4.1976 (DUARTE RODRIGUES 1982e), 19.2.2004 leg. Deckert.
- Okaparakaha** (Khomas): Farm area 90 km NE Windhoek, S21°53' E17°33'.  
5.2003, 3.2004, 2.2005, 3.2006 leg. Göllner-Scheiding.
- Okarukondovi** (Otjozondjupa): Farm area, Hereroland, 137 km ENE Okahandja, S21°35' E18°10'.  
4.7.1978 (DUARTE RODRIGUES 1987b).
- Okavango River, Susuwe** (Caprivi): West Caprivi Park S17°45'37" E23°20'55".  
28.9.-2.10.1998 leg. Kirk-Spriggs.
- Omandumba** (Omandumba West) (Erongo): Farm area 41 km W of Omaruru, at the northern edge of Erongo Mountains, S21°33' E15°33'.  
20.-23.10.2002, 10.-14.3.2004, 10.-12.3.2005 leg. Göllner-Scheiding.
- Omaruru** (Erongo): S21°26' E15°56'.  
15.-17.11.1971 (DUARTE RODRIGUES 1982d), BROWN (undated, only the locality) (HESSE 1925.)

- Omatako** (Toggekry 250 = Omatako Ranch) (Otjozondjupa): Farm area 55km NNW Okahandja, S21°41' E16°44'.  
25.-27.5.2003, 5.2003, S21°33' E16°48' leg. Göllner-Scheidung.
- Omungwindi** (Kunene): 110 km W Opuwo, S17°47' E12°51'.  
4.4.1996 leg. Marais.
- Ondorusu Falls** (Kunene): 46 km W of Ruacana, Kunene, S17°24' E13°55'.  
23.-26.8.1973 (DUARTE RODRIGUES 1982d).
- Onseepkans** (South Africa, Northern Cape Province): S28°44' E19°18'.  
„Onseepkans Orange R bans“, 8.10.1972, Southern Afr. Exp., BMNH. DUARTE RODRIGUES (1989) reported this locality for South West Africa, but it is actually in South Africa.
- Oranjemund, Long Island** (Karas): S28°35' E16°27'.  
17.9.1994 leg. Marais.
- Osona** (Otjozondjupa): Farm area, 17 km SE Okahandja, S22°07' E16°50'.  
4.1989 leg. Göllner-Scheidung.
- Otavi** (Otjozondjupa): S19°39' E17°20'.  
11.1920 (DRAKE 1954), 17.-19.2.1992 leg. Göllner-Scheidung (collected in and around Otavi, S19°38' E17°21').
- Otavi Fontein** (Otjozondjupa): 5 km E of Otavi, S19°38' E17°23'.  
17.02.1992 leg. Uhlig.
- Otjiamongombe** (Otjiamongombe West 44) (Otjozondjupa): „Erichsfelde“, farm area 43 km N Okahandja, S21°36' E16°56', BIOTA Observatory of BIOTA Southern Africa.  
S21°35'52" E16°56'20", 14.4.2001 leg. Uhlig, S21°35'44.7" E16°56'17.4", 3.3.2003 leg. Frisch & Vohland, 24.5.2003 leg. Göllner-Scheidung.
- Otjinungwa** (Kunene): Kaokoland, at Kunene, S17°16' E12°26'.  
8.1973 (DUARTE RODRIGUES 1982d).
- Otjitambi** (Kunene): 34 km SE Kamanjab, S19°49' E15°10'.  
11.9.1961 (DUARTE RODRIGUES 1982d).
- Otjondeka** (Kunene): 92 km NW Kamanjab, S18°58' E14°23'.  
7.3.2003 leg. Göllner-Scheidung.
- Otjua** (Otjua 37) (Erongo): Farm area 34 km ESE Karibib, S21°11' E16°01', 1400m.  
10.1991 leg. Göllner-Scheidung.
- Otwazuma** (Kunene): 61 km NW Opuwo, S17°52' E13°19'.  
3.4.1996 leg. Marais.
- Owingi** (Owingi 246) (Omaheke): 61 km N Gobabis, S21°54' E18°52'.  
26.-28.2.1986 leg. Penrith & Irish.
- Paradies** (Paradies 136) (Khomas): Farm area near Brakwater, Windhoek, S22°24' E17°02'.  
17.3.1994, 17.3.2004, 14.-16.3.2005 leg. Göllner-Scheidung.
- Popa Falls** (Kavango): 18°07'S 21°35'E.  
26.-31.8.1971 (DUARTE RODRIGUES 1982e), 26.2.-1.3.1992, S18°07' E21°35', leg. Marais & Pusch, S18°07' E21°35' 28.2.- 3.4.1992 leg. Deckert, leg. Göllner-Scheidung, leg. Uhlig, 19.-22.1.1993 leg. Koch, 1.-5.3.1994 leg. Göllner-Scheidung.
- Regenstein** (Regenstein 32) (Khomas): Farm area SSW Windhoek, S12°34' E17°2'.  
12.12.1973 (DUARTE RODRIGUES 1982e), 15mls. SSW-Windhoek, 4.1972, 9.4.1972 (DUARTE RODRIGUES 1982).
- Richthofen** (Richthofen 126) (Khomas): Farm area, S22°34' E17°45'.  
1.-31.8.1978 leg. Louw & Penrith.
- Rooiwal** (Otjozondjupa): Farm area 29 km SSE Grootfontein, S19°51' E18°02'.  
4.1989 leg. Göllner-Scheidung.
- Ruacana, 9 km W of** (Kunene): S17°26' E14°09'.  
24.-26.2.1994 leg. Göllner-Scheidung.
- Rushoek** (Rushoek 79) (Khomas): Farm area in Brakwater, some specimens labelled "Farm Pritzen bei Brakwater", Windhoek, S22°24' E17°02'.  
17.3.2004 leg. Göllner-Scheidung.
- Seeis, 16km ESE** (Khomas): 53 km E Windhoek, S22°27' E17°35'.  
13.3.1976 leg. Rozen (DUARTE RODRIGUES 1982e).
- Spitzkoppe** (Große Spitzkoppe) (Erongo): S21°50' E15°13'.  
26.4.1998 leg. Deckert.
- Stormberg** (Karas): 3 km NNE Stormberg, S28°12' E17°14'.  
11.8.1990 leg. Roberts & Marais.
- Swakop R[iver], 3 mls S Okahandja** (Otjozondjupa): S22°02' E16°55'.  
7.4.1972 (DUARTE RODRIGUES 1982f).
- Swakopmund** (Erongo): S22°41' E14°32'.  
26.-30.1.1972 (DUARTE-RODRIGUES 1982).
- Toggekry** (Toggekry 250 = Omatako Ranch) (Otjozondjupa): Farm area 55km NNW Okahandja, S21°31' E16°44'.  
5.3.-9.3.2003 leg. Frisch & Vohland, 25.-27.5.2003 leg. Göllner-Scheidung.
- Tsumeb** (Otjozondjupa): S19°14' E17°43'.  
9.-10.3.1979 leg. Louw & Penrith (DUARTE RODRIGUES 1982b), S19°14' E17°42', "Tsumeb Camp", 1320m, 4.3.2003 leg. Göllner-Scheidung.
- Ugab River** (Kunene): Ugab R. 2 km W Brandberg Wes, S20°58'05" E14°06'36".  
23.10.1998 leg. Marais.
- Van Bach Damm** (Otjozondjupa): 5 km E Okahandja, S21°59' E16°58'.  
13.10.2002 leg. Göllner-Scheidung.



**Varianto** (Otjozondjupa): Farm area in Otavi Mountains, S19°23' E17°44'.

16.2.2004 leg. Deckert, 1.-3.3.2005 leg. Göllner-Scheidung.

**Viljoenskroon** (Viljoenskroon 507) (Hardap): 124 km SE Gochas, S25°10' E19°58'.

9.-16. 12.1998 leg. Olivier.

**Warmbad** (Kunene): 21 km E Sesfontein, S19°08' E13°49'.

2.1925 (DUARTE RODRIGUES 1987a).

**Waterberg** (Otjozondjupa): Bernabé de la Bat Rest Camp and surroundings, S20°30' E17°14'.

19.12.1993 leg. Deckert, 2.3.2003 leg. Göllner-Scheidung.

**Wildernis** (Wildernis 443) (Otjozondjupa): 141 km E Keetmannshoop, S21°00'44" E17°53'47", farm area SE Okakarara.

3.2005 leg. Göllner-Scheidung.

**Wildheim** (Wildheim Ost 384) (Karas): S26°29' E19°34'.

29.6.-7.7.1974 leg. Louw & Penrith.

**Windhoek** (Khomas): S22°30' E17°00'.

19.9.1920 (DRAKE & RUHOFF 1961),

14.3.1950 (DUARTE RODRIGUES 1989),

S22°34' E17°05', 14.2.1950 (DUARTE RODRIGUES 1989),

11.3.1976, 3 km S. of Windhoek (DUARTE RODRIGUES 1982d),

11.1991 (DUARTE RODRIGUES 1984), S22°34'

E17°05', 3.1989 leg. Göllner-Scheidung, 15.-

16.3.2004 leg. Göllner-Scheidung, S22°34'

E17°05'E, 1.-11.11.1974 (DUARTE RODRIGUES 1982b),

S21°53' E17°33', 2.-

4.3.2001, 16.-17.5.2003, 6.-7.3.2004 leg.

Göllner-Scheidung.

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