

Aus dem Forschungsinstitut Gastein Tauernregion, Badgastein, Österreich, und dem Zoologischen Institut der Universität Salzburg, Österreich

**The Hoverflies (Diptera: Syrphidae) of the Gastein Valley, Salzburg, Austria.
– A Preliminary Faunistic List as a First Step towards using of Hover-Flies as
Bio-Indicators in Alpine Ecosystems.**

(Die Schwebefliegen des Gasteiner Tales, Salzburg, Österreich. – Eine erste faunistische Erfassung und ein erster Beitrag zur Verwendung der Schwebefliegen als Bio-Indikatoren in alpinen Ökosystemen).

By Dr. John Richard HASLETT¹

1 Address for correspondence:

Dr. J. R. HASLETT
Institut für Zoologie
der Universität Salzburg
Hellbrunner Straße 34
A-5020 Salzburg, Austria

Summary

Records are listed of 56 species of Syrphidae collected from the area of the Gastein Valley. Where data permits, an indication of the present status of the species is given, based on a 3-year survey (1982–1984) by the author.

Zusammenfassung

Es werden 56 Arten von Syrphidae aus dem Bereich des Gasteinertals angeführt. Wo ausreichende Daten vorliegen, werden genauere Angaben zum aktuellen Status der Arten gemacht, basierend auf einer 3jährigen Sammeltätigkeit (1982–1984) durch den Verfasser.

Introduction

Distributional information on the hoverfly fauna of the Alps is rather sparse. The literature which does exist, is confined mainly to reports of migrational movements of only a few species (eg. Dethier & Goeldlin, 1981). In Austria, the most extensive documentation of Syrphidae was undertaken by Schiner during the

1850's and 60's. (Schiner, 1857, 1860, 1862). Since then few real attempts have been made to provide a detailed description of the fauna of any one area. The present paper lists the hoverfly species recorded from the area of the Gastein valley in the Austrian Alps, including, where data permits, habitat notes and an appraisal of the present status of the species, based on the results of a three year survey by the author.

The Gastein Valley

Situated in the Central Alps some 80 km. south of Salzburg, the Gastein valley is about 20 km. long, and runs in a broadly north-south direction. The floor of the valley ranges in altitude from 850 m to around 1000 m above sea level, while the mountains which line its sides reach up to nearly 3000 m. The region contains many relatively undisturbed areas despite severe pressures from skiing and other human activities.

Sources of records

The hoverfly records are derived from the following two sources:

1. Records assembled by the author during the years 1982–1984, mainly from the area of the Stubnerkogel and the Schloßalm mountains. Cited as 'coll. JRH'.
2. Records contained in Franz (1943), which includes references to Schiner (1857). Cited as 'H. F.'

A note on taxonomy

Identification of the adult syrphids encountered during the present survey was achieved using the keys of Sack (1930), Coe (1953) and Stubbs and Falk (1983). Additional guidance was obtained from unpublished manuscripts of MCD Speight (*Rhingia* and *Syrphus*). Nomenclature follows Cloet and Hincks (1976) and additional European species are listed as in Bothe (1983).

Unfortunately, despite this apparent wealth of literature, taxonomic difficulties still arise within some genera of the Syrphidae. *Cheilosia* is in a particularly poor state in this respect, and there is considerable confusion between many of the eighty or more European species. For this reason *Cheilosia* is rather underrepresented in the list which follows. Indeed, some species, which are included, still have a degree of uncertainty attached to their identities. Such species are indicated by a question mark in brackets before the name.

The species list

Where the information is available, the present status of each species is described. The terms used may be defined as follows:

Abundant – occurs regularly in large numbers.

Common – still found regularly in large numbers, but less so than species placed in the previous category.

Frequent – occurs in smaller numbers, but still encountered often.

Widespread – found in many areas, in a variety of different habitats.

Local – confined to certain areas, often associated with particular habitats.

A reference collection containing representatives of many of the species listed below is housed at the Research Institute Badgastein-Tauernregion.

Syrphus ribesii (Linnaeus)

1♂, 1♀ Stubnerkogel, 2100 m. 14/VII/1983 coll. JRH in Malaise trap on grassy ski-slope.

Syrphus torvus Osten-Sacken

2♂♂, 1♀ Stubnerkogel, 2000 m. 9/VIII/1983 coll. JRH S. E. facing sub alpine flowering meadow.

1♂ Schloßalm, 1950 m. 4/VIII/1984 coll. JRH on grassy ski-slope. Frequent, widespread.

Syrphus vitripennis Meigen

1♀ Stubnerkogel, 2000 m. 19/VIII/1983 coll. JRH sub-alpine flowering meadow, S. E. facing

4♀♀ Schloßalm 1950 m. 23/VIII/1984 coll. JRH Rocky, flower rich sub-alpine meadow.

H. F. Gastein coll. Giraud. (Schiner, 1857) Frequent, widespread.

Epistrophe elegans (Harris)

4♂♂, 1♀ Badgastein, 900 m. 20/VI/1984 coll. JRH. Hovering in sunshine about 2 m. above grassy meadow. Common, widespread.

Metasyrphus corollae (Fabricius)

2♂♂, 4♀♀ Stubnerkogel, 2100 m. 19/VIII/1984 coll. JRH. Visiting *Euphrasia* flowers on grassy ski-slope.

1♀ Stubnerkogel 2000 m. 1/VIII/1983 coll. JRH. Malaise trap in flower rich sub-alpine meadow.

2♂♂ Schloßalm 1950 m. 4/VIII/1984 coll. JRH on grassy ski-slope.

4♀♀ Badgastein, 900 m. 2/IX/1984 – 4/X/1984 coll. JRH. Malaise trap in meadow beside Research Institute.

Abundant, widespread.

Metasyrphus luniger (Meigen)

2♀♀ Stubnerkogel, 2050 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

2♂♂ Schloßalm, 1950 m. 23/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

Metasyrphus lapponicus (Zetterstedt)

1♂, 2♀♀ Stubnerkogel, 2050 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

3 ♂ ♂, 2 ♀ ♀ Schloßalm 1950 m. 4/VIII/1984 coll. JRH. Sub-alpine flowering meadow.
Frequent.

Scaeva pyrastris (Linnaeus)

10 ♂ ♂, 7 ♀ ♀ Stubnerkogel 2100 m. 9/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

1 ♀ Schloßalm 1900 m. 9/IX/1983 coll. JRH. On *Arnica* flower in unskied sub-alpine meadow.

3 ♀ ♀ Schloßalm 1950 m. 4/VIII/1984 coll. JRH. On grassy ski-slope.
Common, widespread.

Scaeva selenitica (Meigen)

2 ♂ ♂, 4 ♀ ♀ Stubnerkogel 2100 m. 10–15/VII/1983 coll. JRH. In Malaise trap on grassy ski slope.

2 ♂ ♂, 7 ♀ ♀ Stubnerkogel 2100 m. 9/VIII/1984 coll. JRH. Sheltered, sub-alpine flowering meadow.

1 ♂ Schloßalm 1900 m. 10/VIII/1983 coll. JRH. On *Geranium sylvaticum* flower.
Frequent, local.

Dasysyrphus lunulatus (Meigen)

1 ♀ Stubnerkogel, 2000 m. 19/VII/1983 coll. JRH. Malaise trap sub-alpine flowering meadow.

Dasysyrphus venustus (Meigen)

1 ♂ Stubnerkogel, 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

Leucozona laternarius (Müller)

H. F. (as *Ischyrosyrphus laternarius*) Gastein. coll. Giraud, (Schiner 1857).

Leucozona lucorum (Linnaeus)

1 ♀ Stubnerkogel 2050 m. 30/VII/1984 coll. JRH. Sub-alpine flowering meadow.

1 ♀ Schloßalm 1950 m. 4/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

Eriozona syrphoides (Fallen)

H. F. Gamskarkogel near Gastein coll. Rossi (Schiner, 1857 as *Syrphus oestriformis*)

Described by Schiner (1857) as “mountain species, living in sub-alpine and alpine zones. Infrequent.”

Parasyrphus lineolus (Zetterstedt)

1 ♀ Schloßalm 2000 m. 4/VIII/1984 coll. JRH. Swept short grass on ski-slope.

Parasyrphus vittiger (Zetterstedt)

- 1 ♀ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Swept short grass on ski-slope.
- Megasyrphus annulipes* (Zetterstedt)
- 1 ♀ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.
H. F. (as *Syrphus annulipes*) Gastein coll. Giraud, (Schiner, 1857).
- Meliscaeva cinctella* (Zetterstedt)
- 1 ♂ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.
- Episyrphus balteatus* (Degeer)
- 3 ♂ ♂, 1 ♀ Stubnerkogel 2100 m. 19/VIII/1983 coll. JRH. On flowers of *Crepis* sp. Grassy ski-slope.
- 5 ♂ ♂, 9 ♀ ♀ Stubnerkogel 2100 m. 30/VII/1984 coll. JRH. Sub-alpine flowering meadow.
- 5 ♂ ♂, 2 ♀ ♀ Schloßalm 2000 m. 15/VIII/1982 coll. JRH. Sub-alpine meadow in sheltered corrie basin.
- 2 ♂ ♂, 2 ♀ ♀ Badgastein 900 m. 9/VIII/1984 coll. JRH. Meadow beside Research Institute (Malaise trap).
Abundant, widespread. Migratory species, often particularly common in late summer.
- Sphaerophoria menthastri* (Linnaeus)
- 1 ♀ Schloßalm 2000 m. 4/VIII/1984 coll. JRH. On grassy ski-slope.
- 1 ♀ Badgastein 900 m. 2/IX/1984 – 4/X/1984 coll. JRH. Malaise trap in meadow beside Research Institute.
- Sphaerophoria scripta* (Linnaeus)
- 1 ♂, 2 ♀ ♀ Stubnerkogel 2000 m. 19/VIII/1983 coll. JRH. Swept grassy ski-slope.
- 4 ♂ ♂, 1 ♀ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Amongst grass, sub-alpine flowering meadow.
- 1 ♂, 3 ♀ ♀ Schloßalm 1950 m. 4/VIII/1984 coll. JRH. Grassy ski-slope.
Common, widespread.
- Chrysotoxum arcuatum* (Linnaeus)
- 1 ♂ Schloßalm 1950 m. 23/VII/1983 coll. JRH. Sheltered, richly flowering sub-alpine meadow.
- Xanthandrus comptus* (Harris)
- 1 ♂ Badgastein, 900 m. 2/IX/1984 coll. JRH. Malaise trap in meadow beside Research Institute.
- Melanostoma mellinum* (Linnaeus)
- 1 ♂ Stubnerkogel, 2000 m. 1/IX/1983 coll. JRH. Sub-alpine flowering meadow.

Melanostoma scalare (Fabricius)

1 ♂, 1 ♀ Stubnerkogel 2050 m. 24/VII/1983 coll. JRH. Sub-alpine flowering meadow. In Malaise trap.

Platycheirus albimanus (Fabricius)

1 ♂ Stubnerkogel 2050 m. 24/VII/1983 coll. JRH. Malaise trap, sub-alpine flowering meadow.

1 ♀ Stubnerkogel 2050 m. 19/VIII/1983 coll. JRH. Swept grass, sub-alpine flowering meadow.

1 ♂, 1 ♀ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

3 ♀ ♀ Schloßalm 1950 m. 4/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

1 ♀ Badgastein 900 m. 2/IX/1984 – 4/X/1984 coll. JRH. Malaise trap in grassy meadow beside Research Institute.
Frequent, local in grassland.

Platycheirus clypeatus (Meigen)

1 ♀ Stubnerkogel 2100 m. 24/VII/1983 coll. JRH. Grassy ski-slope.

1 ♀ Schloßalm 2000 m. 23/VII/1983 coll. JRH. Sheltered, richly flowering sub-alpine meadow.

1 ♀ Schloßalm 1950 m. 23/VIII/1984 coll. JRH. Swept short grass on ski-slope.

Platycheirus manicatus (Meigen)

2 ♀ ♀ Stubnerkogel 2050 m. 9/VIII/1983 coll. JRH. Subalpine flowering meadow.

Platycheirus melanopsis Loew

2 ♂ ♂, 2 ♀ ♀ Stubnerkogel 2050 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

Frequent, local. Probably confined to higher altitudes.

Platycheirus peltatus (Meigen)

3 ♀ ♀ Schloßalm 1950 m. 23/VII/1983 coll. JRH. Sheltered, flower rich sub-alpine meadow.

Platycheirus tarsalis (Schummel)

6 ♀ ♀ Stubnerkogel 2100 m. 24/VII/1983 – 2/VIII/1983 coll. JRH. Malaise trap on grassy ski-slope.

2 ♂ ♂ Stubnerkogel 2050 m. 30/VII/1984 coll. JRH. Sub-alpine flowering meadow.

1 ♀ Schloßalm 1950 m. 23/VII/1983 coll. JRH. Sheltered, flower rich sub-alpine meadow.

Frequent, local. Probably confined to higher altitudes.

(?) *Cheilosia gigantea* Zetterstedt

2 ♂ ♂ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

Syrphocheilosia claviventris (Strobl)

8 ♂♂, 2 ♀♀ Stubnerkogel 2100 m. 9/VIII/1984 coll. JRH. Visiting flowers of *Potentilla erecta* on grassy ski-slope.

Common. local.

(?) *Cheilosia insignis* Loew

3 ♀♀ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

(?) *Cheilosia melanura* Becker

2 ♀♀ Stubnerkogel 2100 m. 3/VIII/1984 coll. JRH. Sub-alpine flowering meadow.

Cheilosia montana Egger

7 ♂♂ Stubnerkogel 2100 m. 30/VII/1984 coll. JRH. Grassy ski-slope.

2 ♂♂ 1 ♀ Schloßalm 1950 m. 23/VII/1983 coll. JRH. Sub-alpine flowering meadow.

Common. local.

Cheilosia melanopa (Zetterstadt)

1 ♂, 2 ♀♀ Stubnerkogel 2050 m. 30/VII/1984 coll. JRH. Sub-alpine flowering meadow.

Rhingia campestris, Meigen

2 ♂♂, 1 ♀ Stubnerkogel middle station 1750 m. 26/VI/1982 coll. JRH. On flowers of *Geum rivale* in damp meadow just above tree line.

10 ♀♀ Schloßalm 1950 m. 23/VII/1983 coll. JRH. On flowers of *Geranium sylvestris* and *Rhododendron ferrugineum* in sheltered sub-alpine meadow.

Common, widespread. Generally visits blue or red flowers.

Rhingia austriaca Meigen (cf *R-rostrata* Linnaeus)

1 ♀ Kotschachtal, Grüner Baum 1100 m. 20/VI/1983 coll. JRH. Damp meadow amongst *Alnus* scrub.

Brachyopa testacea (Panzer)

H. F. (as *B. conica*) Gastein. 3 specimens coll. Giraud. (Schiner, 1857)

Neoascia podagrica (Fabricius)

3 ♂♂, 2 ♀♀ Badgastein 900 m. 26/VI/1982 coll. JRH. Swept shaded grassy bank beside path near Research Institute.

Frequent local in shady places.

Volucella bombylans (Linnaeus)

1 ♂ Schloßalm 1950 m. 23/VII/1983 coll. JRH. Sheltered, flower rich sub-alpine meadow.

Sericomyia lappona (Linnaeus)

1 ♂ Stubnerkogel 2100 m. 14/VII/1983 coll. JRH. Malaise trap. Sub-alpine flowering meadow.

H. F. (as *Cinxia lappona*) Gastein coll. Giraud, (Schiner 1857).

Sericomyia silentis (Harris)

1 ♂ Stubnerkogel 2050 m. 9/VIII/1984. coll. JRH. Sub-alpine flowering meadow.

Arctophila fulva (Harris)

1 ♀ Stubnerkogel 2100 m. 1/IX/1983 coll. JRH. Sub-alpine flowering meadow.

Xylota ignava (Panzer)

H. F. (as *Zelima ignava*) Gastein coll. Giraud, (Schiner, 1857).

Xylota triangularis (Zetterstedt)

H. F. (as *Zelima triangularis*) Gastein coll. Giraud, (Schiner 1857). Also from Holdhaus, 1912, described by him as a 'boreoalpine-species'.

Pocota personata (Harris)

6 ♀ ♀ Stubnerkogel ridge 2450 m. 30/VII/1984 coll. JRH. Sitting on sunny exposed rocks on mountain top.

Blera fallax (Linnaeus)

H. F. (as *Cynorrhina fallax*) Gastein coll. Giraud, (Schiner, 1857).

Temnostoma apiforme (Fabricius)

H. F. Gastein coll. Giraud, (Schiner, 1857).

Temnostoma vespiforme (Linnaeus)

H. F. Gastein coll. Giraud (Schiner, 1857).

Helophilus parallelus (Harris)

1 ♀ Stubnerkogel 2100 m. 1/IX/1983 coll. JRH. on flower of *Knautia dipsacifolia*, sub-alpine meadow.

Eristalis cryptarum (Fabricius)

H. F. Gastein coll. Giraud, (Schiner 1857).

Eristalis pertinax (Scopoli)

2 ♂ ♂ Stubnerkogel 2150 m. 24/VII/1983 coll. JRH. Hovering c. 2 m. above grassy ski-slope.

Eristalis rupium Fabricius

1 ♂, 2 ♀ ♀ Schloßalm 1950 m. 26/VIII/1983 coll. JRH. Sub-alpine flowering meadow.

Eristalis tenax (Linnaeus)

11 ♂ ♂, 5 ♀ ♀ Stubnerkogel 2100 m. 1/IX/1983 coll. JRH. On flowers of *Knautia dipsacifolia*, sub-alpine meadow.

1 ♂, 2 ♀ ♀ Schloßalm 2000 m. 10/VIII/1983 coll. JRH. On flowers of *Arnica montana*, sheltered sub-alpine meadow.

2 ♀ ♀ Badgastein, 900 m. 2/IX/1984–4/X/1984 coll. JRH. Malaise trap in meadow beside Research Institute.

9♂♂, 7♀♀ Bad Hofgastein 850 m. 4/X/1983 coll. JRH. On sunny leaves of shrubs at road side.

Abundant. Widespread, particularly in late summer/autumn.

Acknowledgements

The work was financed by a Royal Society European Science Exchange Fellowship at the University of Salzburg. For this I am very grateful. In addition I acknowledge the support of the Austrian Academy of Science, the Austrian Ministry of Science and Research and ,Project No. 8' of the Research Institute Gastein-Tauern region.

References

- BOTHE, G., 1983. Schwebfliegen. Deutscher Jugendbund für Naturbeobachtung. Hamburg.
- COE, R. L., 1953. Handbooks for the identification of British Insects. X Part 1. Diptera: Syrphidae. Royal Entomological Society of London.
- DETHIER, M. & COELDIN, P., 1981. Les Syrphidae des pelouses alpines au parc national suisse. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 54, 65–77.
- FRANZ, H., 1943. Die Landtierwelt der mittleren Hohen Tauern. Akademie der Wissenschaften, Wien. Denkschriften 107. Band. Springer-Verlag, Wien.
- HOLDHAUS, K., 1912. Kritisches Verzeichnis der borealpinen Tierformen (Glazialrelikte) der mittel- und südeuropäischen Hochgebirge. Ann. nat. Hofmus. Wien 26, 398–440.
- KLOET, G. S. & HINCKS, W. D., 1976. A checklist of British Insects (Second Edition). Part 5: Diptera and Siphonaptera. Royal Entomological Society of London.
- SACK, P., 1930. Syrphidae. In: Dahl (ed.): Die Tierwelt Deutschlands. 20. Teil. Zweiflügler oder Diptera. IV. Syrphidae-Conopidae.
- SCHINER, J. R., 1857. Diptera austriaca III. Die österreichischen Syrphiden. Verhandl. d. Zool.-bot. Ges. Wien, Bd. VII.
- SCHINER, J. R., 1860. Wien. Entom. Monatsschr. Band II.
- SCHINER, J. R., 1862. Fauna austriaca. Die Fliegen, Band I.
- STUBBS, A. E. & FALK, S., 1983. British Hoverflies: an Illustrated Identification Guide. British Entomological and Natural History Society, London.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Berichte der Naturwissenschaftlich-Medizinischen Vereinigung in Salzburg](#)

Jahr/Year: 1986

Band/Volume: [8](#)

Autor(en)/Author(s): Haslett John R.

Artikel/Article: [Die Schwebefliegen des Gasteiner Tales, Salzburg, Österreich. - Eine erste faunistische Erfassung und ein erster Beitrag zur Verwendung der Schwebefliegen als Bio-Indikatoren in alpinen Ökosystemen. 77-85](#)