SHORT COMMUNICATION

D.I. Gritskevich. HOVER-FLIES (DIPTERA: SYRPHIDAE) IN ANTHOPHILOUS COMPLEXES OF PLANTS OF MYAOCHAN RANGE, KHABAROVSKII KRAI. - Far Eastern Entomologist. 1998. N 65: 10-14.

Д.И. Грицкевич. Мухи-журчалки (Diptera: Syrphidae) в антофильных комплексах растений хребта Мяочан, Хабаровский край. // Дальневосточный энтомолог. 1998. N 65. С. 10-14.

Two hundred four species in 52 genera of hover-flies are known from Myaochan Range (Khabarovskii krai) [5]. There are four phenological groups of syrphids in Lower Amur region [4]. There is a strict dependence of hover-flies species composition belonging to anthophilous complex of plants from their blossoming.

The material was collected during 1994-1996 using a standard entomological net. The degree of difference of anthophilous complexes was studied by means of the method of multidimensional scaling (degree of difference - euclidean distances) [6]. Multidimensional scaling allows to present a sharing of the objects in the coordinate space with the small quantity of dimensions graphically.

One hundred five species of hover-flies visit seven most abundant plants (Table 1). Anthophilous complexes of plants of Myaochan Range forms three well isolated groups (Fig. 1). The first one includes plants with peak of blossoming in the middle of June (*Rhododendron*

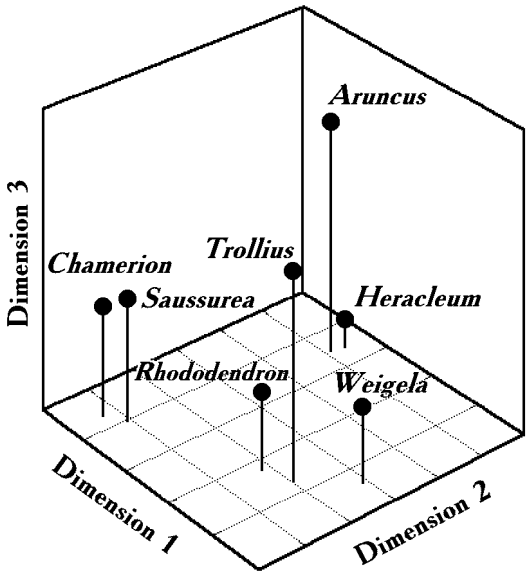

Fig.1. Position of the anthophilous complexes of plants in the reduced space of the three coordinates, based on the scaling of matrix euclidean distances.

Table 1.

Syrphids in anthophilous complexes of plants (I - *Weigela middendorffiana*; II - *Rhododendron aureum*; III - *Trollius riederanus*; IV - *Aruncus asiaticus*; V - *Heracleum moellendorffii*; VI - *Chamerion angustifolium*; VII - *Saussurea dubia*) in Myaochan Range

Species	Plants (share of syrphids, %)						
	I	II	III	IV	V	VI	VII
Blera eoa (Stack.)	-	0.26	-	-	-	-	-
B. judini Bark.	-	0.26	-	-	-	-	-
Brachyopa dorsata Ztt.	-	-	0.60	-	-	-	-
B. vittata Ztt.	-	-	-	0.64	-	-	-
Callicera aenea (F.)	-	0.26	-	-	-	-	-
Chalcosyrphus nitidus (Portsch.)	-	-	0.20	-	-	-	-
Ch. rufipes (Lw.)	-	-	-	0.64	-	-	-
Ch. tuberculifemur (Stack.)	-	0.26	0.20	-	-	-	-
Cheilosia impressa Lw.	-	-	-	2.55	5.45	-	-
Ch. longula (Ztt.)	-	1.32	0.99	-	0.71	8.33	2.56
Ch. motodomariensis Mats.	-	-	-	-	8.53	-	-
Ch. pagana (Mg.)	-	-	1.79	-	-	-	-
Ch. pallipes Lw.	3.82	11.61	10.12	1.91	0.95	-	-
Ch. primoriensis Bark.	-	-	0.79	-	-	-	-
Ch. reniformis (Hellen)	-	-	0.60	-	-	-	-
Ch. scutellata (Fallen)	-	-	0.20	-	0.47	-	-
Ch. sichotana (Stack.)	-	-	11.71	-	-	-	-
Ch. velutina Lw.	-	-	-	-	0.24	2.78	-
Chrysotoxum fasciatum (Mull.)	1.53	0.26	-	-	-	-	-
Ch. fasciolatum (DeGeeer)	-	0.26	-	-	-	-	-
Ch. sapporense Mats.	-	-	-	-	0.24	-	-
Criorhina aino (Stack.)	0.76	1.06	-	-	-	-	-
C. brevipila Lw.	3.82	0.26	-	-	0.24	-	-
C. ussuriana (Stack.)	-	0.53	-	-	-	-	-
Dasysyrphus bilineatus (Mats.)	-	-	0.20	-	-	5.56	2.56
D. lunulatus (Mg.)	0.76	0.26	0.20	-	-	-	-
D. nigricornis (Verr.)	0.76	-	-	-	-	-	-
D. tricinctus (Fallen)	-	0.53	-	-	-	-	-
D. venustus Mg.	-	0.79	-	-	-	-	-
D. zinchencoi Mut. et Bark.	0.76	1.06	0.20	-	-	-	-
Didea alneti (Fallen)	1.53	0.53	0.79	-	-	-	-
D. fasciata (Mcq.)	-	-	-	-	-	-	2.56
Epistrophe grossulariae (Mg.)	1.53	0.26	-	0.64	0.47	-	-
Episyrphus balteatus (DeGeer)	1.53	1.85	1.59	-	0.24	2.78	5.13
Eriozona (Megasyrphus) erratica (L.)	3.05	1.06	0.20	0.64	0.24	-	-
E. syrphoides (Fallen)	-	0.26	-	-	0.24	-	-
Eristalis alpina (Pz.)	-	-	0.40	0.64	0.95	-	-
E. cerialis F.	-	0.26	-	-	-	-	-

Table 1 (continued)

Species	Plants (share of syrphids, %)						
	I	II	III	IV	V	VI	VII
E. interrupta (Poda)	-	0.53	0.79	-	0.47	-	-
E. rabida Viol.	-	-	-	0.64	1.66	-	-
E. rossica Stack.	1.53	0.53	0.40	1.27	1.66	-	-
E. rupium F.	-	-	-	-	0.71	-	-
E. vitripennis Strobl	-	0.26	0.40	2.55	0.71	-	-
Eupeodes(Lapposyrphus) lapponicus (Ztt.)	1.53	5.54	6.15	1.27	-	8.33	5.13
E. latilunulatus (Collin)	-	-	-	0.64	-	-	-
E. lundbecki (Soot-Ryen)	-	-	0.20	0.64	-	-	-
E. luniger (Mg.)	-	-	0.20	-	-	-	-
E. nitens (Ztt.)	-	-	0.20	-	-	-	-
Helophilus affinis Wahlb.	-	-	-	0.64	-	-	-
Lejota korsakovi (Stack.)	0.76	-	0.20	-	-	-	-
Leucozona (Ischyrosyrphus) glaucius (L.)	2.29	0.26	0.60	5.10	15.88	-	-
L. (I.) laternarius (Mull.)	-	-	-	-	1.42	-	-
L. lucorum (L.)	1.53	0.53	-	2.55	0.95	-	1.28
Melangyna barbifrons (Fallen)	-	0.26	-	-	-	-	-
M. coei Niel.	-	-	1.19	-	-	-	-
M. compositarum (Verr.)	4.58	0.79	0.60	20.38	40.05	-	-
M. lasiophthalma (Ztt.)	-	-	0.40	-	-	-	-
M. motodomariensis (Mats.)	-	1.06	3.57	-	-	5.56	8.97
M. quadrimaculata (Verr.)	-	0.26	-	-	-	-	-
Melanostoma boreomontanum Mut.	0.76	0.79	1.19	-	-	-	-
M. mellinum (L.)	0.76	2.11	2.78	-	-	-	-
M. scalare (F.)	1.53	0.79	1.19	-	0.24	2.78	-
Meliscaeva cinctella (Ztt.)	12.21	4.22	1.79	1.27	0.47	-	-
Neocnemodon vitripennis (Mg.)	6.11	0.53	1.19	2.55	0.24	-	-
Orthonevra stackelbergi Thomp.et T.-Ped.	-	-	-	0.64	0.24	-	-
Parasyrphus annulatus (Ztt.)	3.82	7.12	12.50	3.82	1.18	-	-
P. lineolus (Ztt.)	0.76	3.69	7.14	1.27	-	2.78	10.26
P. macularis (Ztt.)	3.05	2.64	-	-	-	-	-
P. malinellus (Collin)	0.76	0.26	-	-	-	-	-
P. nigritarsis (Ztt.)	-	0.53	-	-	-	-	-
P. punctulatus (Verr.)	-	0.79	0.60	-	-	-	-
P. tarsatus (Ztt.)	0.76	2.37	0.60	-	-	-	-
Pipiza bimaculata Mg.	2.29	0.53	0.60	-	-	-	-
P. quadrimaculata (Pz.)	3.82	1.32	0.99	1.27	-	-	-
P. signata Mg.	-	-	0.20	-	-	-	-
Platycheirus albimanus (F.)	-	0.26	1.39	-	-	-	-
P. angustatus (Ztt.)	-	1.06	-	-	-	2.78	-
P. clypeatus (Mg.)	-	-	0.60	-	-	-	-
P. coerulescens Will.	-	-	-	-	0.24	-	-
P. complicatus (Beck.)	-	0.53	0.20	-	-	-	-
P. europaeus Goeld.Maib.et Speig	-	-	0.20	-	-	-	-

Table 1 (continued)

Species	Plants (share of syrphids, %)						
	I	II	III	IV	V	VI	VII
P. peltatus (Mg.)	0.76	0.53	1.98	0.64	-	2.78	-
P. scutatus (Mg.)	-	-	-	0.64	-	-	-
P. urakawensis (Mats.)	-	-	-	0.64	-	5.56	-
Pseudopocota stackelbergi (Viol.)	2.29	0.26	-	-	-	-	-
Scaeva komabensis (Mats.)	-	0.26	-	-	-	-	-
Sericomyia lappona (L.)	0.76	-	0.20	1.91	0.95	2.78	-
Sphaerophoria chongjini Bank.	-	-	-	-	0.24	-	-
Sphegina (Asiosphegina) sibirica Stack.	-	-	0.20	31.85	3.79	2.78	1.28
Spheginoides obscurus Szil.	-	-	0.20	-	-	-	-
Syrphus ribesii (L.)	10.69	5.28	5.16	3.18	1.42	5.56	2.56
Syrphus sp.	-	-	0.20	-	-	-	-
S. torvus O.-S.	4.58	15.04	7.94	0.64	1.90	27.78	53.85
S. vitripennis Mg.	6.87	8.18	1.79	1.27	1.66	11.11	3.85
Temnostoma apiforme (F.)	0.76	0.26	-	1.27	2.37	-	-
T. vespiforme (L.)	-	0.53	0.20	1.27	0.95	-	-
Volucella bombylans (L.)	-	0.26	-	1.91	0.71	-	-
Xanthandrus comtus (Harr.)	0.76	-	-	-	-	-	-
Xylota atricoloris Mut.	-	1.58	0.20	-	-	-	-
X. coeruleiventris (Ztt.)	3.05	0.53	0.79	-	-	-	-
X. coquilletti H.-B.	-	-	0.20	-	-	-	-
X. ignava (Pz.)	-	4.49	1.98	-	0.24	-	-
X. pseudoignava Mut.	-	-	-	0.64	0.47	-	-
X. sibirica Lw.	0.76	-	-	-	0.24	-	-
X. silvicola Mut.	-	-	0.20	-	-	-	-
Nubmer of species	39	60	60	35	40	16	12

aureum, Trollius riederanus, Weigela middendorffiana), the second group - in July (*Heracleum moellendorffii, Aruncus asiaticus*), in the third one - in the middle and end of August (*Chamerion angustifolium, Saussurea dubia*).

Early-summer phenological group of hover-flies mainly visit the plants which are blossoming in June [4]. Anthophilous complexes of *Rhododendron aureum* and *Trollius riederanus* are most similar because of abundance of pollinophagous hover-flies from genera *Syrphus*, *Parasyrphus*, *Platycheirus*, *Cheilosia* [3]. Syrphids of these genera visit an opened actinomorphous, rich of pollen flowers. A complex of *Weigela middendorffiana* has more differences from previous ones. There are many large nectarophagous syrphids (*Criorhina, Pseudopocota, Eriozona, Didea*) among visitors of *Weigela* flowers with tubular corolla. The larvae of some nectarophagous dendrobionts syrphids are saproxylophagous [2], for example *Criorhina, Mallota, Temnostoma, Chalcosyrphus*.

There are a lot of species of hover-flies from the late-summer phenological group (*Cheilosia motodomariensis*, *Ch. impressa*, *Ch. velutina*, *Melangyna compositarum*, *M. motodomariensis*) in anthophilous complexes of flowering in July plants (*Heracleum moellendorffii, Aruncus asiaticus*). *Cheilosia motodomariensis*, *Ch. impressa* and *Leucozona glaucius* are feeding mainly on *H. moellendorffii* [1]. These syrphids are rare on *A.*

asiaticus. The dominant species on *A. asiaticus* is *Sphegina sibirica* (31,8%). Therefore distinct differences in anthophilous complexes of *H. moellendorffii* and *A. asiaticus* are observed (Fig. 1).

In anthophilous complexes of flowering in August plants the hover-flies are not numerous. Almost all these syrphids are dominants on the Myaochan Range during the summer season (*Syrphus torvus*, *Eupeodes lapponicus*, *Parasyrphus lineolus*, *P. annulatus*, *Platycheirus albimanus*, *Cheilosia longula*). Therefore the similarity of anthophilous complexes of *Chamerion* and *Saussurea* is the highest (Fig. 1).

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