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CONTRIBUTION TO THE KNOWLEDGE OF ARACHNO- AND ENTOMOFAUNA OF DIFFERENT WOODHABITATS

Part III

Araneida: Erigoninae*

by J.-P. MAELFAIT** and L. BAERT***

Introduction

In previous parts we gave a theoretical investigation of the pitfall method and a description of the sampled habitats (MAELFAIT & BAERT, 1975) and the results for the Coleoptera (BAERT & MAELFAIT, 1977). This part will deal with the autecological results (i.e. phenology and habitat preference) of the captured species of the Erigoninae. We have followed the nomenclature of «British Spiders, part III» (LOCKET & MILLIDGE, 1974).

Results

1) *Ceratinella brevipes* (WESTRING)

- Our only capture of this species fell in the same period TRETZEL (1954) (VI: 1 male) and MERRETT (1968) (6 males from March to June, 4 females from June to August) also stated it in pitfalls.
- Following BRAUN & RABELER (1969) the habitat of this species is the soil of open landscape (wet meadows and heath).

* Déposé le 2 février 1977.

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Yet, our capture in a forest does not prove that *C. brevipes* also occurs in forests as a species; more likely is that, in periods of great activity, adult stages of this open-landscape-species may turn up in forests now and then.

2) *Ceratinella brevis* (WIDER)

— The males were caught in Gontrode in a period (May), mentioned by TRETZEL (1954) and VON BROEN & MORITZ (1963) as having the greatest male-activity. It seems thus that in our country May is also the period in which most *C. brevis* copulations occur.

— This species, living in forests in the lower lying parts of its range, was besides in Gontrode forest, also captured by JOCQUE (1973) in Hutsepot coppiced woodland, but not by BOSMANS (1973) in Hutsepot Beech forest.

3) *Ceratinella scabrosa* (O.P. CAMBRIDGE)

— The two males were captured in a period in which some males were also caught by VON BROEN & MORITZ (1963) (June: one male) and MERRETT (1968) (between half May and half June: two males). This agrees with the maturity period mentioned by WIEHLE (1960): May-June.

— *C. scabrosa* is indicated by WIEHLE (1960) as a species of the litter of moist deciduous forests. This agrees with the captures in Gontrode (1972-1973) and in the coppiced woodland of JOCQUE (1973) and the absence of captures in Beech forest (JOCQUE, 1973 and BOSMANS, 1973).

4) *Dicymbium tibiale* (BLACKWALL)

— One male of this species was caught in July, the month in which TRETZEL (1954) stated the peak in an activity-period of males from April to August.

— *D. tibiale* is a species of forests, which does not prosper very well in the Gontrode type of forest; following WIEHLE (1960) it prefers shadowy moist forests (TRETZEL 1954: alder-brake).

5) *Diplocephalus cristatus* (BLACKWALL)

— One male was caught in Gontrode between 7 July and 20 July. WILLIAMS (1962) also caught one specimen in July (sex not mentioned); TRETZEL (1954) stated male as well as female activity in May, November and December.

Most authors pretend that mature stages might be found during the whole year (WIEHLE, 1960).

— Biotope: on the soil, amidst grass and herbs of open landscape. Hence probably an « accidental guest » in our forest.

6) *Diplocephalus permixtus* (O.P. CAMBRIDGE)

— As mentioned in BRAUN & RABELER (1969) and in LOCKETT & MILLIDGE (1953) adults might be found the whole year through. From the pitfall-results of MERRETT (1969), HOET (1972) and ours, this species shows a strong activity-increase in spring.

7) *Diplocephalus picinus* (BLACKWALL)

— Maximum activity of males in May and first days of June. This conforms to the pitfall-observations of TRETZEL (1954), WILLIAMS (1962), VON BROEN & MORITZ (1963), MERRETT (1969), HOET (1972), BOSMANS (1973) and JOCQUE (1973).

— There is a significant difference between the numbers in the captures from Gontrode forest (G.I.: 33 males, 13 females; G II.: 63 males, 7 females) and those from Hutsepot forest (also 6 pitfalls: 12 males, no females). The captures were carried through in the same period, so we may conclude that *D. picinus* has an abundance which differs strongly in the two types of forest.

8) *Erigone atra* (BLACKWALL); *Erigone dentipalpis* (WIDER)

— Of these spider species HOET (1972) caught from 16 February till 30 August in a grassland next to B H:

Erigone atra: 438 males, 40 females

Erigone dentipalpis: 47 males, 3 females

In the same period HOET (1972) caught in B H:

TABLE 1 — Numbers of ♀♀/♂♂ caught per period (columns) on a ridge (G I) and in a drain (G II) of a wood (Gontrode) during 1972/1973

	29.IV/12.V.72	12.V/26.V.72	26.V/9.VI.72	9.IV/23.VI.72	23.VI/7.VII.72	7.VII/20.VII.72	20.VII/4.VIII.72	4.VIII/18.VIII.72	18.VIII/1.IX.72	1.IX/15.IX.72	15.IX/29.IX.72	29.IX/13.X.72	13.X/27.X.72	27.X/10.XI.72	10.XI/24.XI.72	24.XI/8.XII.72	8.XII/22.XII.72	22.XII.72/5.I.73	5.I/18.I.73	18.I/1.II.73	1.II/15.II.73	15.II/2.III.73	2.III/16.III.73	16.III/29.III.73	29.III/13.IV.73	13.IV/26.IV.73		
ERIGONINAE																												
<i>Ceratinella brevipennis</i>																												
<i>Ceratinella brevis</i>	2/																											
<i>Ceratinella scabrosa</i>			1/	1/																								
<i>Dicymbium tibiale</i>						1/																						
<i>Diplocephalus cristatus</i>						1/																						
<i>Diplocephalus permixtus</i>																					1/							
<i>Diplocephalus picinus</i>	12/5	10/1	/1	7/2	2/2	1/	1/	/2																				
<i>Erigone atra</i>																												
<i>Erigone dentipalpis</i>							1/																					
<i>Erigonidium graminicola</i>	1/									1/																		
<i>Gonatium rubellum</i>																												
<i>Gongylidellum vivum</i>				1/																								
<i>Gongylidium rufipes</i>				1/	1/	2/			/1				/1															
<i>Maso sundevalli</i>	1/	/1	1/		4/	9/	1/					/1																
<i>Micargus herbigradus</i>				1/1	1/	3/																						
<i>Monocephalus fuscipes</i>	/1																											
<i>Oedothorax retusus</i>						/3																						
<i>Oedothorax tuberosus</i>	2/				1/	3/																						
<i>Pocadicnemis pumila</i>					1/																							
<i>Walckenaera fuscillata</i>					1/	2/		/1																				
<i>Walckenaera nudipalpis</i>																												
<i>Walckenaera obtusa</i>																				1/								2/
<i>Walckenaera acuminata</i>				/1		/1	/1						/2	2/	4/1	1/	8/	11/1	14/	8/	6/3	3/2	1/	/1	2/		2/	
<i>Walckenaera cucullata</i>	/3	/2	/1	/1	/2	/1	/1			1/1			2/	3/	2/3	8/	13/	14/	10/1	8/3	2/1	1/	4/	1/	2/	/2	3/	

Erigone atra : 2 males, no females

Erigone dentipalpis : 0.

In Gontrode 1972-1973, in Hutsepot 1972-1973 (BOSMANS, 1973) in Beech forest (JOCQUE, 1973), Beech forest 1971-1972 (JOCQUE, 1973), in coppiced woodland 1970-1971 (JOCQUE, 1973), *E. atra* as well as *E. dentipalpis* were caught in small numbers.

Thus *E. atra* and *E. dentipalpis* :

— occur in the same habitat (open landscape) (spatial conformity)

— have : the same period of activity (for both changing accordingly the different locality : MERRETT, 1969 ; their peak activity in the same period (temporal conformity).

The pitfall captures of TRETZEL (1954), MERRETT (1969), PEARSON & WHITE (1964) lead to the same conclusions which makes TRETZEL's suggestion that we deal with 2 components of one polymorphic species, very likely. These open-landscape types are good aeronauts hence it is not so amazing that they are often found outside their habitat (in forest).

9) *Erigonidium graminicola* (SUNDEVALL)

— HOET (1972) caught in BH 2 females in April, 2 males in February, and 1 male in May, of this species. TRETZEL (1954) : males in January, March, August and October, females in January, March, August, November and October.

This spider of herb- and bushlayer in forests, is probably found on the soil at any moment of the year. We think it rather risky to determine its copulation time with the aid of pitfall distributions. But the above facts show that adult stages probably occur the whole year through (cf LOCKET & MILLIDGE, 1953 : « Adults in early summer »).

10) *Gonatium rubellum* (BLACKWALL)

— MERRETT (1969) and VON BROEN & MORITZ (1963) caught more females of this species, resp. 2 males, 10 females ; 13 males, 24 females. HOET (1972) stated the same phenomenon

in Gontrode (1972-1973) and so did JOCQUE (1973). The males were caught in November, December, i.e. during the period of activity, stated by MERRETT (1969) and VON BROEN & MORITZ (1963) (September to December).

— In the sampled microhabitat of Hutsepot (BOSMANS, 1973) only one male was caught. Probably an accidental guest from another forest microhabitat.

11) *Gongylidiellum vivum* (O.P. CAMBRIDGE)

— HOET (1973) captured 152 males and 3 females in the meadow. MERRETT (1969) stated the same captured distribution : males are active the largest part of the year, with a top from half May till half July.

— The males caught in Gontrode (1972-1973) are thus representants of a strong activity increase in this meadow species.

12) *Congylidium rufipes* (SUNDEVALL)

— The males were captured in May, June in Hutsepot and Aalmoezeneie-forest ; TRETZEL (1954) and VON BROEN & MORITZ (1963) mentioned this period as having the biggest male-activity. Afterwards especially the females are active.

— *G. rufipes* lives on bush and undergrowth (LOCKET & MILLIDGE, 1953). Hence this species was caught only once in 1972-1973 in Hutsepot (BOSMANS, 1973).

13) *Maso sundevalli* (WESTRING)

— HOET (1972) and BOSMANS (1973) only caught males in June-July and the Gontrode (1972-1973) captures showed the same results. VON BROEN & MORITZ (1963) also stated male activity only in these months, with a top at the end of June (here end of June, beginning of July). TRETZEL (1954) found the same peak but with an activity from February to July.

The variation in the relative availability of males and females in this species is remarkable : TRETZEL (1954), 17, 28 ; VON BROEN & MORITZ (1963) : 13, 9 ; HOET (1972-1973) : 14, 1 ; Gontrode 1972-1973 : 21, 0 ; BOSMANS (1973) ; 1, 0 (males, females).

— Our results suggest that this forest species (BRAUN & RABELER, 1969) prefers the Gontrode forest-type to the Hutsepot one.

14) *Micrargus herbigradus* (BLACKWALL)

— TRETZEL (1954) (41 males, 31 females) caught males and females from April to August, as well as in November-December. VON BROEN & MORITZ (1964) (20 males, 8 females) only in the first period. In Gontrode most males were caught in June-July (as did TRETZEL, 1954). BOSMANS (1973) caught one male at the end of December, JOCQUE (1973): 3 males in October; this shows that here also this species can become active in winter.

15) *Monocephalus fuscipes* (BLACKWALL)

— Our capture of this species falls in a period in which HOET (1972-meadow), HOET (1972-forest) also caught one or more specimen (BOSMANS, 1973).

This agrees with PEARSON & WHITE (1963) and WILLIAMS (1962) as well as with the main activity period found by JOCQUE (1973) (with a much bigger total capture this author also found another activity from October till January).

— The few specimen caught during the main activity period in the higher mentioned forest-microhabitats, can be considered as accidental guests from forest microhabitats like the coppiced woodland of JOCQUE (1973).

16) *Oedothorax retusus* (WESTRING)

— During a capture period from 16 February till 30 August HOET (1972) captured in a meadow a great number of individuals belonging to this species i.e. 322 males, 434 females. May, June and July were the months of greatest activity. This agrees with TRETZEL (1954).

— In the forest sampled by HOET (1972), in Gontrode 1972-1973, as well as in Hutsepot forest 1972-1973 (BOSMANS, 1973) only a few specimen of this species were caught.

These individuals are to be considered as coming from other habitats in a peak activity period.

17) *Oedothorax tuberosus* (BLACKWALL)

— HOET (1972) recorded in the meadow a male activity from half March of half June (16 males) with a peak in May.

VON BROEN & MORITZ (1963) caught 4 males in May, June.

— The captures in the forest by HOET (1972) (May: 1 male) and in Gontrode (1972-1973) are thus to be considered as resulting from emigration of the meadow species in a period of great activity.

18) *Pocadicnemis pumila* (BLACKWALL)

— MERRETT (1969), TRETZEL (1954), VON BROEN & MORITZ (1963) found a peak activity of the species in June.

HOET (1972) caught in this period 4 males in the meadow.

— The male caught in Gontrode (1972-1973) (also in the same period) probably was an accidental guest from another habitat.

19) *Walckenaera furcillata* (MENGE)

— Following LOCKET & MILLIDGE (1953) adults occur in April-July. Our captured males (end of June-July) fall in this period. In August an active female was recorded. TRETZEL (1954) found an active male in August. We do not know of other data.

— LOCKET & MILLIDGE (1953): Usually in heath, also on moss and grass. Hence our captures are probably accidental guests from open habitats.

20) *Walckenaera nudipalpis* (WESTRING)

— Maximum activity in the first part of January found by VON BROEN & MORITZ (1963); MERRETT (1969): end of January-first part of February.

The few males were also caught in winter by HOET (1972) (meadow: 1 male) and in Gontrode 1972-1973.

— The two males were caught in the drain, agreeing with the habitat given by LOCKET & MILLIDGE (1953) « Frequent in wet moss and detritus ».

21) *Walckenaere obtusa* (BLACKWALL)

- The 3 males were captured in March-April, period of maximum activity, recorded by HOET (1972) (29 males, 7 females). This agrees with TRETZEL (1953); VON BROEN & MORITZ (1963) record a maximum activity over a month later.
- The microhabitats of Gondrode forest sampled in 1972-1973 probably do not belong to the biotope of *W. obtusa*. This species does not occur in the microhabitat of Hutsepot forest sampled in 1972-1973 (BOSMANS, 1973); this is affirmed by VON BROEN (1962) « ... besiedelt die trockeneren Biotope ».

22) *Walckenaera acuminata* (BLACKWALL)

- In the surroundings of Ghent we find: a female activity through the year and a male activity from November till the end of March. The maximum male activity varies (dependent on Year, Locality).
 - HOET (1972) forest: February.
 - 1972-1973 (Gontrode and Hutsepot): January (influence of soft winter?).
 - TRETZEL (1954): February.
 - VON BROEN & MORITZ (1963) and MERRETT (1969): December.

- Following our results this species is more abundant in Gontrode forest than in Hutsepot.

23) *Walckenaera cucullata* (C.L. KOCH)

- A male activity was recorded from March to the end of June, with a peak in April, agreeing with MERRETT (1969), VON BROEN & MORITZ (1963), TRETZEL (1954).
 - TRETZEL (1954) (with bigger total capture (13 males, 20 females) mentioned also a period of lesser activity before winter; HOET (1972) — Forest and BOSMANS (1973) also caught some males in the period of maximum activity (resp. 3 males, 2 females).
- The few males caught by HOET (1972) and BOSMANS (1973) are to be considered as accidental guests from forest microhabitats like those of Gontrode 1972-1973.

Conclusions

— The pitfall capture data of the considered Erigoninae species, as they have been stated by different authors, in different years, for different localities, are very concordant for the period of the year in which individuals are captured and for the period in which greatest captures are made. So we may conclude that the availability distribution of a species as obtained by pitfall captures (see MAELFAIT & BAERT, 1975) is strongly influenced by phenomena typical for the species (reproduction phenomena).

— If only a few specimens of a species are caught, we can usually interpret them as immigrants from another habitat where this species is strongly active.

Acknowledgments

We wish to thank R. Jocqué for the introduction he gave us in the study of Araneida.

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CROSSOCERUS ASIATIQUES
DU SOUS-GENRE **YUCHIHA** PATE
(Hymenoptera, Sphecidae, Crabroninae)*

par Jean LECLERCQ**

Les sous-genres *Microcrabro* DE SAUSSURE (1892) et *Yuchiha* PATE (1944) se distinguent des autres *Crossocerus* LEPELETIER et BRULLÉ (1834) à aire pygidiale plane et à gaster non pédonculé, notamment par les mandibules unidentées des femelles. Les espèces de *Microcrabro* vivent en Afrique tropicale, celles de *Yuchiha* en Amérique du Nord et en Asie tropicale. En 1963 (p. 13), je crus bien faire en décrétant les deux sous-genres synonymes ; BOHART et MENKE (1976) m'ont suivi.

Cependant, préparant une révision des lignées de *Crossocerus*, M. Richard C. MILLER (Cornell University, Ithaca, New York) en est arrivé à me donner tort ; dans une lettre très amicale du 30 juillet 1974, il m'écrit « *Microcrabro* heterogeneous collection of species which is completely indefensible from a taxonomic standpoint » et me donne assez d'arguments pour que je me rallie à sa conclusion. Je lui laisse le soin d'explicitier sa thèse mais en attendant, c'est donc comme *Yuchiha* que je traite les *Crossocerus* asiatiques présentés ici, y compris deux espèces nouvelles.

BOHART et MENKE (1976, p. 400) mentionnent cinq espèces asiatiques comme « *Microcrabro* » : *brahmanus* LECLERCQ (1956), *kockensis* LECLERCQ (1950), *melanochilos* PATE (1944), *rimatus* LECLERCQ (1963) et *republicus* LECLERCQ (1963, recte : 1954, p. 226).

L'inclusion de *republicus* est une erreur. J'ai donné ce nomen novum au *Crabro* (*Crossocerus*) *denticornis* GUSSAKOVSKIJ 1932, nec 1933, p. 24 (nec *Crabro denticornis* SMITH, 1879) décrit de

* Déposé le 2 février 1977.

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