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ON THE FLIGHT PATTERNS OF SOME FREQUENT AQUATIC INSECTS AT LAKE FERTŐ (HUNGARY)

In spite of the difficulty of identification of the aquatic insects living in the different emerged as well as submerged plant stands in the Hungarian part of Lake Fertö, we have published some papers on their distribution and ecology. (ANDRIKOVICS 1979, ANDRIKOVICS in press).
Parallely to investigations on larvae adults were collected, thus increasing the taxonomical certainty of larvae, and the trustworthiness of the identification. At the same time new data on the frequent species came forth. In this paper some results of our investigations on imagines are published in detail.

Method

At net was used to collect mayflies and dragonflies. The other aquatic insects were caught by means of a light trap (diameter 80 cm and 25 Watt bulb of an automobile headlamp). During 1976 and 1977 the light trap was exposed in the Fertö Rakos Bay on the boarder of the reed to the open water and samples removed daily.

Results

The majority of the material caught by the trap consisted of Diptera (Chironomids and other flies). These were followed-ranked according to their frequency - by the caddies flies, moths, mayflies, water bugs and beetles. In the case of some species of ephemeroptera and odonates

the collecting was made by net only. In the following the obtained results are surveyed although monthly collections permitt preliminary conclusions only.

Ephemeroptera:

Among the mayflies Caenis robusta was collected by the trap. Cloeon diptrum was netted in such quantities, that it is possible to draw conclusions on their population dynamics. This species has generally two generations in Lake Fertö: the first occurs in May, the second from end of August to beginning of September. Caenis robusta also has a vernal and a late aestival generation.

Table I

Odonata - from the 24 species caught 9 were very frequent only -

Species	Months of main occurence of the adults		
Sympecma fusca	April	-	October
Ischnura pumilio	May	-	September
Ischnura elegans	May	-	September
Enallagma cyathigerum	May	-	September
Coenagrion puchellum	May	-	August
Coenagrium puella	May	-	August
Orthetrum cancellatum	May		
Cordulia aenea	May		
Leucorrhinia pectoralis	May		

At the beginning of April Sympecma fusca appears and can be collected until October continuously, depending on weather conditions. S. fusca can be observed as early as February (pers. communication S. UJHELYI). The other species can be collected from May to August or September, the last 3 species of Table I occur in May mainly, later they can be seen occasionally, but in very small quantities.

Trichoptera

The following species from the light trap have been found in great individual numbers.

Orthotrichia costalis flew from beginning May until end of June in both years.

Ecnomus tenellus (Fig.:1) occured from May to September continuously. It is interesting however, that flight maxima were in June and July-August in 1976 and 1977 respectively.

Cyrnus crenaticornis - In 1976 a few individuals were caught only. In 1977 however it appeared from the middle of May to beginning of September. Agrypina pagetana (Fig.:2) appeared first at the end of July. Second generation developed at the end of August to the beginning of September. In 1977 the generation August-September could be found only.

Limnephilus affinis (Fig.: 3) occured in 1976 in two generations. These lasted from early May - mid May and from the begin of September - mid October.

In 1977 the first generation appeared by mid April already and lasted until May. The second generation was found in September.

Limnephilus flavicornis was cought in 1976 in mid of July a single specimen. Later on it was found in August as well as in September. In 1977 however it flew in May and August. According to our investigations one generation is rather probable. Concerning the Limnephilus-species, the results obtained by light trap show that the L. affinis has a wide distribution and is the most common caddies fly of Lake Fertö. Similarily to L. flavicornis a vernal and autumnal generation is to be suspected. L. binotatus however presumably flew continuously from May to August more or less equally abundant in 1976; in 1977 however it showed two swarming peaks: one in May and another in August.

Conclusiones from the comparison of investigations on larvae and imagines.

The investigations on the imagines supporting the determination of the larvae assisted in the interpretation of the population dynamical observation. Taking into consideration the localities of the collections by light trap and net and comparing these results with those of the larval investigations we may find good examples for the spatial isolation. From the investigations of the adults it could be shown that Cloeon dipterum hardly coincides with Cloeon simile, which is the species mainly characteristic for the pond weed stands in the open lake. This fact could already by outlined on the basis on larval investigations. (ANDRIKOVICS 1979). Generally it must be stated that light trap catches do not agree with results on quatitative investigations on the larvae.

References

ANDRIKOVICS, S., 1979: Contribution to the knowledge on the invertebrate makrofauna living in the pondweed fields of Lake Fertő. Opusc.Zool.Budapest, 16, 1-2: 59-65.

ANDRIKOVICS, S., 1981: (in preparation): Informational quantitative data on the invertebrate makrofauna living in the caracteristic biotopes of Lake Fertő (provisional title).

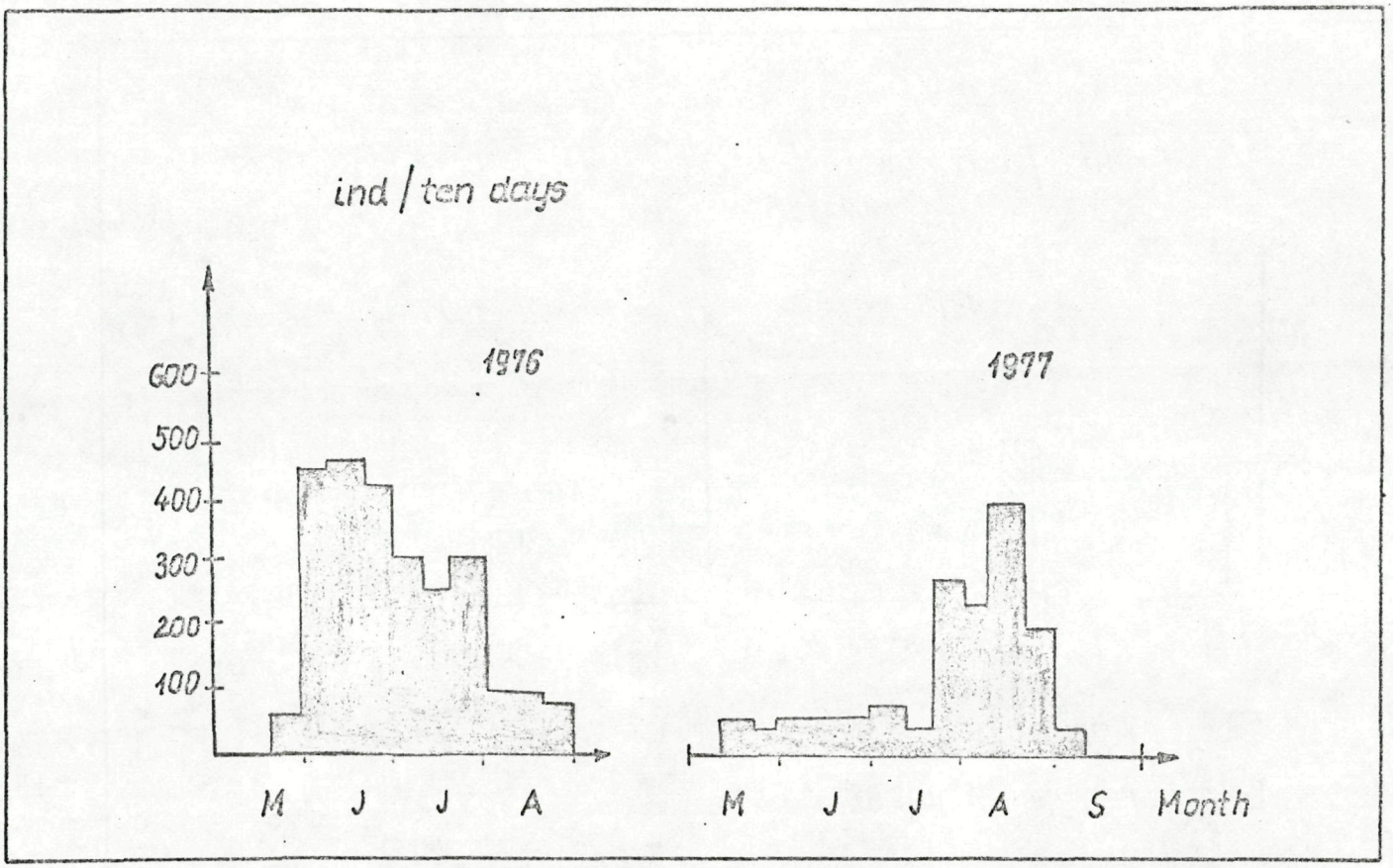

Fig. 1. The flight pattern of Ecnomus tenellus in 1976-1977

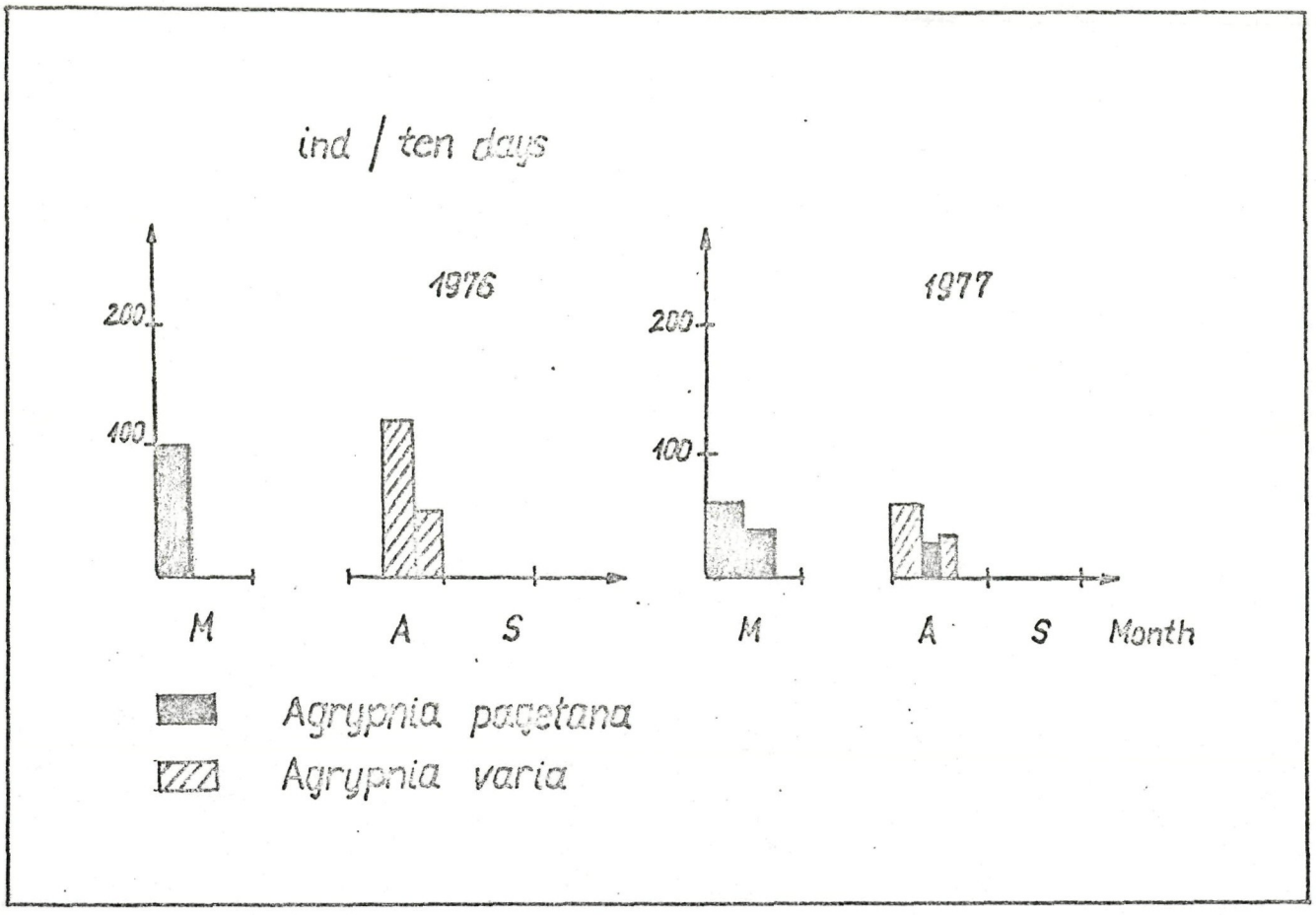

Fig. 2. The flight patterns of Agrypnia pagetana and Agrypnia varia in 1976-1977.

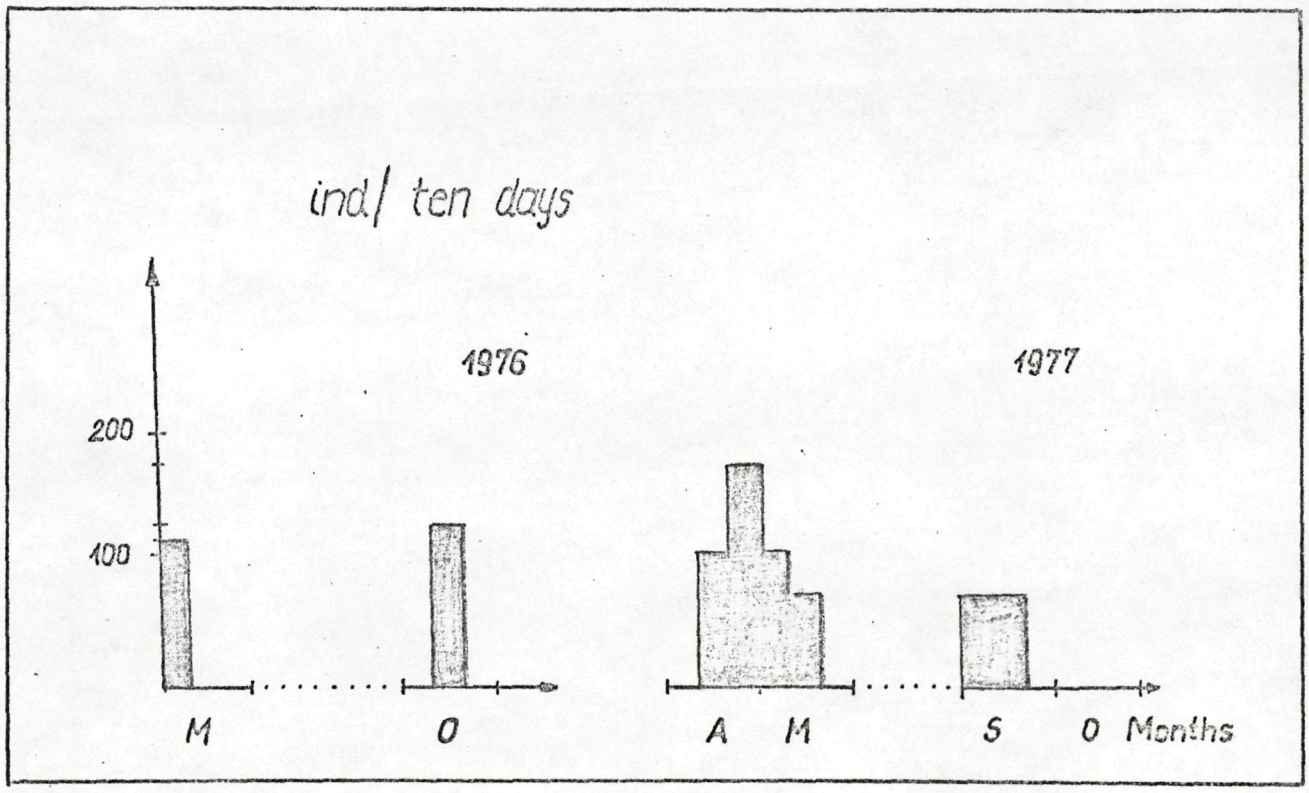

Fig. 3 The flight pattern of Limnephilus affinis in 1976-1977.