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**A Contribution to the Biology of *Eucharis adscendens* (F.)
(Hymenoptera)**

Príspevek k biológii *Eucharis adscendens* (F.) (Hymenoptera)

Материалы к биологии *Eucharis adscendens* (F.)
(Hymenoptera)

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V anglickém textu je podrobně popsán způsob kladení vajíček chalcidky *Eucharis adscendens* (F.), která je nejznámějším zástupcem čeledi *Eucharitidae* v Evropě. Kromě toho jsou popsány primární larvy a sdělena řada poznámek k ekologii druhu.

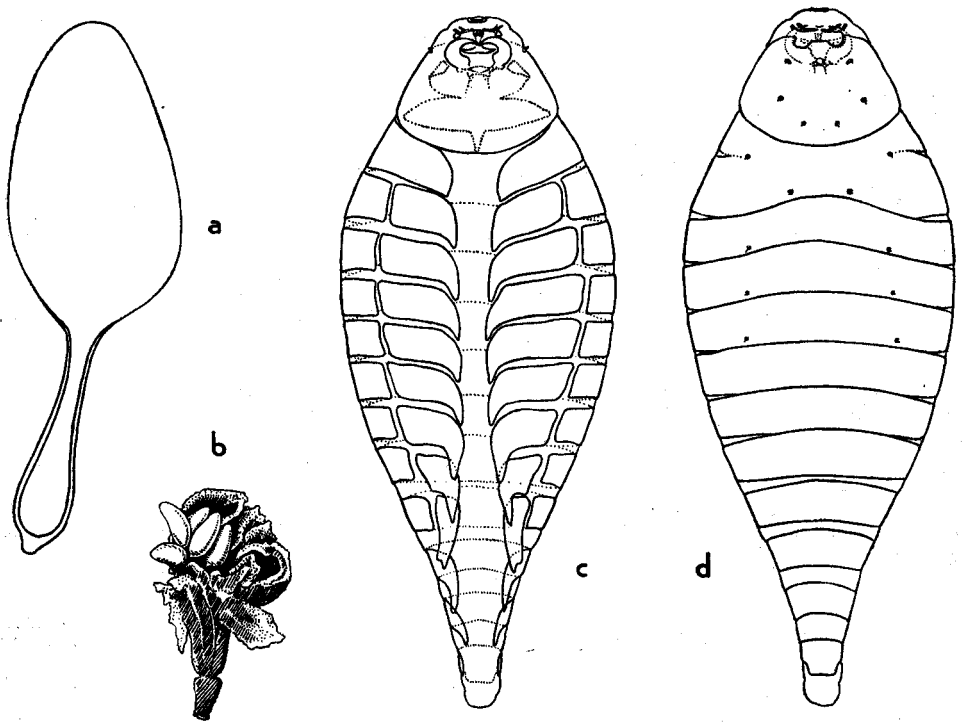
Vajíčka jsou kladena hromadně v červnu do nerozvitých pupat srpku obecného (*Falcaria vulgaris* Bernh.), asi týden před rozkvetem. Vylíhlé pohyblivé larvičky (obr. 1c, d) se přichycují na květech na mravence rodu *Formica* a ti je zanášejí do hnízd, kde se paraziti dále vyvíjejí v mravenčích kuklách. Dospělé chalcidky tohoto druhu jsou považovány za vzácné. Toto pozorování je však nutno v mnohých případech přičíst na vrub skutečnosti, že imaga nemohou přijímat potravu, neboť mají zcela zakrnělé ústní orgány (kromě kusadel) a žijí proto jen několik dní.

The oviposition and the first larval instar has not yet been known in this commonest European species of *Eucharitidae*.

On 7th June 1954 I had the opportunity to observe a fairly large number of *Eucharis adscendens* (F.) at Chuchle in the near vicinity of Praha. Both females and males were flying slowly above low grassy vegetation in near a mixed wood, above the earthy nests of a *Formica* sp., which was later identified by the formicologist Dr. K. Samšínák as *Formica rufa* L. (!). Flying eucharids settled here and there on the grass culms and especially on the umbels of *Falcaria vulgaris* Bernh. which were still closed (about one week before blooming). A careful examination of these flowers showed that there were many more eucharids than one expected at first sight, as many of them were hidden on the underside of the flowers, just beneath the small umbels. All these insect were females. Some of them were sitting on the petioles of the closed blossoms, head downwards, and were stinging with the apex of their abdomen between the small leaves of the blossoms. The ovipositor could not be seen distinctly, as it is rather short, but it was evident that these females were ovipositing. I brought some of the thus attacked flowers to the laboratory and in the longitudinal section of the blossoms (fig. 1b) there were found white eggs of *Eucharis*.

In June of the following year, i. e. 1955, I had the opportunity to examine the oviposition more accurately. I brought the still closed flowers of *Falcaria vulgaris* with the females of *Eucharis adscendens* to the laboratory, where I was able to observe the act of oviposition under the stereoscopic binocular.

The female oviposits into the blossom in various places, many times only between the small petals, most frequently from below upwards, as she then can hold on by her legs to the flower petiole and thus gains more stability and a better support for her body. Stinging or struggling of abdomen or ovipositor against the flower wall were not observed. The ovipositor will be only inconspicuously protracted as it is itself relatively very short. It penetrates either between two petals of the still closed flower bud or pierces the petal. It was not possible to observe the laid egg passing the ovipositor canal, but one may suppose that its length must enormously increase to reduce its thickness. Its inner tension is rather high, for as soon as it reaches the tip of the ovipositor, it jumps out as a small rubber ball, which has been tightly compressed. The egg passes the ovipositor canal with its petiole directed forwards and the anterior end of this petiole will be glued firmly to the bottom of the blossom. One egg is laid in the time of one second, on an average. Further details of this action were not observed.



1. *Eucharis adscendens* (F.); a — vajíčko; b — nakladená vajíčka v rozříznutém poupěti srpku; c — primární larva s břišní strany; d — totéž s hřbetní strany.

1. *Eucharis adscendens* (F.); a — egg, b — deposited eggs in a dissected flower bud of *Falcaria*; c and d primary larva in ventral and dorsal view.

The eggs are mostly laid in groups of 8 to 15. Their total volume is often so large that they press the petals apart so that the broad ends of a certain number of eggs protrudes between the petals of the hitherto closed blossom.

Each egg is white, its chorion without distinct structure. Its petiolated body is about 0.15 mm. long, nearly as long as its petiole (fig. 1a). The form of the egg is determined probably by the unequal thickness of its wall. The chorion of the petiole is much thicker than that of the egg body.

Approximately after 7 days there appear the first primary larvae of *Eucharis adscendens* which are planidium-like. See figs. 1c and 1d, which show the primary larva in dorsal and ventral view. In side view this planidium is relatively high, not depressed, the length of body 0.15 mm. It creeps similarly as a caterpillar using the sternal processes instead of the absent legs.

These slowly moving larvae affix themselves obviously on the ants when visiting flowers and these carry the parasites into their nests, where the small larvae probably bore into the pupae of ants. *Formica rufa* L. is already known as host of this *Eucharis*, besides of *Messor barbarus* (L.).

Eucharis adscendens (F.) is often regarded as a rare species by the hymenopterologists, but it is not so everywhere. This observation is due in most cases to the fact that the imagoes live only a few days. They cannot take in food as their mouth organs are very stunted, quite rudimental. The labio-maxillary complex is entirely lacking, the mouth is pit-like, blind, with shut ground. The mandibles are rudimental, though typically sickle-shaped (in most species of the genus *Eucharis* Latr.), their bases are closely approached to each other, so that the mandibles interlock and cannot be opened. The females with the abdomen full of eggs (when taken) survived 3 to 5 days in captivity, the males die much sooner; so there are only about one or two weeks in the year in which these eucharids can be taken flying in nature.

ВЫВОДЫ

В английском тексте подробно описан способ яйцекладения хальциды *Eucharis adscendens*, которая является самым известным представителем семейства *Eucharitidae* в Европе. Кроме того описаны примарные личинки и сообщен ряд заметок к экологии вида.

Яйца откладываются кучками в июне в неразвитые бутоны *Falcaria vulgaris* Bernh. приблизительно неделю до расцвета. Вылупившиеся подвижные личинки (рис. 1c, d) прилипают к муравьям рода *Formica* забирающимся в цветы и они переносят их в гнезда, где эти паразиты дальше развиваются в муравьиных куколках. Взрослые хальциды этого вида считаются редкими. Это наблюдение нужно в многих случаях объяснить тем, что имага не могут принимать пищу, потому, что имеют неразвитые ротовые органы (кроме мандибул) и живут вследствие того лишь несколько дней.

Текст к рисункам:

- a — яйцо
- b — яйца в разрезанном бутоне
- c — примарная личинка с брюшной стороны
- d — примарная личинка с дорсальной стороны