

# A RESEARCH ON *Libythea celtis* (LAICHARTING, 1782) (LEPIDOPTERA, NYMPHALIDAE) NETTLE-TREE BUTTERFLY IN DEVREK, TURKEY

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## ABSTRACT

This research has been carried out in 2005, in Devrek. For collection of plants and larvae from the field and for breeding larva in laboratory, identification of insects and preserving technique modern methods were used. In our investigations in spring 2005, interestingly we found *Libythea celtis* (Laicharting, 1782)'s larvae were feeding on foliage of *Alnus glutinosa* subsp. *glutinosa* although *Celtis* sp. and essentially *Celtis australis* are foodplant of this butterfly.

**Keywords :** *Libythea celtis*, Devrek, *Alnus*, *Celtis*.

## DEVREK'TE ÇİTLENBİK KELEBEĞİ *LIBYTHEA CELTIS* (LAICHARTING, 1782) (LEPIDOPTERA, NYMPHALIDAE) ÜZERİNE BİR ARAŞTIRMA

## ÖZET

Bu araştırma 2005 yılında Devrek'te gerçekleştirilmiştir. Bitki örneklerinin ve larvaların toplanması, larvaların laboratuarda beslenmesi, erginlerin elde edilmesi, teşhisi ve koleksiyonda muhafaza altına alınmasında modern yöntemler uygulanmıştır. 2005 yılı bahar aylarında yapılan araştırmada, literatürde *Libythea celtis* (Laicharting, 1782)'in konukçusu *Celtis* türleri ve özellikle *Celtis australis* olarak belirtilmesine rağmen, bu kelebeğin larvalarının *Alnus glutinosa* subsp. *glutinosa*'nın yaprakları üzerinde beslendiği tespit edilmiştir.

**Anahtar kelimeler:** *Libythea celtis*, Devrek, *Alnus*, *Celtis*.

## 1. INTRODUCTION

*L. celtis* is strange and rare butterfly (wingspans is about 34-44 mm). It has unusual wings and a long palpi. So, it is distinguishable by its long snout and its projection on the front wing. It is the only one its subfamily (Nymphalidae, Libytheinae) in Western Europe. Its name is tengu-cho in Japanese (<http://pro.tok2.com/~tokyonature>). Tengu is a long-nosed goblin, and cho is a butterfly. The uppersides of the wings of this small butterfly are dark brown, with bright orange dots (Figure 1).



Figure 1. Wingspans are approximately 34-44 mm (Original photo).

The classification of this specimen is below ([http://www.faunaeur.org/full\\_results](http://www.faunaeur.org/full_results)):

Rank	Name
Kingdom	Animalia
Subkingdom	Eumetazoa
Phylum	Arthropoda
Subphylum	Hexapoda
Class	Insecta
Order	Lepidoptera
Superfamily	Papilionoidea
Family	Nymphalidae
Subfamily	Libytheinae
Genus	<i>Libythea</i>
Species	<i>celtis</i>

Members of the Nymphalidae family are recognized by their short, functionless, hairy forelegs. Many are distasteful or mimic distasteful species (Gillot, 1995). The Libytheinae subfamily may be easily recognized by the very long palps. The widely distributed genus *Libythea* includes a single Palearctic species *L. celtis*, which occurs in central Europe. The affinities of this subfamily have given rise to much discussion, and certain authorities relegate it to the Nymphalidae while others regard it as forming a separate family (Richards and Davies, 1994).

According to references, it flies across southern Europe and also on several of the Mediterranean islands in summer before hibernating in the extreme heat of August, not re-emerging until the first warm days of spring. So, their flight time is late June – August, and March after hibernation. Damage is done by the larvae during their feeding activities.

The distribution areas of *L. celtis* in the world are S. Europe, France, Spain, Macedonia, Greece, Bulgaria, Italy, Hungary, Turkey, Iran, South Cyprus and Asia Minor to China, Korea and Japan (<http://www.lepidopterology.com/>; <http://www.anythingbutcommon.nl>; <http://www.butterfly-guide.co.uk>; <http://www.grayling.dircon.co.uk>; <http://www.leps.it/>; <http://www.members.tripod.com>; <http://www.tudav.org/oludeniz>; [www.haber.aku.edu.tr](http://www.haber.aku.edu.tr)).

The larval food plant is *Celtis australis* L. (the Nettle-tree). *C. australis* is a member of the Ulmaceae, found in the south, north west and west of Turkey. It is deciduous, bright green, shade tree of southern Europe, North Africa and west Asia. Another name is Nettle tree or Southern Nettle Tree (Davis, 1982; Yaltrık, 1998; Yaman, 2005; Yücel, 2005).

The objective of this study is to investigate *Libythea celtis* and foodplants in Devrek province.

## 2. MATERIAL AND METHOD

*Alnus glutinosa* (L.) Gaertn. subsp. *glutinosa* and *Celtis australis* are naturally growing in the Devrek forests. The investigations were carried out in the form of field and laboratory. Samples of plants and larvae (collected by hand picking and kept with alive) were taken from Devrek, and transferred to the laboratory for morphological identification according to the relevant sources. The collection date, host plant, and name of locality were noted.

In order to determine the maturation time, each individual larva was allowed to develop into adult. The alder leaves were replaced with fresh ones every 2-3 days through out the duration of the study. Larvae fed and developed on alder leaves. Both of larvae developed into adult. Adult specimens were killed in killing jars with ethyl acetate. Each specimen was pinned using insect pins (no: 2) and wings were mounted on a spreading board. After the specimens dried, both of them were placed in insect boxes. Taxonomical status of the recorded species was checked according to recent update of Fauna European ([http://www.faunaeur.org/full\\_results](http://www.faunaeur.org/full_results)). Specimen was identified using a Nikon stereomicroscope. For identifications of adults, pupae and larvae John, E. and C. Makris, 2001; <http://www.leps.it>; [www.lepidopteroology.com](http://www.lepidopteroology.com); <http://www.eurobutterflies.com> were used. The adult specimens are stored in collection box of the Forest Entomology and Protection Laboratory.

## 3. RESULTS AND DISCUSSION

This butterfly is known as a like monophagus insect, because of especially feeding on *C. australis* (European Nettle Tree), so its name is nettle tree butterfly (<http://www.geocities.com/europeanbutterflies/English/celtis.htm>). However, the preferred host-plant of this specimen appears to be *C. tournefortii* Lam., in south Cyprus (John and Makris, 2001). Besides, these insects feed on *C. caucasica* Willd and *C. glabrata* Steven ex Planchon (Hesselbarth, Oorschot, and Wagener, 1995). Any report was not found with feeding on *Alnus glutinosa* subsp. *glutinosa*.

There have been no records of *L. celtis* in Devrek, so far. Larvae of this species were recorded on Bartın-Ankara Road 92nd km, near the Devrek River (300m) and Ataköy Picnic and Sport facilities, on *Alnus glutinosa* subsp. *glutinosa* (09.05.2005) (Sönmezyıldız, 2006). The larvae were feeding on foliage. They were not too much. Only 7-8 larvae were present. According to the observations in laboratory, larvae are green; they have a developed head, three thoracic and ten easily seen abdominal segments. The thorax has a pair of legs on each segment. Although the abdomen carries 5 pairs of legs, the first four pairs are abdominal feet and remaining pair the claspers (Figure 2). The first change from the larva to the pupa became on 11.05.2005, another became pupa on 16.05.2005. The pupae (chrysalis) are green, like larvae's color (Figure 3). Adults emerge on 24.05.2005 (Figure 4 and Figure 5). It is noteworthy that, the larvae were found on *Alnus*, although *Celtis australis* has other side of road and 50m faraway from *Alnus*.



Figure 2. *Libythea celtis* larva on *Alnus* leaf and its pellets (Original photo).



Figure 3. Chrysalis phase of *L. celtis* was completed in Laboratory (Original photo).



Figure 4. *Libythea celtis* adults emerged from cocoons on 24.05.2005 (Original photo).



Figure 5. Adult of *L. celtis* (Original photo).

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