

## ΑΝΑΚΟΙΝΩΣΕΙΣ ΜΗ ΜΕΛΩΝ

ΖΩΟΛΟΓΙΑ.—*Dixinae and Chaoborinae of Greece\**, by *George Pandazis*.

Ἀνεκοινώθη ὑπὸ κ. Ι. Χ. Πολίτου.

In a former publication<sup>1</sup> I gave a list of the genera and species of *Culicinae* found at various times in Greece. In my attempt to complete the studies of the entire family of the Culicidae in Greece I started an investigation on the other two subfamilies, the *Dixinae* and *Chaoborinae*, which include species without medical significance. While true mosquitoes have been the object of detailed investigations in the different countries of the palaeartic region, a comparatively small number of publications are dedicated to the non-bloodsucking group of the *Dixinae* and *Chaoborinae*. Very little is yet known of the bionomics of the adult and larval stage, as also of the distinction of the different species on the basis of larval characters and the exact geographical distribution. Waterston was the first, to my knowledge, who collected specimens of *Dixa* in Macedonia, during the war; these specimens were sent to the British Museum. Since that time almost nothing has been done in Greece in this direction. The present study is a preliminary report of my investigations<sup>2</sup>.

The identification of the different species found in Greece is based mainly on the characters of the male hypopygia.

## A. Subfamily: DIXINAE.

This subfamily includes, as is known, a single genus, *Dixa* MEIGEN, which in Europe is represented by only two subgenera, *Dixa* and *Paradixa*.

I. Genus *Dixa*, Subgenus *Dixa*.

\* Γ. ΠΑΝΔΑΖΗΣ.—Δίξιναι καὶ Χαοβορίναι τῆς Ἑλλάδος.

The present study was conducted with the support and under the auspices of the International Health Division of the Rockefeller Foundation, in collaboration with the Malaria Division of the School of Hygiene of Athens.

<sup>1</sup> PANDAZIS, G. Die Culicinenfauna Griechenlands. *Praktika of the Akademy of Athens*, 7, 1932, p. 170.

<sup>2</sup> The more important publications referred to are the following:

a) EDWARDS, F. W. The British Chaoborinae and Dixinae. *Ent. Month. Mag.*, 3rd series, 6, 1920, p. 264.

b) MARTINI, E. Culicidae. In Lindner's *Fliegen der palaearktischen Region*. 11 und 12, pp. 1-320, Stuttgart, 1929-30.

1. *Dixa maculata* MEIGEN 1818. Of this species I found in September two males and one female in a humid Fagus-forest on Mt. Pangaion (Macedonia), at an altitude of about 1000 meters.

2. *Dixa nebulosa* MEIGEN 1830. The larvae of this species were found in June in a spring pool at Nea Carvalli (Macedonia) in company with larvae of *Anopheles algericensis*, *Theobaldia annulata*, *Uranotaenia unguiculata* and *Dixa serotina* (presumably the larvae belong to this species).

II. Genus *Dixa*, Subgenus *Paradixa*.

3. *Dixa aestivalis* MEIGEN 1818. This species has been repeatedly found during the summer breeding in spring pools, pool sections of stream and ponds in different places of Macedonia (Drama, Nea Carvalli), Thessaly (Klokotos) and Peloponese (Eghion). None of the hatched adults showed the characters of the *var. aprilina* MEIG.

4. *Dixa amphibia* DE GEER 1776. One female was caught in July in the Malaria laboratory in Cavalla (Macedonia). It is probable that this specimen had been brought to the laboratory in the larval stage, in water collected from mosquito-breeding places and had hatched out in the laboratory.

5. *Dixa attica* n. sp. During my investigations made in the winter time in different places of Attika I found in company with *D. obscura* a new species of *Dixa*, which externally seems to be allied to *D. serotina*, the male hypopygium being the principal character which differentiates

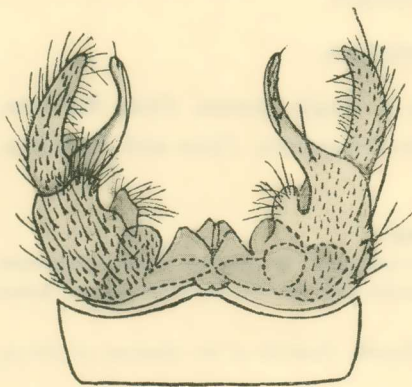


Fig. 1.—Hypopygium of *Dixa attica* n. sp.

these two species. I found *D. attica* for the first time in December breeding in a shallow marshy pool at Kato Souli, and later in February on the edges of a deep spring pool at Vrexiza (Marathon). The external characters of the new species are the following: Head and palpi dark brown, antennae brown, proboscis yellow. Prothoracic lobi brown. Thoracic markings as in *D. serotina* but ground colour dirty yellow; colour of the mesonotal stripes coffee-brown. Scutellum dirty

yellow in the middle, brown towards the sides. Pleurae and legs as in *serotina*. Halteres dark brown at the tip, pale yellow at the base. Abdomen brownish. Male hypopygium: Outer clasper without appendages and with



bristles and hairs; inner clasper as long as the outer, rounded at the apex, with a single bristle near the base and three bristles near the tip (inner side). Basal lobe with several bristles (Fig. 1).

A marked difference is noted from the hypopygium of *D. serotina*, which is characterized by a large outer clasper having on the side an obtuse projection which ends in two spines and by the inner clasper which is divided at the tip.

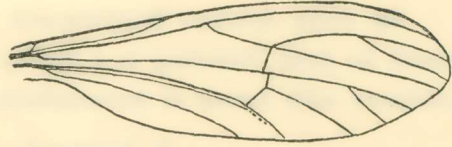


Fig. 2.—Wing of *Dixa attica* n. sp.

6. *Dixa autumnalis* MEIGEN 1838. I found the larvae of this species in August in a spring pool at Nea Carvalli (Macedonia) in company with larvae of *Anopheles maculipennis*, *Anopheles hyrcanus* and *Uranotaenia unguiculata*.

7. *Dixa laeta* LOEW 1849. One male was caught in September in a Fagus-forest on Mt. Pangaion (Macedonia). The larvae were found in March breeding in slow-running water in a ditch at Kato Souli (Attika).

8. *Dixa fuscifrons* EDWARDS 1928. The larvae were found in April breeding in a rain pool at Mourla (Eghion-Peloponese) and in a spring pool at Marathon (Attika). Waterston found this species in Mikra, Karabouroun and Hadji-Geul (Macedonia).

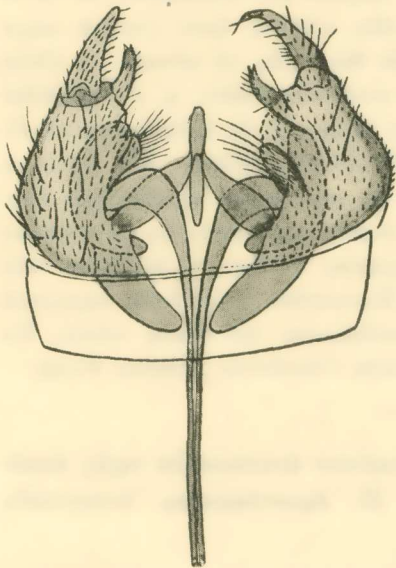


Fig. 3.—Hypopygium of *Dixa obscura* LOEW

less projecting and bearing several bristles. Penis' support very long and chitinous (Fig. 3), which is characteristic for the species. The same structure is observed only in the hypopygium of *D.*

9. *Dixa obscura* LOEW 1849. This species was found throughout the winter in different places of Attika (Kato-Souli, Marathon, Tatoi) breeding in company of *D. attica* in slow-running streams and spring pools. As the male hypopygium of this species has not yet been described, its characters are given below: Outer clasper without appendages and with bristles and hairs; inner clasper hairy, shorter than the outer, ending in two spine-like bristles. Basal lobe more or

filicornis from which *D. obscura* is differentiated by the inner clasper which is quite bare in filicornis and does not end in spines. Also the wings of *D. filicornis* are spotted.

10. *Dixa serotina* WIEDEMANN 1818. The larvae of this species were found in June breeding in a spring pool at Nea Carvalli (Macedonia) in company with larvae of Anophelines and *Dixa nebulosa*.

#### B. Subfamily: CHAOBORINAE.

This subfamily includes two genera, *Mochlonyx* LOEW and *Chaoborus* LICHTENSTEIN. Although both are undoubtedly represented in Greece by more than one species, the only one seen by me appears to be *Chaoborus pallidus* FABRICIUS 1781, which was caught in June by Mr. R. C. Shannon at Nea Carvalli (Macedonia); it is in his personal collection. He has also observed it in the Struma valley (Macedonia).

Specimens of the above 10 species of Dixinae are in my personal collection at the Athens School of Hygiene.

#### ΠΕΡΙΛΗΨΙΣ

Συμπληρωματικῶς μὲ τὰς ἐρεῦνας ἡμῶν ἐπὶ τῆς πανίδος τῶν Κωνωπιδῶν τῆς Ἑλλάδος ἐμελετήσαμεν τὰς ὑποοικογενείας τῶν Διξινῶν καὶ Χαοβορινῶν, ὧν τὰ ἐν τῇ Νοτιοανατολικῇ Εὐρώπῃ ἀντιπροσωπευτικὰ εἶδη οὐδόλως ἦσαν γνωστὰ μέχρι σήμερον. Ἐκ τῶν Διξινῶν ἀνεύρομεν μέχρι τοῦδε δέκα εἶδη τὰ κάτωθι: 1. *Dixa maculata* MEIG., 2. *D. nebulosa* MEIG., 3. *D. aestivalis* MEIG., 4. *D. amphibia* DE GEER, 5. *D. attica* n. sp., 6. *D. autumnalis* MEIG., 7. *D. laeta* LOEW, 8. *D. fuscifrons* EDW., 9. *D. obscura* LOEW, 10. *D. serotina* WIED. Ἐκ τούτων ἡ μὲν *D. attica* ἀποτελεῖ ἐντελῶς νέον εἶδος, οὗ τὴν περιγραφὴν παραθέτομεν ἀνωτέρω, ἡ δὲ *D. obscura* μόνον ἐκ τῶν θηλέων ἦτο γνωστὴ, τοῦ ὑποπυγίου τῶν ἀρρένων ὄντος ἀγνώστου. Λαμβανομένης ὑπ' ὄψιν τῆς σημασίας ἣν ἔχει τὸ ὑποπύγιον τῶν ἀρρένων ἐν τῇ διακρίσει τῶν διαφόρων εἰδῶν τῶν Κωνωπιδῶν, ἡ ὑφ' ἡμῶν περιγραφὴ τοῦ ὑποπυγίου τῆς *D. obscura* ἀποτελεῖ νέαν ἀναθεώρησιν τοῦ εἴδους τούτου. Ἐκ τῶν Χαοβορινῶν ἐν μόνον εἶδος ἀνεύρομεν μέχρι τοῦδε *Chaoborus pallidus* FABR.

ΑΡΧΑΙΟΛΟΓΙΑ. — Ἐκθεσις περὶ τῶν ἐκτελουμένων ἀνασκαφῶν πρὸς ἀνεύρεσιν τῆς ἀρχαίας Ἀκαδημίας, ὑπὸ Π. Ἀριστόφρονος. Ἀνεκοινώθη ὑπὸ κ. Κ. Κουρουνιώτου.

Αἱ ἐργασίαι ἔγιναν κατὰ δύο περιόδους ἀπὸ 18 Ἀπριλίου μέχρι 30 Ἰουνίου 1932, καὶ ἀπὸ 7 Νοεμβρίου 1932 μέχρι 28 Ἰανουαρίου τοῦ τρέχοντος ἔτους.

Κατὰ τὴν πρώτην περίοδον συνετελέσθη ἡ ἐκσκαφὴ ἱκανοῦ τμήματος ἐπὶ τῆς