

Short communication

New records of Chrysididae, Mutillidae, Crabronidae, and Sphecidae (Insecta: Hymenoptera) from Gölcük Natural Park, Isparta, Turkey

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چکیده

تعداد ۵۳ گونه زنبور متعلق به ۲۷ جنس و چهار خانواده از پارک ملی Gölcük در استان Isparta ترکیه جمع‌آوری شد. از این میان گونه‌ی *Cleptes schmidti* Linsenmaier, 1968 برای اولین بار از ترکیه و ۲۳ گونه‌ی دیگر برای اولین بار از استان مذکور گزارش می‌شوند.

Gölcük Natural Park (GNP) is situated 8 km southwest of the city of Isparta in southern Turkey and covers an area of 5,925 ha (Gül *et al.*, 2005; Karatepe *et al.*, 2005; Sahdubak & Cengiz, 2007; Japoshvili *et al.*, 2010). The GNP is frequented by various wasp species of the families Crabronidae, Mutillidae and Sphecidae and their parasites of Chrysididae because the location and dominance of heather-dominated arid heathlands appear to be suitable for their nesting.

Insect specimens were collected from March through October during 2008 and 2009, using pitfall traps, yellow pan traps and Malaise trapping methods. The lowest altitude was recorded 1227 m and the highest 1611 m. Each collecting site was run with 10 yellow pan traps and 10 pitfall traps. The 16 cm diameter yellow pan traps contained water as well as detergent to break the surface tension. The dishes were placed in open areas early morning and checked every other day to prevent the decomposition of insects. The collecting process was repeated every two weeks. The pitfall traps consisted of circular pots, with 11cm diameter, 11 cm deep, and were dug into the soil having their openings at the soil surface. At the beginning, dry traps were used but a month later, we decided to add 2% formaldehyde to prevent damages to the trapped insects by themselves or by other animals such as mice, shrews and lizards. Traps were inspected weekly. Malaise traps were used in three locations as follows: (1) Pilav Tepe, 1520 m, (2) *Acacia* reforested area close to main entrance of the park, 1414 m, and (3) an unused agricultural field, 1452 m. Traps were checked every 10 days.

The species list is provided in alphabetical order for each family. Each new record for Isparta province is marked with one asterisk (*) and the new Turkish record is marked with

two asterisks (**). A total of 53 species from 27 genera were collected in the area (18 species from five genera of Chrysididae, 22 species from 11 genera of Crabronidae, five species from five genera of Mutillidae and eight species from six genera of Sphecidae). The total number of collected specimens is 192.

Chrysididae: *Chrysis analis* Spinola, 1808, *Ch. bicolor* Lepeletier de Saint-Fargeau, 1806, *Ch. chrysoprasina* A. Förster, 1853, *Ch. frivaldszkyi* Mocsáry, 1882, *Ch. ignita* (Linnaeus, 1758), *Ch. simplonica* Linsenmaier, 1951, *Ch. subaurotecta* Linsenmaier, 1959, *Chrysura laevigata* (Abeille de Perrin, 1879), *Ch. dichroa* (Dahlbom, 1854), *Ch. ottomana* (Mocsáry, 1889), *Ch. pyrogaster* (Brullé, 1833), *Ch. radians* (Harris, 1776), *Cleptes aerosus* A. Förster, 1853, *C. parnassicus* Mocsáry, 1902, *C. schmidti* Linsenmaier, 1968**, *C. semiauratus* (Linnaeus, 1761)*, *Holopyga punctatissima* Dahlbom, 1854, *Pseudomalus violaceus* (Scopoli, 1763).

Crabronidae: *Astata pontica* Puławski, 1958*, *Bembix bidentata* Vander Linden, 1829, *B. gracilis* Handlirsch, 1893*, *B. pallida* Radoszkovsky, 1877*, *B. rostrata* (Linnaeus, 1758)*, *Cerceris quadricincta* (Panzer, 1799)*, *Crossocerus quadrimaculatus* (Fabricius, 1793)*, *Dinetus pictus* (Fabricius, 1793)*, *Ectemnius (Clytochrysus) sexcinctus* (Fabricius, 1775)*, *E. (Metacrabro) cephalotes* (Olivier, 1792), *Harpactus elegans elegans* Lepeletier de Saint-Fargeau, 1832*, *H. formosus formosus* Jurine, 1807, *H. laevis laevis* (Latreille, 1792)*, *Nysson dimidiatus* Jurine, 1807*, *Psammaecius punctulatus* (Vander Linden, 1829)*, *Tachysphex brullii brullii* (F. Smith, 1856), *T. coriaceus* (A. Costa, 1867)*, *T. fulvitaris* (A. Costa, 1867), *T. incertus* (Radoszkovsky, 1877), *T. latifrons* Kohl, 1884*, *T. pompiliformis* (Panzer, 1805), *Tachytes panzeri* (Dufour, 1841)*.

Mutillidae: *Myrmilla caucasica* (Kolenati, 1846), *Pseudophotopsis syriaca* (Er. André, 1900), *Ronisia brutia brutia* (Petagna, 1787), *Smicromyrme sicanus* (de Stefani-Perez, 1887), *Tropidotilla litoralis* (Petagna, 1787)*.

Sphecidae: *Ammophila sabulosa sabulosa* (Linnaeus, 1758), *Isodontia paluodsa* (Rossi, 1790)*, *Podalonia fera* (Lepeletier de Saint-Fargeau, 1845)*, *P. hirsuta hirsuta* (Scopoli, 1763)*, *Prionyx viduatus argentatus* (Mocsáry, 1883), *P. kirbii kirbii* (Vander Linden, 1827)*, *Sceliphron spirifex* (Linnaeus, 1758)*, *Sphex funerarius* Gussakovsky, 1934*.

Using different sampling methods resulted in the collection of following individuals and species: 18 specimens of 9 species collected by yellow pan trap; 85 specimens of 25 species collected by pitfall trap, 99 specimens of 31 species collected by Malaise trap, and 1 specimen collected by hand picking only. The yellow pan traps, pitfall traps, and Malaise traps were

equally efficient for collecting of the family Chrysididae as 6, 8, and 8 species were obtained (35%, 47% and 47% of total number of recorded Chrysididae species) respectively. The Malaise trap was found to be most productive for family Crabronidae with 18 trapped species that included 82% of total number of recorded crabronid species. Only 3 species were collected by yellow pan traps and 7 species by pitfall trap. Pitfall trapping proved to be most effective for Mutillidae and Sphecidae with 4 species (80% of recorded mutillids) and 6 species (75% of recorded sphecids) respectively. No Mutillidae or Sphecidae species were collected by yellow pan traps. Two species of Mutillidae and three species of Sphecidae were collected by Malaise traps.

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