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# A faunistic study on Cerambycidae (Coleoptera) of Kocaeli province (Turkey)

## Kocaeli ili Cerambycidae (Coleoptera) üzerine faunistik bir çalışma

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ABSTRACT

Due to the importation of lumber, timber, and wooden packaging materials via international ports, Kocaeli province is at risk of contamination of invasive forest pests, which is mentioned in the European and Mediterranean Plant Protection Organization (EPPO) alarm list. Fieldworks were carried out between March 2016 and October 2017 to determine the fauna of the family Cerambycidae (Coleoptera) in Kocaeli province. Species and specimen numbers were evaluated. Sixty-two species belonging to 39 genera were identified within 24 tribes, that classified under five subfamilies of Cerambycidae. Cerambycinae was the most represented subfamily with 29 species (634 specimens), and Prioninae was the least represented subfamily with three individuals in two species. Thirty-six of 62 species were the new records for Kocaeli province. Among them, *Leptura aurulenta* was reported for the second time in Turkey.

## INTRODUCTION

The family Cerambycidae is known as one of the largest groups of beetles, with 33,954 described species worldwide (Tavakilian and Cheviiotte 2020). It is impossible to give a precise number about the fauna of Turkey since the studies on this subject are still inadequate. According to Löbl and Smetana (2010), the number of cerambycid species and the subspecies, which are reported from Turkey approximately 650 and, but according to Özdikmen (2012) about 824.

Cerambycidae was studied under different xylophagous or phytophagous groups such as Pseudotetramera, Phytophaga, Chrysomeloidea, and Cerambycoidea together with Chrysomelidae and Bruchidae. Larvae of the most cerambycid species are xylophagous, and others feed in roots or stems of some gramineous plants (Gnjatovic and Zikic 2010). Larvae hollow out the roots, trunk, and branches up to their core. Therefore, they cause to death of trees also, some species damage woody crops and natural landscapes (Ocete et al. 2010). Compare to larvae, the harm caused by adults is negligible. The adults trigger decaying of the barks and trunks, causing various deformations in plants (Gül-Zümreoğlu 1975).

Despite the intense studies of species records conducted in Turkey including Breuning (1962), Danilevsky and Skrylnik (2021), Acatay (1971), Adlbauer (1988, 1992), and the evaluations of some ecological properties of cerambycids such as Şabanoğlu and Şen (2016), our knowledge is still insufficient. Detailed studies of the Cerambycidae have not been accomplished for all provinces, including Kocaeli.

The high volume of importation of industrial woods and wooden packaging materials increases the risk of invasion of the long-horned beetle pests, which in the alarm list of EPPO (Haack et al. 2014), although the phytosanitary measures (Allen et al. 2017). Kocaeli is one of the most critical provinces with 35 international ports, where intense forest products are being imported. Moreover, there are large industrial enterprises, where forest products (round timber, lumber, industrial wood chips, and wooden packing materials) are stored and shipped. These conditions might facilitate the invasion of some forest pests such as *Anoplophora chinensis* (Forster, 1771) and *Anoplophora glabripennis* (Motschulsky,

**Table 1.** Sampling locations and their abbreviations, coordinates and altitudes

| Location | Collecting points | Latitude | Longitude | Altitude (m) | Location abbreviation |
|---|---|---|---|---|---|
| Umuttepe | IUCF | 40.827616 | 29.914468 | 470 | U (1) |
| Umuttepe | IUCF | 40.827546 | 29.913539 | 484 | U (2) |
| Umuttepe | IUCF | 40.829273 | 29.918154 | 460 | U (3) |
| Umuttepe | IUCF | 40.828907 | 29.917394 | 426 | U (4) |
| Umuttepe | IUCF | 40.821287 | 29.920964 | 390 | U (5) |
| Umuttepe | IUCF | 40,829796 | 29,912649 | 479 | U (6) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.819622 | 29.493633 | 172 | K (1) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.819576 | 29.493635 | 173 | K (2) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.825921 | 29.497796 | 208 | K (3) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.825900 | 29.497778 | 153 | K (4) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.824195 | 29.500479 | 116 | K (5) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.827098 | 29.498562 | 135 | K (6) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.711247 | 30.051805 | 57 | K (7) |
| Gebze | Gebze-Kastamonu Integrated Wood Storage Area | 40.753890 | 29.141405 | 197 | K (8) |
| Gebze | Gebze-Akşemseddin Village | 40.826131 | 29.498105 | 113 | GAV (1) |
| Gebze | Gebze | 40.809781 | 29.504220 | 150 | G (1) |
| Gebze | Gebze | 40.809740 | 29.516636 | 162 | G (2) |
| Gebze | Gebze | 40.805713 | 29.498592 | 160 | G (3) |
| Gebze | Gebze | 40.809302 | 29.517027 | 144 | G (4) |
| Derince | Derince-Yenikent City Forest | 40.785182 | 29.851676 | 309 | Y (1) |
| Derince | Derince-Yenikent City Forest | 40.782301 | 29.851738. | 262 | Y (2) |
| Derince | Derince-Yenikent City Forest | 40.788705 | 29.845931 | 302 | Y (3) |
| Derince | Derince-Yenikent City Forest | 40.788767 | 29.845592 | 298 | Y (4) |
| Derince | Derince-Yenikent City Forest | 40.787594 | 29.845756 | 305 | Y (5) |
| Derince | Derince-Yenikent City Forest | 40.787113 | 29.845872 | 303 | Y (6) |
| Derince | Derince-Yenikent City Forest | 40.785965 | 29.846684 | 294 | Y (7) |
| Derince | Derince-Yenikent City Forest | 40.787174 | 29.846250 | 277 | Y (8) |
| Derince | Derince-Yenikent City Forest | 40.787585 | 29.846778 | 280 | Y (9) |
| Yeniköy | Yeniköy-Başiskele | 40.689081 | 29.901569 | 70 | YB (1) |
| Yeniköy | Yeniköy Cevizlik Bosphorus Area | 40.700071 | 29.898648 | 22 | YC (1) |
| Yeniköy | Yeniköy Streamside Locality | 40.699439 | 29.910664 | 22 | YD (1) |
| Yeniköy | Yeniköy Shed Locality | 40.696860 | 29.894771 | 35 | YS (1) |
| Yeniköy | Yeniköy Kirazlıkent Locality | 40.695407 | 29.899156 | 182 | YK (1) |
| Yeniköy | Yeniköy Kavaklıklar Locality | 40.695407 | 29.899156 | 123 | YK (2) |
| Yeniköy | Yeniköy Across Cemetery Meşelik Locality | 40.692064 | 29.898662 | 55 | YAC (1) |
| Yeniköy | Yeniköy Çayırlık Locality | 40.691000 | 29.901739 | 62 | YÇL (1) |
| Yeniköy | Yeniköy Bahçeler Locality | 40.695407 | 29.899156 | 32 | YBL (1) |
| Yeniköy | Yeniköy-Değirmenler Arası Locality | 40.689103 | 29.902835 | 65 | YDAL (1) |
| Bahçecik | Bahçecik | 40.679212 | 29.925200 | 236 | BA (1) |
| Kandıra | Kandıra-Kerpe ResearchForest | 41.145316 | 30.186889 | 101 | KF (1) |
| Kandıra | Kandıra-Kerpe Beach | 41.145316 | 30.186889 | 6 | KKB (1) |
| Kandıra | Kandıra-Döngelli | 41.002287 | 30.171732 | 72 | KD (1) |
| Kandıra | Kandıra-Akçaova Village | 41.050622 | 29.944146 | 172 | KAV (1) |
| Kartepe | Kartepe-Yıldız MDF Wood Storage Area | 40.763898 | 30.034718 | 15 | KYM (1) |
| Kartepe | Kartepe-Ketenceler | 40.754233 | 30.141611 | 197 | KK (1) |

1853). For example, *A. chinensis* spread by ornamental plants to Istanbul, and its eradication works still going on. The critical importance of such types of invasions could be more understandable considering that, the cost of *A. glabripennis* to China is 1.5 billion dollars (Hızal et al. 2014).

The study aims to determine the cerambycids of the Kocaeli province, considering their geographical distribution.

## MATERIALS AND METHODS

Cerambycidae specimens were collected from various habitats in Kocaeli province between March 2016 and October 2017. Depending on the vegetation and the target beetle, Scandinavian-type three-funnel traps, light traps, and pitfall traps were used. Also, hand collecting and insect nets were used for flower-visiting species. The traps were established in the forest areas with different altitudes, especially close to the harbors, where imports are made (both coniferous and broad-leaved), at the end of February. On the other hand, sampling was carried out in urban and sub-urban towns (Table 1): Izmit Umuttepe City Forest [U (1-6)], Gebze [G (1-4)], Gebze Kastamonu Integrated Wood Storage Area [K (1-8)], Gebze Akşemseddin Villas [GAV (1)], Derince Yenikent City Forest [Y (1-9)], Yeniköy Başiskele [YB (1)], Yeniköy Cevizlik Area [YC (1)], Yeniköy Streamside Locality [YD (1)], Yeniköy Shed Locality [YS (1)], Yeniköy Kirazlıkent Locality [YK (1)], Yeniköy Kavakliklar Locality [YK (2)], Yeniköy Across Cemetery Meselik Locality [YAC (1)], Yeniköy Cayırlık Locality [YCL (1)], Yeniköy Bahçeler Locality [YBL (1)], Yeniköy Değirmenler Arası Locality [YDAL (1)], Bahçecik [BA (1)], Kandıra Kerpe Research Forest [KF (1)], Kandıra Kerpe Beach [KKB (1)], Kandıra Döngelli [KD (1)], Kandıra Akçaova Village [KAV (1)], Kartepe Yıldız MDF Wood Storage Area [KYM (1)] and Kartepe Ketenceler [KK (1)].

Pheromones (ipsdienol, ethanol), acetic acid, and soap solutions were used to attract longhorn beetles. Taking into consideration the seasonal intensity and the releasing period of the attractants, which were hung on the traps, checking up was conducted once a week or two weeks. The consumed packages of attractants were replaced by new ones. The controls of the traps were started up when the air temperature reached 20 °C in March and terminated at the end of October.

The identification keys of Bense (1995), Breuning (1962, 1978), Harde (1966), Özdikmen (2013), Özdikmen and Turgut (2009a, 2009b, 2009c, 2009d, 2009e), Zamaroka and Panin (2011) were used for diagnosis of the specimens. Samples were stored at Kocaeli University, Biology Department, Turkey.

## RESULTS

Detailed information on sampling localities and dates is given in Table 1, and a summary list of species is given in Table 2.

*New records for Kocaeli Province.

? Sex could not be determined.

Subfamily: Prioninae

1- *Prionus coriarius* (Linnaeus, 1758)

*Material examined*: U (6), 03.VII.2016, (1♀); U (4), 19.VI.2016, (1♂).

2- *Mesoprionus lefebvrei* (Marseul, 1856)*

*Material examined*: U (4), 28.VI.2017, (1♀).

Subfamily: Lepturinae

3-*Stenurella bifasciata* (Müller, 1776)

Material examined: YS (1), 10. VI.2016 (1♀); YS (1), 17. VI.2016, (1♀).

4- *Stenurella septempunctata* (Fabricius, 1792)

Material examined: YÇL (1), 16.VI.2017, (1♀).

5- *Leptura aurulenta* (Fabricius, 1793)*

Material examined: K (5), 03.VII.2016, (1♀).

6- *Pachytodes erraticus* (Dalman, 1817) = *Judolia erratica* (Dalman, 1817)

Material examined: YÇL (1), 15. VI.2017, (2♀); YDAL (1), 16.VI.2017, (1♂); YS (1), 16.VI.2017, (1♀, 1♂); YÇL (1), 16.VI.2017, (3♀); BA (1), 17.VI.2017, (2♂); YDAL (1), 24.VI.2017, (2♀, 2♂); YS (1), 29.VI.2017, (1♀); YBL (1), 01.VII.2017, (2♂).

7- *Rutpela maculata* (Poda, 1761)

Material examined: BA (1), 17.VI.2017, (1♀); YBL (1), 28.VI.2017, (1♂).

8- *Anastrangalia dubia* (Scopoli, 1763)*

Material examined: K (4), 23.VI.2016, (1♀); YS (1), 19.VI.2016, (1♀); K (5), 23.V.2016, (1♂); K (5), 10.VI.2016,(1♀); K (3), 08.VI.2016, (1♂).

9- *Stictoleptura cordigera* (Füssli, 1775)

Material examined: YÇL (1), 28.VI.2016, (2♂, 2♀); YD (1), 30.VI.2016, (2♂, 3♀); YD (1), 04.VII 2016, (1♀); YD (1), 09.VII.2016, (2♂, 2♀); YÇL (1), 04.VII.2016, (2♂); YÇL (1), 27.VI.2016,(1♀); K (4), 03.VII.2016,(1♀); K (3), 23.VI.2016, (1♀); YS (1), 05.V.2017(2♂, 2♀); YS (1), 13.VI.2017, (1♀); YBL (1), 15.VI.2017, (1♀); YBL (1), 15.VI.2017,(1♂); BA (1), 17.VI.2017, (1♀); YBL (1), 21.VI.2017,(1♀); YK (1), 22.VI.2017,(1♂); YBL (1), 23.VI.2017,(1♂); YS (1), 23.VI.2017, (1♀, 1♂); YBL (1), 23.VI.2017, (1♀); YDAL (1), 24.VI.2017, (2♂); YBL (1), 24.VI.2017,(2♂, 2♀); U

**Table 2.** A list of cerambycid species collected in the study

| Species | Subfamily | Tribe |
|---|---|---|
| 1. *Prionus coriarius* (Linnaeus, 1758) | Prioninae | Prionini |
| 2. *Mesoprionus lefebvrei* (Marseul, 1856)* | Prioninae | Prionini |
| 3. *Stenurella bifasciata* (Müller, 1776) | Lepturinae | Lepturini |
| 4. *Stenurella septempunctata* (Fabricius, 1792) | Lepturinae | Lepturini |
| 5. *Leptura aurulenta* (Fabricius, 1793)* | Lepturinae | Lepturini |
| 6. *Pachytodes erraticus* (Dalman, 1817) | Lepturinae | Lepturini |
| 7. *Rutpela maculata* (Poda, 1761) | Lepturinae | Lepturini |
| 8. *Anastrangalia dubia* (Scopoli, 1763)* | Lepturinae | Lepturini |
| 9. *Stictoleptura cordigera* (Füssli, 1775) | Lepturinae | Lepturini |
| 10. *Stictoleptura fulva* (De Geer, 1775) | Lepturinae | Lepturini |
| 11. *Stictoleptura scutellata* (Fabricius, 1781)* | Lepturinae | Lepturini |
| 12. *Stictoleptura rubra* (Linnaeus, 1758) | Lepturinae | Lepturini |
| 13. *Rhagium mordax* (De Geer, 1775)* | Lepturinae | Rhagini |
| 14. *Rhagium fasciculatum* (Faldermann, 1837)* | Lepturinae | Rhagini |
| 15. *Rhagium bifasciatum* (Fabricius, 1775) | Lepturinae | Rhagini |
| 16. *Rhagium inquisitor* (Linnaeus, 1758) | Lepturinae | Rhagini |
| 17. *Stromatium auratum* (Böber, 1793) | Cerambycinae | Hesperophanini |
| 18. *Cerambyx dux* (Faldermann, 1837)* | Cerambycinae | Cerambycini |
| 19. *Cerambyx scopolii* (Füssli, 1775)* | Cerambycinae | Cerambycini |
| 20. *Cerambyx cerdo* (Linnaeus, 1758) | Cerambycinae | Cerambycini |
| 21. *Cerambyx carinatus* (Küster, 1846)* | Cerambycinae | Cerambycini |
| 22. *Clytus rhamni* (Germar, 1817) | Cerambycinae | Clytini |
| 23. *Clytus arietis* (Linnaeus, 1758) | Cerambycinae | Clytini |
| 24. *Chlorophorus figuratus* (Scopoli, 1763) | Cerambycinae | Clytini |
| 25. *Chlorophorus sartor* (O.F.Müller, 1766)* | Cerambycinae | Clytini |
| 26. *Chlorophorus varius* (O.F.Müller, 1766) | Cerambycinae | Clytini |
| 27. *Chlorophorus niehuisi* (Adlbauer, 1992)* | Cerambycinae | Clytini |
| 28. *Plagionotus detritus* (Linnaeus, 1758)* | Cerambycinae | Clytini |
| 29. *Plagionotus arcuatus* (Linnaeus, 1758) | Cerambycinae | Clytini |
| 30. *Plagionotus bobelayei* (Brullé, 1832)* | Cerambycinae | Clytini |
| 31. *Plagionotus floralis* (Pallas, 1773) | Cerambycinae | Clytini |
| 32. *Isotomus speciosus* (Schneider, 1787)* | Cerambycinae | Clytini |
| 33. *Ropalopus clavipes* (Fabricius, 1775) | Cerambycinae | Callidiini |
| 34. *Callidium aeneum* (De Geer, 1775)* | Cerambycinae | Callidiini |
| 35. *Pyrrhidium sanguineum* (Linnaeus, 1758)* | Cerambycinae | Callidiini |
| 36. *Phymatodes testaceus* (Linnaeus, 1758)* | Cerambycinae | Callidiini |
| 37. *Phymatodes femoralis* (Linnaeus, 1758) | Cerambycinae | Callidiini |
| 38. *Penichroa fasciata* (Stephens, 1831)* | Cerambycinae | Graciliini |
| 39. *Stenopterus kraatzi* (Pic, 1892)* | Cerambycinae | Stenopterini |
| 40. *Stenopterus rufus* (Linnaeus, 1767) | Cerambycinae | Stenopterini |
| 41. *Anaglyptus mysticus* (Linnaeus, 1758)* | Cerambycinae | Anaglyptini |
| 42. *Lampropterus femoratus* (Germar, 1824)* | Cerambycinae | Hyboderini |
| 43. *Purpuricenus budensis* (Götz, 1783) | Cerambycinae | Trachyderini |
| 44. *Rosalia alpina* (Linnaeus, 1758)* | Cerambycinae | Compsocerini |
| 45. *Hylotrupes bajulus* (Linnaeus, 1758)* | Cerambycinae | Hylotrupini |
| 46. *Tetropium fuscum* (Fabricius, 1787)* | Spondylidinae | Asemini |
| 47. *Arhopalus ferus* (Mulsant, 1839)* | Spondylidinae | Asemini |
| 48. *Arhopalus syriacus* (Reitter, 1895)* | Spondylidinae | Asemini |
| 49. *Arhopalus rusticus* (Linnaeus, 1758)* | Spondylidinae | Asemini |
| 50. *Spondylis buprestoides* (Linnaeus, 1758)* | Spondylidinae | Spondylidini |
| 51. *Dorcadion triste* (Frivaldzsky, 1845)* | Lamiinae | Dorcadiini |
| 52. *Dorcadion septemlineatum* (Waltl, 1838) | Lamiinae | Dorcadiini |
| 53. *Agapanthia suturalis* (Fabricius, 1787)* | Lamiinae | Agapanthiini |
| 54. *Agapanthia lateralis* (Ganglbauer, 1884)* | Lamiinae | Agapanthiini |
| 55. *Agapanthia violacea* (Fabricius, 1775) | Lamiinae | Agapanthiini |
| 56. *Morimus orientalis* (Reitter, 1894)* | Lamiinae | Phrissomini |
| 57. *Mesosa obscuricornis* (Pic, 1894)* | Lamiinae | Desmiphorini |
| 58. *Phytoecia pubescens* (Pic, 1895)* | Lamiinae | Phytoeciini |
| 59. *Pogonocherus perroudi* (Mulsant, 1839)* | Lamiinae | Pogonocherini |
| 60. *Aegomorphus clavipes* (Schrank, 1781) | Lamiinae | Acanthoderini |
| 61. *Exocentrus ritae* (Sama, 1985)* | Lamiinae | Acanthoderini |
| 62. *Saperda octopunctat*a (Scopoli, 1772) | Lamiinae | Saperdini |

* New records from Kocaeli

(5), 26.VI.2017,(6♂, 8♀); YBL (1), 28.VI.2017,(1♂, 5♀); YS (1), 29.VI.2017, (3♀); YD (1), 30.VI.2017, (1♂); YBL (1), 01.VII.2017,(4♂, 2♀); YS (1), 02.VII.2017,(1♀); U (5), 08.VII.2017, (2♀); U (5), 17. VII.2017, (1♂); U (5), 18.VII.2017, (1♀).

10- *Stictoleptura fulva* (De Geer, 1775)

Material examined: YK (1), 23.VI.2016,(2♂); YD (1), 30.VI.2016, (1♀); YK (1), 09.VI.2016,(1♂); YS (1), 10.VI.2016, (1♀); K (5), 05.V.2017, (5♂, 3♀); U (2), 05.V.2017, (1♀); Y (8), 04.VI.2017, (1♂); YC (1), 13.VI.207, (1♂); YD (1), 14.VI.2017, (1♂); YD (1), 14.VI.2017, (2♀); YD (1), 14.VI.2017,(1♀); YC (1), 15.VI.2017, (1♀); YC (1), 15.VI.2017,(4♀, 1♂); YBL (1), 15.VI.2017, (1♀, 2♂); YÇL (1), 15.VI.2017, (1♀); YDAL (1), 16.VI.2017, (3♂); YS (1), 16.VI.2017, (2♀, 1♂); YÇL (1), 16.VI.2017, (2♂); YD (1), 16.VI.2017, (1♀, 5♂); BA (1), 17.VI.2017, (4♂, 2♀); YBL (1), 21.VI.2017, (1♂); YBL (1), 22.VI.2017, (2♂, 6♀); YK (1), 22.VI.2017, (8♂); YK (2), 22.VI.2017, (2♂, 2♀); YBL (1), 23.VI.2017, (2♂, 5♀); YBL (1), 23.VI.2017, (2♂); YBL (1), 24.VI.2017, (1♀); YDAL (1), 24.VI.2017, (6♂, 6♀); YBL (1), 24.VI.2017, (1♀); U (5), 26.VI.2017, (1♀); YBL (1), 28.VI.2017, (12♂, 8♀); YS (1), 29.VI.2017, (11♂, 6♀); YD (1), 30.VI.2017, (7♀, 4♂); YBL (1), 01.VII.2017, (5♀); YS (1), 02.VII.2017, (3♂), YAC (1), 03.VII.2017, (2♂); U (5), 20.VII.2017, (1♀).

11- *Stictoleptura scutellata* (Fabricius, 1781)*

Material examined: GAV (1), 04.V.2016, (1♀); K (3), 16.VI.2016, (1♂); K (4), 16.VI.2016, (1♀); K (1), 01.VI.2016, (1♀); K (1), 02.VI.2016, (2♂).

12- *Stictoleptura rubra* (Linnaeus, 1758)

Material examined: YC (1), 13.VI.2017, (2♂, 1♀); YBL (1), 14.VI.2017, (2♀); YBL (1), 15.06.2017, (2♀); YK (2), 15.VI.2017, (2♂, 1♀); YC (1), 15.VI.2017, (1♀); YDAL (1), 16.VI.2017, (3♂); YK (1), 16.VI.2017, (1♀); BA (1), 17.VI.2017, (1♀); YAC (1), 21.VI.2017, (1♂); YC (1), 22.VI.2017, (1♂); YBL (1), 22.VI.2017, (1♀); YDAL (1), 24.VI.2017, (2♂); YBL (1), 28.VI.2017, (2♀); YS (1), 29.VI.2017, (2♂, 1♀); YC (1), 30.VI.2017, (8♂, 2♀); YD (1), 01.VII.2017, (2♂); YÇL (1), 02.VII.2017, (1♀); YÇL (1), 03.VII.2017, (1♀); YC (1), 13.VII.2017, (1♀); U (6), 14.VII.2017, (1♂).

13- *Rhagium mordax* (De Geer, 1775)*

Material examined: K (7), 12.IV.2016, (1♀).

14- *Rhagium fasciculatum* (Faldermann, 1837)*

Material examined: K (7), 22.IV.2016, (1♂).

15- *Rhagium bifasciatum* (Fabricius, 1775)

Material examined: K (7), 12.IV.2016, (1♂).

16- *Rhagium inquisitor* (Linnaeus, 1758)

Material examined: U (1), 17.IV.2016, (5♀, 10♂); U (4), 01.V.2016, (2♂, 2♀); U (3), 01.V.2016, (2♀); KAV (1), 21.IV.2016,(5♂); U (3), 20.IV.2016, (3♀, 1♂); Y (5), 01.V.2016, (4♂); Y (3), 09.IV.2016, (4♀, 1♂); K (3), 18.IV.2016, (2♂, 5♀); K (1), 28.IV.2016, (1♀); U (3), 14.V.2016, (1♂); U (2), 06.IV.2016, (1♀); G (1), 18.IV.2016, (2♂); U (2), 20.IV.2016, (2♀); G (2), 18.IV.2016, (1♀); K (3), 28.IV.2016, (1♀); G (1), 14.IV.2016, (2♂); K (7), 23.III.2016, (2♂); G (4), 18.IV.2016, (2♂, 2♀); G (3), 18.IV.2016, (2♀); K (6), 22.IV.2016, (1♂); U (4), 01.IV.2016, (2♂); U (1), 07.IV.2016, (2♀, 1♂); K (7), 12.IV.2016, (2♂, 2♀); U (4), 20.IV.2016, (1♂, 3♀); GAV (1), 14.IV.2016, (2♀, 3♂); U (3), 22.V.2016, (3♀); KAV (1), 21.IV.2016, (3♂); U (2), 09.IV.2016, (3♀, 7♂); Y (8), 14.V.2016, (♀1); U (1), 17.V.2016, (♂1); U (1), 28.V.2016, (♀1); K (5), 22.IV.2016, (1♀); YAC (1), 22.IV.2016, (1♂). K (2), 13.IV.2017, (7♀, 5♂); K (3), 13.IV.2017, (2♂, 10♀); K (4), 13.IV.2017, (4♂, 4♀); Y (1), 17.IV.2017, (6♂, 5♀); Y (2), 17.IV.2017, (5♂, 5♀); Y (3), 17.IV.2017, (5♂, 4♀); U (3), 15.IV.2017, (2♂, 2♀); U (2), 15.IV.2017, (2♂, 3♀); Y (4), 17.IV.2017, (5♂, 4♀); U (1), 28.IV.2017, (2♂, 2♀); U (4), 28.IV.2017, (2♂, 3♀); U (1), 06.V.2017, (2♂, 2♀); Y (5), 01.V.2017, (7♂, 4♀); Y (6), 01.V.2017, (4♂, 4♀); Y (7), 01.V.2017, (6♂, 5♀); K (5), 05.V.2017, (2♂4♀); K (1), 05.V.2017, (10♂, 4♀); K (2), 05.V.2017, (7♂, 4♀); K (3), 05.V.2017, (8♀); U (3), 05.V.2017, (3♂); KF (1), 12.IX.2017, (3♀); Y (8), 04.VI.2017, (1♂); Y (9), 04.VI.2017, (1♀); Y (1), 04.VI.2017, (1♂); K (5), 07.VI.2017, (1♂); BA (1), 11.VI.2017, (4♂).

Subfamily: Cerambycinae

17- *Stromatium auratum* (Böber, 1793)

Material examined: YS (1), 28.VII.2016, (1♀); YS (1), 27.VII.2016, (1?).

18- *Cerambyx dux* (Faldermann, 1837)*

Material examined: YS (1), 18.VII.2016, (1♀); YS (1), 30.VI.2017, (1♀).

19- *Cerambyx scopolii* (Füssli, 1775)*

Material examined: K (5), 11.VII.2016, (1♂); K (5), 23.VI.2016, (1♂); K (4), 04.V.2016, (1♀); K (4), 09.V.2016, (1♀); YAC (1), 23.V.2016, (1♀).

20- *Cerambyx cerdo* (Linnaeus, 1758)

Material examined: YS (1), 27.VII.2016, (1♂); U (3), 03.VII.2016, (1♂); YD (1), 03.VI.2016, (1♀).

21- *Cerambyx carinatus* (Küster, 1846)*

Material examined: KD (1), 29.VIII.2016, (1♀); YS (1), 30.VI.2017, (1♂); YS (1), 20.IX.2017, (1♂).

22- *Clytus rhamni* (Germar, 1817)

Material examined: K (5), 08.VI.2016, (1♀); YS (1), 19.VI.2016, (1♀).

23- *Clytus arietis* (Linnaeus, 1758)

Material examined: K (6), 23.V.2016, (1♀); K (6), 04.V.2016, (2♂); K (5), 13.V.2016, (1♂); K (2), 28.IV.2016, (1♀); K (3), 13.V.2016, (1♀)

24- *Chlorophorus figuratus* (Scopoli, 1763)

Material examined: K (1), 02.VI.2016, (1♂).

25- *Chlorophorus sartor* (O.F.Müller, 1766)*

Material examined: YÇL (1), 07.VII.2016, (1♀); YS (1), 19.VI.2016, (1♂).

26- *Chlorophorus varius* (O.F.Müller, 1766)

Material examined: YÇL (1), 17.VII.2016, (7♀, 2♂); GAV (1), 05.VIII.2016, (4♀); YÇL (1), 07.VII.2016, (2♂, 2♀); YS (1), 10.VI.2016, (1♀); YD (1), 04.VII.2016, (2♂); YS (1), 09.VIII.2016, (1♀); K (5), 23.VI.2016, (2♂); YS (1), 02.VI.2016, (1♂); K (1), 12.VII.2016, (2♀); KYM (1), 19.VIII.2016, (1♀); K (1), 11.VIII.2016, (1♂); K (4), 12.VII.2016, (1♀); YK (2), 02.VI.2016, (2♂); YD (1), 23.VI.2016, (1♀); YS (1), 21.VII.2016, (2♀); K (4), 23.VI.2016, (1♀); YD (1), 27.VI.2016, (1♂); YAC (1), 28.VI.2016, (1♀); K (3), 23.VI.2016, (1♂); YD (1), 30.VI.2016, (1♂); K (5), 11.VII.2016, (1♀); KYM (1), 15.VII.2016, (1♀); YS (1), 01.VII.2016, (1♂); K (3), 12.VII.2016, (1♂); K (2), 03.VII.2016, (1♂); YS (1), 05.V.2017, (4♂, 6♀) ; YD (1), 21.VI.2017, (2♂); YDAL (1), 24.VI.2017, (1♀); K (2), 24.VI.2017, (1♂); U (5), 26.VI.2017, (2♀, 1♂); YBL (1), 28.VI.2017, (3♀5♂); YS (1), 29.VI.2017, (5♂, 5♀); YD (1), 30.VI.2017, (2♂); YC (1), 01.VII.2017, (10♀2♂); YS (1), 02.VII.2017, (1♂); YAC (1), 03.VII.2017, (6♂); K (5), 04.VII.2017, (1♀); K (1), 04.VII.2017, (2♂); U (3), 08.VII.2017, (1♀); U (3), 08.VII.2017, (3♂); YS (1), 11.VII.2017, (2♂, 4♀); U (3), 13.VII.2017, (6♂, 5♀), U (2), 14.VII.2017, (10♀, 11♂), K (3), 15.VII.2017, (1♀); K (4), 15.VII.2017, (1♀); K (5), 15.VII.2017, (1♂); U (5), 16.VII.2017, (16♀, 6♀); U (5), 17.VII.2017, (10♀, 8♂); U (5), 18.VII.2017, (7♀, 8♂); YAC (1), 19.VII.2017, (9♂, 9♀); U (5), 20.VII.2017, (12♂, 8♀); YÇL (1), 21.VII.2017, (6♂, 3♀); YAC (1), 24.VII.2017, (7♀, 8♂); YK (1), 25.VII.2017, (3♀, 9♂); YÇL (1), 27.VII.2017, (11♀, 9♂); YAC (1), 28.VII.2017, (5♀, 5♂); YAC (1), 06.VIII.2017, (1♀); K (1), 06.VIII.2017, (2♂, 2♀); K (4), 26.VIII.2017, (1♂); K (1), 15.IX.2017, (5♂).

27-*Chlorophorus niehuisi* (Adlbauer, 1992)*

Material examined: U (1), 17.07.2017, (1♀)

28-*Plagionotus detritus* (Linnaeus, 1758)*

Material examined: KYM (1), 15.VII.2016, (2♂, 4♀); K (1), 02.VI.2016, (1♀, 1♂); K (5), 11.VII.2016, (1♀, 1♂); K (4), 03.VII.2016, (2♂, 2♀); K (4), 10.VI.2016, (1♂, 3♀); GAV (1), 28.IV.2016, (1♀); K (3), 23.VI.2016, (1♂); K (1), 12.VII.2016, (1♀, 1?); K (2), 12.VII.2016, (1♂); YS (1), 19.VI.2016, (2♂); GAV (1), 04.V.2016, (1♀); K (5), 08.VI.2016, (1♀); K (2), 01.VI.2016, (1♂); K (5), 23.VI.2016.2016, (1♀); K (2), 16.VI.2016, (1♂).

29- *Plagionotus arcuatus* (Linnaeus, 1758)

Material examined: K (3), 23.VI.2016, (3♀, 2♂); K (1), 23.V.2016, (10♂, 6♀); K (3), 01.VI.2016, (1♀); K (5), 08.VI.2016, (6♂); YS (1), 08.VI.2016, (2♀); K (3), 23.VI.2016, (1♀).

30- *Plagionotus bobelayei* (Brullé, 1832)*

Material examined: K (1), 02.VI.2016, (1♂).

31- *Plagionotus floralis* (Pallas, 1773)

Material examined: U (6), 08.VII.2017, (18♀, 20♂).

32- *Isotomus speciosus* (Schneider, 1787)*

Material examined: K (4), 03.VII.2016, (2♀); K (2), 03.VII.2016, (2♂); K (3), 16.VI.2016, (1♀).

33- *Ropalopus clavipes* (Fabricius, 1775)

Material examined: K (3), 08.VI.2016, (1♀); GAV (1), 09.V.2016, (1?); K (4), 08.VI.2016, (1♀); GAV (1), 28.IV.2016, (3♀); K (1), 02.VI.2016, (1♂).

34- C*allidium aeneum* (De Geer, 1775)*

Material examined: K (3), 01.VI.2016, (1♀); K (3), 02.VI.2016, (1♀).

35- *Pyrrhidium sanguineum* (Linnaeus, 1758)*

Material examined: YAC (1), 31.III.2016, (1♀); GAV (1), 28.IV.2016, (2♂); K (7), 31.III.2016, (1♀).

36- P*hymatodes testaceu*s (Linnaeus, 1758)*

Material examined: K (1), 16.VI.2016, (2♂, 3♀); K (3), 02.VI.2016, (6♀, 2♂); K (3), 23.V.2016, (2♂, 2♀); K (4), 08.VI.2016, (12♀, 8♂); K (2), 02.VI.2016, (4♂, 2♀); K (1), 28.IV.2016, (2♂); K (1), 13.V.2016, (3♀); K (1), 23.V.2016, (1♀, 4♂); K (2), 13.V.2016, (5♂); K (4), 13.V.2016, (1); K (4♀), 23.V.2016, (1♀); K (5), 13.V.2016, (5♀, 5♂); K (4), 22.IV.2016, (1♀); K (2), 13.V.2016, (2♂, 2♀); K (2), 18.IV.2016, (1♂, 2♀); K (1), 03.VII.2016, (2♂); K (2), 23.VI.2016, (3♂, 2♀); GAV (1), 09.V.2016, (1♀); K (3), 16.VI.2016, (5♂, 3♀); K (4), 03.VII.2016, (1♂); K (3), 03.VII.2016, (3 ♀); K (4), 03.VII.2016, (3♂); K (1), 08.VI.2016, (2♂); K (5), 23.VI.2016, (5♂, 5♀); K (2), 16.VI.2016, (3♂, 6♀); K (3), 23.VI.2016, (4♂, 4♀); K (3), 23.VI.2016, (5♂, 3♀, 1?); YAC (1), 23.V.2016, (1♀); K (3), 23.VI.2016, (3♂); K (1), 01.VI.2016, (2♂); GAV (1), 16.VI.2016, (3♀); YS (1), 28.VII.2016, (2♂, 2♀); YD (1), 23.VI.2016, (1♀); K (3), 01.VI.2016 (1♂); K (5), 01.VI.2016, (2♀); K (4), 08.VI.2016, (4♂, 4♀); K (4), 16.VI.2016, (1♀); K (1), 01.VI.2016, (1♂).

37- *Phymatodes femoralis* (Linnaeus, 1758)*

Material examined: K (4), 08.VI.2016, (1?); K (4), 13.V.2016, (1♀); K (5), 13.V.2016, (2♂); K (3), 08.VI.2016, (2♀); K (3), 23.V.2016, (1♂); K (1), 23.V.2016, (1♂); K (5), 01.VI.2016,

(1♀); GAV (1), 16.VI.2016, (1♀).

38- *Penichroa fasciata* (Stephens, 1831)*

Material examined: YK (1), 14.IV.2016, (1♀).

39- *Stenopterus kraatzi* (Pic, 1892)*

Material examined: YD (1), 27.VI.2016, (1♂); YÇL (1), 27.VI.2016, (1♀); YS (1), 05.V.2017, (1♀).

40- *Stenopterus rufus* (Linnaeus, 1767)

Material examined: GAV1, 04.V.2016, (1♂); K (4), 03.VII.2016, (1♂); YS (1), 12.VI.2016, (2♀); K (5), 01.VI.2016, (1♀); YS (1), 17.VI.2016, (1?).

41- *Anaglyptus mysticus* (Linnaeus, 1758)*

Material examined: K (4), 22.IV.2016, (1♀); K (2), 18.IV.2016, (1♀); GAV (1), 04.V.2016, (1♂).

42- *Lampropterus femoratus* (Germar, 1824)*

Material examined: YD (1), 27.VI.2016, (1?).

43-*Purpuricenus budensis* (Götz, 1783)

Material examined: K (3), 23.VI.2016, (1♀); K (4), 01.VI.2016, (1♂).

44- *Rosalia alpina* (Linnaeus, 1758)*

Material examined: K (1), 23.VI.2016, (1♀, 1♂); K (3), 03.VII.2016, (1♂).

45- *Hylotrupes bajulus* (Linnaeus, 1758)*

Material examined: K (4), 16.VI.2016, (1♀, 1♂); K (2), 23.VI.2016, (2♂, 1♀); K (3), 02.VI.2016, (1♀, 1♂); YS (1), 19.VI.2016, (1 ♀); U (3), 06.IX.2016, (1♂).

Subfamily: Spondylidinae

46- *Tetropium fuscum* (Fabricius, 1787)*

Material examined: K (1), 01.VI.2016, (1?).

47- *Arhopalus ferus* (Mulsant, 1839)*

Material examined: YS (1), 19.VI.2016, (1♂); K (2), 23.VI.2016, (1♀); U (5), 17.VIII.2016, (1♂); U (5), 25.VIII.2016, (1♀); K (5), 10.VI.2016, (1♀); K (3), 01.VI.2016, (1♂); K (1), 12.VII.2016, (1♀); KYM (1), 08.VIII.2016, (1♀).

48- *Arhopalus syriacus* (Reitter, 1895)*

Material examined: K (1), 12.VII.2016, (1♀); KYM (1), 19.VIII.2016, (1♀, 1♂).

49- *Arhopalus rusticus* (Linnaeus, 1758)*

Material examined: KYM (1), 19.VIII.2016, (2♂, 1♀); G (3), 01.VI.2016, (1♂); K (1), 08.VI.2016, (3♀); K (3), 20.VIII.2016, (1♂); YS (1), 02.VII.2016, (1♀); K (3), 02.VI.2016, (2♂); K (4), 23.V.2016, (2♂); K (1), 01.VI.2016, (1♀); K (3), 11.VIII.2016, (1♂); K (1), 03.VII.2016, (1♂); KYM (1), 08.VIII.2016, (1♀); U (4), 12.VI.2016, (1♀); K (4), 23.VI.2016, (1♂); YS (1), 01.VII.2016, (1♂); K (3), 23.VI.2016, (1♂); U (1), 05.VI.2016, (1♀); K (1), 01.VI.2016, (1♂); YS (1), 19.VI.2016, (1♀); K (1), 11.VIII.2016, (1♂); K (4), 11.VIII.2016, (2♀); K (4), 03.VII.2016, (2♀); K (5), 11.VII.2016, (1♀, 1♂).

50- *Spondylis buprestoides* (Linnaeus, 1758)*

Material examined: K (1), 07.VI.2017, (1♀); K (1), 24.VI.2017, (1♀, 2♂); K (2), 24.VI.2017, (1♂); K (3), 24.VI.2017, (1♀); K (1), 04.VII.2017, (2♂, 2♀).

Subfamily: Lamiinae

51-*Dorcadion triste* (Frivaldzsky, 1845)*

Material examined: KK (1), 30.IV.2016, (1♂).

52- *Dorcadion septemlineatum* (Waltl, 1838)

Material examined: K (8), 12.IV.2016, (1♀).

53- *Agapanthia suturalis* (Fabricius, 1787)*

Material examined: YS (1), 19.VI.2016, (1♀); YS (1), 21.VII.2016, (1♀); YS (1), 16.VI.2016, (1♀); YS (1), 16.VI.2016, (1♂); YS (1), 12.VI.2016, (1♂).

54- *Agapanthia lateralis* (Ganglbauer, 1884)*

Material examined: YS (1), 19.VI.2016, (1♀).

55- *Agapanthia violacea* (Fabricius, 1775)

Material examined: YC (1), 14.VI.2017, (1♀); YDAL (1), 21.VI.2017 (1♂); YS (1), 28.06.2017, (♀1).

56- *Morimus orientalis* (Reitter, 1894)*

Material examined: U (4), 14.V.2016, (1♀); U (3), 02.IV.2016, (2♂); K (5), 11.VII.2016, (1♀); K (5), 02.IX.2016, (1♀); YB1, 12.VIII.2016, (1♂).

57- *Mesosa obscuricornis* (Pic, 1894)*

Material examined: GAV1, 22.IV.2016, (1?).

58-*Phytoecia pubescens* Pic, 1895*

Material examined: YS (1), 13.VI.2016, (1?).

59- *Pogonocherus perroudi* (Mulsant, 1839)*

Material examined: KYM (1), 19.VIII.2016, (1♀); K (3), 11.VIII.2016, (1♂).

60- *Aegomorphus clavipes* (Schrank, 1781)

Material examined: K (5), 01.VI.2016, (1♂); K (5), 16.VI.2016, (1♂).

61- *Exocentrus ritae* (Sama, 1985)*

Material examined: K (5), 01.VI.2016, (1?).

62-*Saperda octopunctata* (Scopoli, 1772)

Material examined: K (5), 14.VI.2017, (1♂); K (3), 24.06.2017, (1♀)

It was observed that the family Cerambycidae in the research area occurs by species belonging to subfamilies, Cerambycinae (46.77%), Lamiinae (19.35%), Lepturinae (22.58%), Spondylidinae (8.06%), and Prioninae (3.23%) (Figure 1). In this study, the subfamily Cerambycinae, Lamiinae, Lepturinae, Spondylidinae, and Prioninae are represented by 30 species in 11 tribes, 12 species in 8 tribes, 14 species in 2 tribes, and 5 species in 2 tribes and two species in one tribe, respectively (Figure 2). The tribe Lamiini of subfamily Lamiinae is the most abundant (Figure 3). The tribe Clytini of Cerambycinae has more species than tribe (Figure 4). The tribe Lepturini of Lepturinae has more species than the tribe Rhagiini (Figure 5). The tribe Asemini of subfamily Spondylidinae occur more species than the Spondylidini tribe (Figure 6). Among all species *Chlorophorus varius* (325 specimens) and *Rhagium inquisitor* (279 specimens) were plentiful. The subfamily Prioninae contains only the tribe Prionini. Evaluation of the species numbers, collected from different altitudes, indicated that species occurrence is related to altitude (Figure 7). Also, it is noted that specimen numbers were higher between May and July.

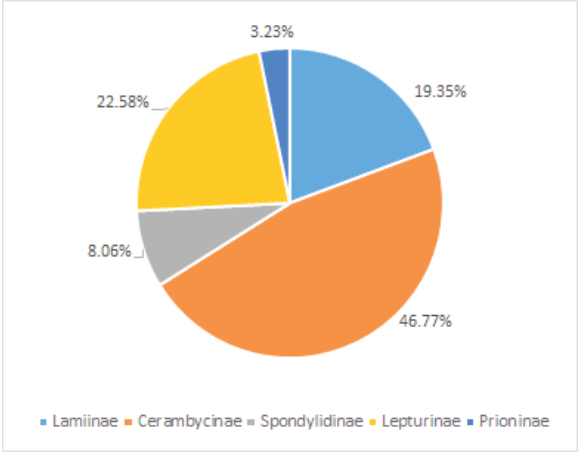


**Figure 1.** Distribution of species by subfamily of the Cerambycidae in Kocaeli, Turkey

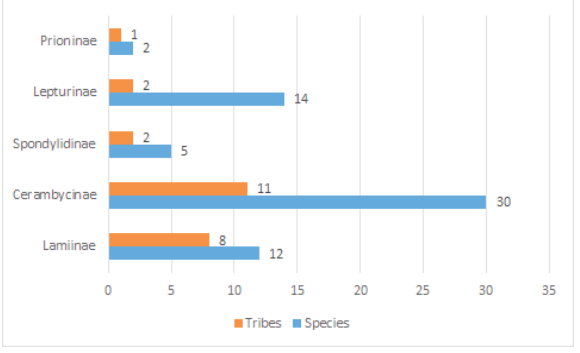


**Figure 2.** Number of tribes and species in the subfamilies of Cerambycidae in Kocaeli, Turkey

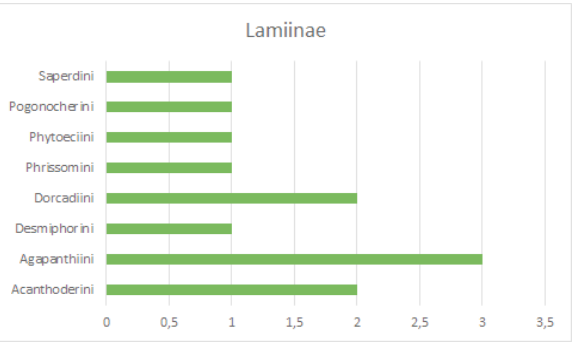


**Figure 3.** Number of species in tribes of the Lamiinae in Kocaeli, Turkey

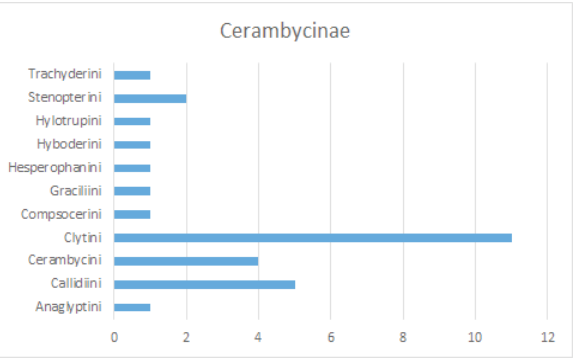


**Figure 4.** Number of species in tribes of the Cerambycinae in Kocaeli, Turkey


**Figure 5.** Number of species in tribes of the Lepturinae in Kocaeli, Turkey

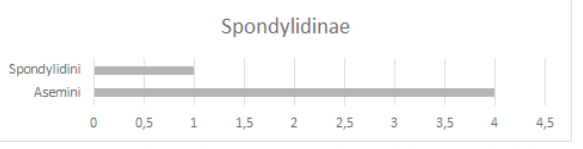


**Figure 6.** Number of species in tribes of the Spondylidinae in Kocaeli, Turkey

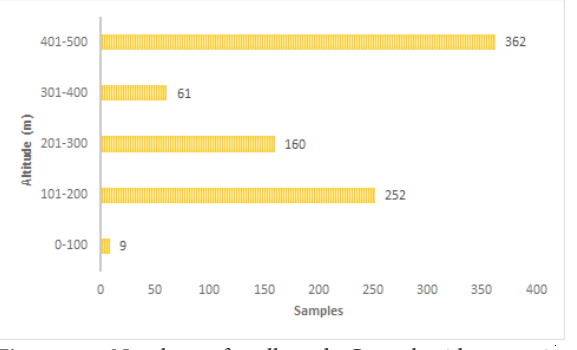


**Figure 7.** Number of collected Cerambycidae species according to altitude in Kocaeli, Turkey

A total of 36 species are the first records for Kocaeli province including *Mesoprionus lefebvrei*, *Leptura aurulenta*, *Anastrangalia dubia*, *Stictoleptura scutellata*, *Rhagium mordax*, *Rhagium fasciculatum*, *Cerambyx dux*, *Cerambyx scopolii*, *Cerambyx carinatus*, *Chlorophorus sartor*, *Plagionotus detritus*, *Plagionotus bobelayei*, *Isotomus speciosus*, *Callidium aeneum*, *Pyrrhidium sanguineum*, *Phymatodes testaceus*, *Penichroa fasciata*, *Stenopterus kraatzi*, *Anaglyptus mysticus*, *Lampropterus femoratus*, *Rosalia alpina*, *Hylotrupes bajulus*, *Tetropium fuscum*, *Arhopalus ferus*, *Arhopalus syriacus*, *Arhopalus rusticus*, *Spondylis buprestoides*, *Dorcadion triste*, *Agapanthia suturalis*, *Agapanthia lateralis*, *Morimus orientalis*, *Mesosa obscuricornis*, *Phytoecia pubescens*, *Pogonocherus perroudi*, *Exocentrus ritae*, *Chlorophorus niiehuisi*.

## DISCUSSION AND CONCLUSION

Kocaeli province is one of the significant regions that under risk of invasion of long-horned bark beetles (Çakmak et al. 2020). Being at the intersection of humid subtropical climate (Cfa) and hot-summer Mediterranean climate (Csa) regions facilitates invasion and adaptation of cerambycid species (Çakmak et al. 2019). Also being located in a critical geographical location at the intersection of Asia and Europe, increase the possibility of the introduction of the pinewood nematode from borer, carried by some cerambycids (Akbulut 2009). Therefore, the survey of cerambycids is getting more critical day by day.

Sum of the reported species from Kocaeli province was 105, up to date (Özay 1997, Küçükkaykı et. al. 2003, Özdikmen and Şahin 2006, Özdikmen 2007, Özdikmen 2008, Özdikmen 2010, Özdikmen 2012, Sama et. al. 2016, Özdikmen 2016, Özdikmen et. al. 2017a, 2017b). As a result of the survey, Cerambycidae fauna has been represented with 62 species, 30 of them are new records for Kocaeli province. Among them, *Leptura aurulenta* was recorded for the second time in Turkey. The first record of the species is from İstanbul (Turgut et al. 2010). *L. aurulenta* was recorded in Europe (France, Spain, Portugal, Germany, Switzerland, Bosnia-Herzegovina, Romania, Ukraine) North Africa (Algeria), and Turkey up to date. This species has the Chorotype W-Palaearctic (Turgut et al. 2010). In Kocaeli province, different species have been determined due to the intense trade of forest products (lumber, timber, wood) from these countries (Çakmak et al. 2020).

Şabanoğlu and Şen (2016) determined that the number of Cerambycidae species has more number of individuals at the higher altitude (1251-1500 m) in Isparta province, Turkey. In this study, Cerambycidae species at low altitudes (100-200 m) were more abundant. The reason for these results might be related to being located at sea level, for Kocaeli.

Cerambycids are needed to be surveyed for their important role in decomposition processes in natural ecosystems and their economic status through interaction with different groups of living organisms including nematodes, bacteria, and fungi.

The new species detected in Kocaeli for the first time is a contribution to our knowledge of Cerambycidae fauna. Nevertheless, periodical surveys are recommended for being updated.

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## ÖZET

Kocaeli, uluslararası limanlardan giriş yapan kereste, tomruk ve ahşap ambalaj malzemeleriyle paketlenmiş ürünler nedeniyle Avrupa ve Akdeniz Bitki Koruma Örgütü (EPPO) alarm listesinde yer alan istilacı orman zararlılarının bulaşması riski altındadır. Bu durum göz önünde bulundurularak Mart 2016 - Ekim 2017 arasında arazi çalışmaları gerçekleştirilip, Kocaeli ili Cerambycidae (Coleoptera) familyası faunistik olarak değerlendirildi. Cerambycidae familyasından beş altfamilyanın 24 tribusu altında 39 cinse ait 62 tür teşhis edildi. Cerambycinae'nin 634 birey ve 30 türle en fazla, Prioninae'nin ise 3 birey ve 2 türle en az temsil edilen altfamilya olduğu belirlendi. Tespit edilen 62 türün 36 tanesi Kocaeli için yeni kayıttır. Bunlar arasında, *Leptura aurulenta* türü Türkiye'de ikinci defa rapor edilmiştir.

Anahtar kelimeler: Cerambycidae, istilacı, orman zararlısı, fauna, Kocaeli

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