SESSION VIII
FORESTRY ENTOMOLOGY

Consequences of a wildfire on beetles (Staphylinidae) in an ancient wood of the Aspromonte National Park (South-Italy)

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The ancient forest of *Pinus nigra* Arnold subsp. *laricio,* located in Serro di Acatti, in the Aspromonte National Park (municipality of San Luca in the province of Reggio Calabria) and falling within an integral reserve, due to the peculiarity of the origin and its geographical position, it represents an interesting natural forest and biodiversity hotspot. The important role played by natural forests in the conservation of biodiversity is also recognized by various international regulations and conventions intended for their protection. In August 2021, a large wildfire involved this area, almost destroying the ancient forest. A study was conducted to understand the effects of the forest fire on entomological biodiversity, following the occurred environmental alteration. One of the groups on which we have focused is the Coleoptera family Staphylinidae, about which this one is the first study conducted to check the effects of a fire. These insects, for the high number of species known for the Italian fauna and the high capability to colonize different kinds of macro and micro-environments, even subjected to stress conditions, are very suitable to be used as bioindicators. The study on the composition of the communities and the relative species abundance was conducted in two Pinus stand by pitfall traps, comparing the data with another neighboring P. nigra stand, with comparable characteristics. In the samplings from June to November 2022, 1741 Staphylinids specimens were collected, representing 42 species, 19 of which present in the burned stand with crown fire, 28 in the unburned stand and 21 in the transition stand with grazing fire (between the burnt and unburnt stands). In addition to the direct effects on the specific composition of the taxon group, there was a population reduction of 78,050% at the burned stand, with 272 specimens collected. The transition stand also experienced a clear reduction (81.43%) compared with the unburnt stand. In addition to the reduction in the number of species and abundances, there was the almost disappearance of *Quedius* sp. (group of Staphylinidae typical of woods), such as *Quedius aspromontanus* Bernhauer, 1908, *Quedius abietum* Kiesenwetter, 1858 and *Ocypus italicus*, with many saproxylic species, indicators of a high degree of maturity and good conservation of forest habitats.
The diversity specific comparison and the species affinities present was carried out with the NMDS analysis and result has highlighted that Staphylinids species present in the burnt and in transition stands were similar and superimposable, while in the unburned stand the species specific composition differs from the other two stands. Likewise, both in the burnt and in the transitional stand, a greater number of Staphylinids fliers species was found, as probably they represent the first colonizers of the area that suffered the effect of the wildfire.

KEY WORDS: Wildfire, Coleoptera, Staphylinidae.

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