



REVIEW OF SPECIES FROM CATEGORY OF PHYLLOPHAGOUS INSECT RELEVANT FOR DECIDUOUS FORESTS OF ROMANIA

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Abstract: The current study aims to be an update of the information on the range of important pests in Romanian deciduous forests with continental extrapolation. An evaluation of the existing database clearly shows that most of the pest species that are currently a problem for all deciduous forests in any area of the country belong to the orders Hemiptera (10) and Lepidoptera (8). Besides these, other categories of Coleoptera (2), Diptera (2), Orthoptera and Hymenoptera (1) were quantified. Stink bugs, aphids, tingids and cycads constituted the Hemiptera group with 41.66% of the total pests and Lepidoptera (which includes both moths and large butterflies) represented 33.33%. The remaining 25.31% is composed of leaf beetles, mining flies, bush-crickets and sawflies. Updating databases and initiating periodic monitoring activities in all forests, regardless of region, are ways of raising awareness of potential economic losses and, first of all, that they lead to the weakening of the main oxygen-producing sources.

• Introduction

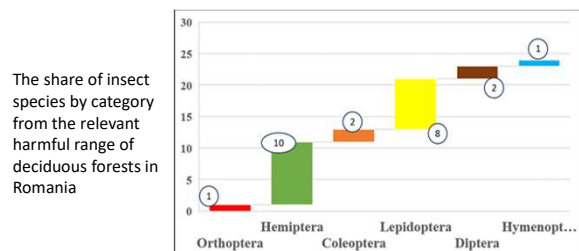
The diversity of species that affect the trees in the natural mixed deciduous forests is a subject not discussed much, on the one hand due to the classification as protected ecosystems and on the other hand because phytosanitary treatments cannot be applied. However, their periodic evaluation is necessary considering that harmful insects (especially phyllophagous ones) can affect the quality of life of the trees through early defoliation. That's why through this work we wanted to see which are the species brought to the attention of specialists through their publications so that we can try in the future to monitor and know what we are looking for in a deciduous forest in western Romania.

Material and method

The study was carried out by analyzing the electronic and physical sources from the USVT Library or the discipline of Entomology, between September and October, 2023. The electronic ones were searched through the Google engine, mostly being websites of professional journals or institutes of regulations in the field of plant protection, so verified sources. These were made up of full-length articles, newsletters and online books. A total of 153 sources were consulted (121 online, 32 physical). The obtained data were centralized addressing aspects of species identification, systematic classification, the first reporting at the level of Europe and the first reporting in Romania.

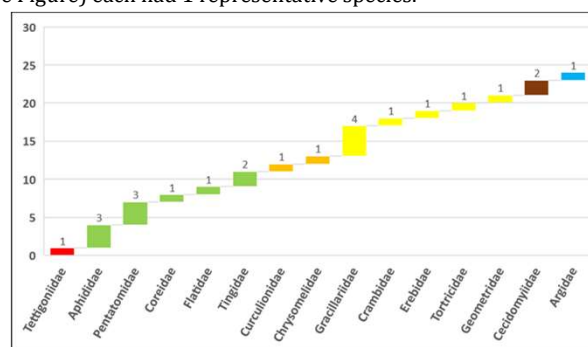
Results and discussions

The division by category of the representative species shows that most were identified from the order Hemiptera (10 species) and Lepidoptera (8 species). From the Coleoptera and Diptera orders, 2 species each were identified, and from the Hymenoptera and Orthoptera orders, only 1 species was identified each (Figure).



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Among the 15 families, the most representative families were Gracillariidae (4), Aphididae and Pentatomidae with 3 species each, Tingidae and Cecidomyiidae (2 species each). The other 10 families (see Figure) each had 1 representative species.



The share of insect species by category from the relevant harmful range of deciduous forests in Romania

Depending on the information found, we made a universal assessment (adapted, following the evaluation methodology of FORSTER ET AL., 1999) of the frequency of attack on leaves in the crown of a tree, using Scale 0-5, where 0 = no damage to leaves/crown, 1 = 0,1-1% of leaves/crown are affected by pest, 2= 2-5% of leaves/crown affected by pest, 3= 6-25% of leaves/crown affected by pest, 4=26-75% of leaves/crown affected by pest, and 5= more than 75% of the leaves/crown are affected by the pest. So, we found the following (Table 2): the species of Metcalfe p., Corythucha a. and Cameraria o. had a score (grade) of 3 while the others had grades of 0, 1 and 2.

Conclusions

The results of the study clearly show that the most frequent phyllophagous insects in deciduous forests in Romania are primarily Hemiptera and Lepidoptera. These and others can also cause defoliation of trees but can spread and infest new areas. The verification and upgrading of continuous information associated with the initiation of periodic forest monitoring activities can reduce the risk of economic losses and awareness of the potential losses of the limitation of the main sources of oxygen.

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