

## Reply to Dr Sergiu Mihuț's comments on our report on Rosia Montana

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Dr Mihuț presents numerous criticisms of our report, most of which we must refute as unsubstantiated, erroneous or based on misunderstanding. The following comments address particular points in his report.

1. We are not “certified persons”. However, we have between us over 50 years of experience in field botany and plant genetics, including regular botanical visits to Transylvania over the last 7 years, and over 200 scientific publications on the subject covering many European countries. We were inspecting the Rosia Montana area as independent scientists, not representing any official body.
2. Our data are not “complex”; they are observations made in the short time available for our visit. We are pleased to confirm that Jones did take all the photographs, during the rather few sunny intervals on our visit.
3. We are not arguing that the area has “matchless patrimonial value throughout Europe” but that it is a landscape of profound European significance. We firmly maintain our stated position that in any other part of Europe Rosia Montana and its hinterland would be “a major candidate for protection and conservation within an international context.”
4. Romania certainly has, as Dr Mihuț states, a remarkable track record for the conservation of important natural or semi-natural ecosystems such as the Danube Delta and parts of the Carpathian Mountains; but Romanian biologists have perhaps not placed enough emphasis on the conservation value of historic anthropogenic ecosystems.
5. Orchids are disappearing even in eastern Europe and orchid-rich grassland is an EU priority habitat. Note that we have several times found *Orchus ustulata* in bloom in late June–early July in southern Transylvania (in UK grassland too this species has an early and a late flowering peak).
6. We confirm that we observed *Sphagnum* at the centre of a flushed mire. Jones not only used intuition and experience to detect this cryptic plant community, but also photographed *Drosera rotundifolia* here, *in situ*.
7. “Passion’ is not a lyrical term, just an unfortunate confusion in the translation: we several times refer to “pastures” (*pasune*), not passions (*pasiune*)!
8. “Variants close to the association” is, in our opinion, equivalent to “transitory forms”. We do not regard phytosociological units as fixed entities, rather as definable points within the continuum of vegetation.
9. The Red-listing of plants in Romania is at present confused, but clearly a number of plants are regarded as rare and threatened in the country.

10. We have no difficulty at all in identifying vegetative *Colchicum autumnale* – the leaves are as distinctive as the flowers.
11. We agree that Habitat 6130 *Calaminaria* has not been reported in Romania, although plant communities in Rosia Montana show clear affinities with associations described from heavy metal-rich substrates in the UK and Belgium. The Romanian communities apparently lack formal identification and are probably endemic.
12. Both of us have a background in ecological genetics, and our observations on ecotypic adaptation and putative speciation derive from extensive experience in this subject over 20–30 years.
13. Our statement that flower-rich grasslands have disappeared from most parts of Europe is no “assertion” (would that it were), as it is based on a considerable body of published data, discussions over many years with colleagues in conservation biology and practical conservation, and our own field studies in several European countries. It can be difficult for Romanian ecologists (surrounded as they are by extensive stands of ‘High Nature Value’ grasslands) to comprehend the level of destruction of this biodiversity-rich and culturally iconic habitat in other European countries. Note that 97% of UK grasslands have disappeared since World War II. The same could happen in Romania.
14. With regard to our cultural comments, pre-Roman Dacian mines have been verified by archaeologists, and Dacian gold has been identified in artifacts from Mycenaean Greece. And we indeed saw traditional thatched barns on the outskirts of Rosia Montana – Jones photographed a barn belonging to Eugen David of Alburnus Maior.
15. We do not state that certain individual species are “rare” – their significance is that they are components of species-rich grassland.
16. Note with regard to the variant of *Anthyllis vulneraria*, stated as wrongly identified, that Akeroyd has researched variation in this polymorphic species for 25 years, including publications on intra-specific taxa in S and SE Europe.
17. Note that Akeroyd did find *Dianthus armeria*. He knows the species well, and indeed added it to the Irish flora in 1993.
18. Our observations and comments have a rigorous scientific basis, although we have invoked cultural and aesthetic arguments, which are an integral part of modern holistic conservation. Biological data in the public arena cannot be seen in isolation. We have presented exactly what we found during our, albeit brief, ‘fact-finding’ visit and have no motives other than to describe features of the area to a general audience. We would dearly have liked to have more time; and had we had more time we would undoubtedly have made further interesting botanical discoveries to supplement the EIA assessment.

We strongly adhere to our thesis that a strong case exists to protect such an area of biological richness, interacting with unique historical-cultural factors. Rosia Montana represents a significant element of what Prince Charles has described as “Romania’s remarkable agrarian culture”. Furthermore, during the last few months Romanian botanists and conservationists have begun to address the need to protect ‘High Nature Value’ farmland. We hope that our observations at Rosia Montana will contribute to this discussion. Traditionally managed anthropogenic habitats, among the most biodiversity-rich in Europe, require quite as much conservation effort as natural and semi-natural ecosystems. Their conservation also provides a focus for innovative sustainable development.