**LECANOMICS: MERGING CITIZEN SCIENCE AND MOLECULAR GENETICS TO SPEED UP SPECIES RECOGNITION AND DELIMITATION IN THE GENUS *Lecanora***

Christian Printzen1\*; Frank Bungartz2; Evgeny Davydov3; Cristóbal Ivanovich1; Steven D. Leavitt4; Edyta Mazur5; Lucia Muggia6; Zdenek Palice7; Lucyna Sliwa5; Mohammad Sohrabi8

1 Senckenberg Research Institute, Frankfurt, Germany; 2 Arizona State University, Tempe, USA; 3 Altai State University, Barnaul, Russia; 4 Brigham Young University, Provo, USA; 5 Polish Academy of Sciences, Krakow, Poland; 6 Università Degli Studi di Trieste, Italy; 7 Czech Academy of Science, Pruhonice, Czech Republic; 8 Iranian Research Organization for Science and Technoloy, Tehran, Iran; \*E-mail: christian.printzen@senckenberg.de

The steadily increasing number of newly described lichen species confirms that lichen diversity is still very imperfectly known. Many regions of the world are poorly explored and species delimitations are often unclear. In a time, when traditional species circumscriptions are increasingly being challenged by molecular genetic data, a lack of communication between field lichenologist and molecular taxonomists can hamper taxonomic progress. The online platform <https://lecanomics.org> attempts to better connect both ends of the taxonomic work-flow: field exploration and verification of potential new species by genetic methods. It offers citizen scientists access to molecular genetic data and in turn provides taxonomists and phylogeneticists with a much wider range of freshly collected samples than available through their own field-work or herbarium collections. Concentrating on the taxonomy of the large genus *Lecanora*, the system acts as an information hub and “data warehouse” for voucher and sequencing data, a limited set of phenotypic characters and high resolution images. A full documentation of lab procedures ("electronic lab journal") is also implemented. The web page went online on 2 January 2019. Until 22 January 2020, more than 40 cooperation partners and citizen scientists had registered ca. 650 records of *Lecanora* species. DNA sequence data was generated for more than 400 of these. To avoid repetitive studies of samples and enable data mining for follow-up projects we will in the future attempt to implement permanent archival of all morphological, chemical and molecular data relevant for integrative taxonomic research on lichens. By integrating existing algorithms for probabilistic species assignment, “Lecanomics Pro” could then be used as a constantly updated web-based lichen identification tool. Funding: CP and CI (German Science Foundation, Pr567/19-1)