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SCIENTIST BY CHANCE: NATURAL SCIENCE FORUMS AS PRECIOUS RESOURCE OF SUITABLE BIODIVERSITY DATA

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butterflies; naturalist forum; biodiversity data.

As far as biodiversity is concerned, forums and social networks store a steadily increasing amount of data on flora, and fauna, collected especially by amateurs, with various degrees of expertise. Are these data potentially useful for the rapid growth of the biodiversity big data systems?

Forums and social networks dealing with natural sciences usually are not involved in any scientific project, not even those of Citizen Science, even if they can be an important, constantly updated and untapped resource of primary biodiversity data.

Thus, we addressed some questions about the "suitability for use" of primary biodiversity data from naturalists forums, specifically related to their taxonomic reliability, and geographical accuracy.

To test the suitability of these data we analyzed the threads from two of the most preeminent Italian naturalist forums, Natura Mediterraneo (FNM) and Forum Entomologi Italiani (FEI). These forums could be important repositories of data because discussions are managed by moderators, which are often skilled taxonomists.

The pilot dataset only concerned butterflies (Lepidoptera, Rhopalocera). A careful examination of threads, where amateurs posted their observations, allowed the development of an introductory dataset. Starting from textual sites descriptions and photos, we verified the correctness of the original validation, with the help of expert taxonomists, and the possibility to obtain accurate spatial and temporal data for each observation. For more than 4,000 observations the matching level between identifications in the forums and experts, and the degree of accuracy of spatial description were evaluated.

This exploratory study exposed the value of assembling biodiversity data from the web, particularly for taxa as butterflies, where validation by expert taxonomists via photographic image is affordable. However, it also revealed some limits and biases, which are typically associated with the lack of a sampling design. These analyses are also a starting point for converting naturalistic forums into efficient and appealing platforms of Citizen Science. The synergistic action of institutions, researchers and citizens scientists is expected to significantly improve the collection of data, and the achievement of additional elements to enhance knowledge and protection of biodiversity. In this context, a massive recovery of past data from forums through the automatic interpretation of forum threads should be carefully evaluated..