Box 26

Cantharella, a database to capitalize natural substances

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When we want to study natural substances[24], whatever their origin, we soon find ourselves confronted with managing a large volume of data of diverse natures and origins:
– sampling sites: country, locality, GPS point, species inventory, environmental/biotope information, etc.;
– taxonomic identification of the sampled organisms, their abundance, physical and genetic characteristics, etc.;
– chemical protocols implemented, molecules identified;
– biological activity assays performed.
In addition, these studies are multidisciplinary and require the support of many specialized collaborators, who are often geographically distant.

In the end, only part of this information will be included in scientific publications and thus permanently recorded. In the long run, therefore, there is a risk that the "raw" data may become unusable or disappear when it could provide historical records and serve as a basis for new projects. In addition, over time, the heterogeneity of paper or computer media, file formats, or the way data is structured make it very difficult to reuse information efficiently.

Cantharella (PETEK and CHEYPE, s.d.), a database dedicated to the study of natural substances has been designed to provide a solution to the various challenges arising from these data, in terms of:
– access and sharing between collaborators or transfer to collectivities;
– analysis and updating;
– long-term sustainability.

This collaborative tool, accessible online and developed from "free" software packages, uses four specialized modules to capitalize all the data from the field collection of organisms through biological assays to identified molecules.

In addition, as part of the Access and Benefit-sharing process (ABS, Nagoya Protocol), the tool provides a platform for the transfer of results to communities, who can thus monitor the research that is being done on their biodiversity. For universities or laboratories wishing to use it, the software is made available under a free license (https://forge.codelutin.com/projects/cantharella).

The IRD's instance of Cantharella, operational since 2010, is capitalizing on data from numerous projects, mainly in the Pacific (about 700 sampling sites and 950 species, and over 7,700 bioassay results).

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