



TerrHum

TerrHum is a scientific open access application. It allows to standardise the topsoil classification and to understand the soil functioning. The full citation reference for this application is as follows:

TerrHum allows to standardize the topsoil (Humipedon) classification and to understand the soil functioning. The full citation reference for this application is as follows:

Zanella G., Zanella A., Bronner T., Pousse N., 2021. TerrHum. From: Humusica Applied Soil Ecology Special issues vol. 122a and 122b, <https://www.journals.elsevier.com/applied-soil-ecology/special-issues>. Classification updated in 2021. Android version: Bronner T., TerrHum, Google Play, Education; original iOS application: Zanella A., TerrHum, App Store, Education. Translation in French and Italian: Tatti D., Ponge J.-F., Le Bayon R.-C., Chersich S., Stanchi S., Carollo L., Zanella A.



First Commission Classification, Trento 2003

To associate TerrHum classification (horizons code and thickness) and geographical coordinates of soil profiles would allow to map (and understand!) the topsoil of our planet.

TerrHum (51.5 Mo) allows the main content of the Humusica 1 and 2 Applied Soil Ecology Special Issues-field guides to be organised and stored on iOS or Android devices.

The Humusica articles, in Applied Soil Ecology Journal (<https://www.journals.elsevier.com/applied-soil-ecology/special-issues>), are the fruit of years of field work, discussions and syntheses carried out by the Humus Group for improving fundamental French, Italian, Austrian, Canadian, Dutch and German keys of humus form classification.

A tri-language version, English, French and Italian is now available. The authors of the Humusica articles used in TerrHum belong to the Institutions whose logo is reproduced in figure 1.

HUMUSICA – Humus Group



Figure 1. Humusica is the title given to organised from 2003 to 2017 annual workshops. They took place in Italy, France and Austria and allowed to dress a humus forms classification. The more than 200 participants (logos of institutions) belong to a still active Humus Group. The TerrHum App logo shows a key of soil and H, O, A horizons.

TerrHum » is an abbreviation of the words Terrestrial (not hydromorphic, not submerged) and Humipedon (organic and organic-mineral topsoil). Initially conceived for the classification of terrestrial systems and forms, the latest version of TerrHum also allows the classification of submerged humus systems - Bas van Delft and Rein de Waal (Wageningen, NL) supervised the classification and sent photographic supplement. The app is built on the indications about humus diagnostic horizons, forms and systems reported and illustrated in many articles published in Applied Soil Ecology Journal, Special Issues n. 122a, 122b: <https://www.sciencedirect.com/journal/applied-soil-ecology/vol/122/part/P1>

Article 4, Terrestrial diagnostic horizons, <https://doi.org/10.1016/j.apsoil.2017.07.005>

Article 5, Terrestrial key of classification, <https://doi.org/10.1016/j.apsoil.2017.06.012>

Article 6, Hydro intergrades, <https://doi.org/10.1016/j.apsoil.2017.05.027>

Article 8, Biological activity and soil aggregates, <https://doi.org/10.1016/j.apsoil.2017.07.020>

Article 9, Semiterrestrial diagnostic horizons, <https://doi.org/10.1016/j.apsoil.2017.05.026>

Article 10, Semiterrestrial key of classification, <https://doi.org/10.1016/j.apsoil.2017.06.035>

Article 13, Bryo, Rhizo, Ligno systems, <https://doi.org/10.1016/j.apsoil.2017.09.043>

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HUMUSICA 1 - Terrestrial Natural Humipedons

Edited by Augusto Zanella, Judith Ascher-Jenuil
Volume 122, Part 1,
Pages 1-138 (January 2018)
[Download full issue](#)

HOW TerrHum WORKS

Touch text or pictures. Touch Horizons, Transitions O/A, Systems and Forms or Help keys for examples, tables or supplemental information. Click on pictures to zoom and spread fingers. Click a time more and get a legend.

WRB or USDA correspondence for soil organic horizons: OL = Oi; OF = Oe; OH = Oa.

In the field by the naked eye, an organic horizon seems made of one organic material. With elemental analyser, the content in organic carbon is > 20.

TerrHum screens (iOS: Figs 2- 7):

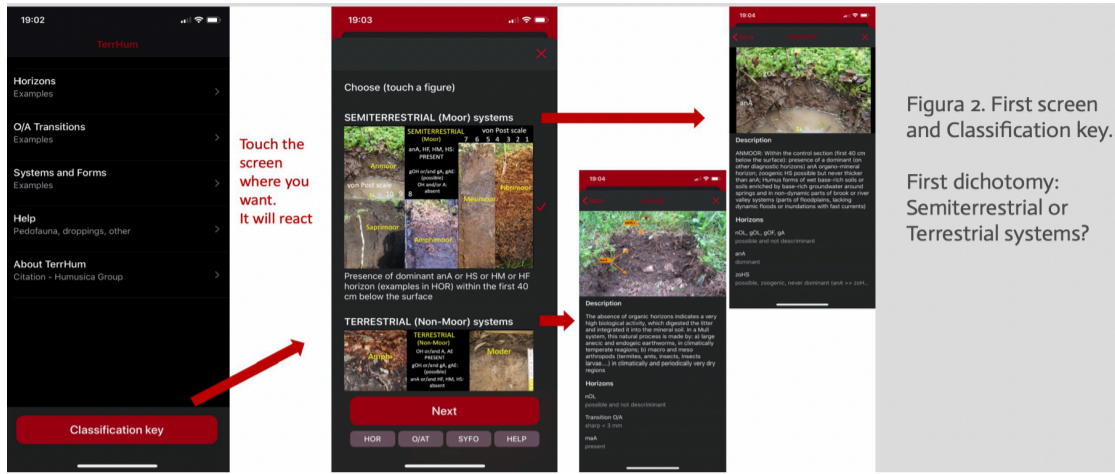


Figura 2. First screen and Classification key.

First dichotomy: Semiterrestrial or Terrestrial systems?

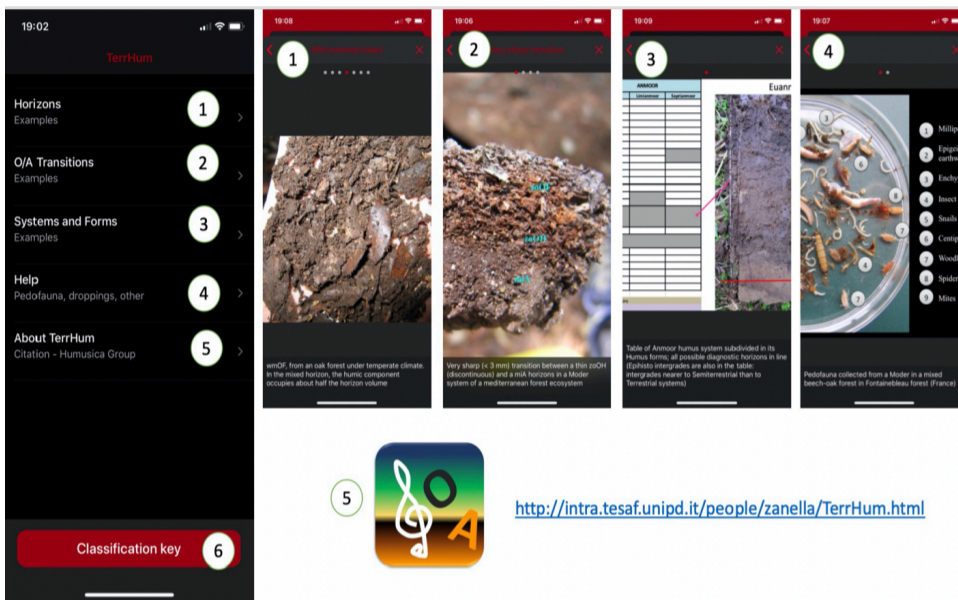


Figura 3. First screen and buttons.

- Five touch-keys:
- 1- Horizons
 - 2- O/A Transition
 - 3- Systems and forms
 - 4- Help
 - 5- About TerrHum
 - 6- Classification key

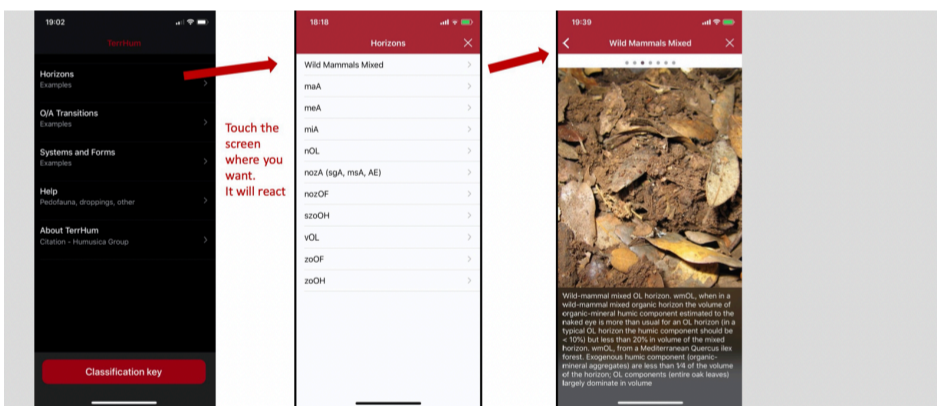


Fig. 4. TerrHum screens' examples, from left to right. Left) Initial screen. The main key of classification is highlighted in red. Above the main classification key, five options allow access to illustrations of humus Horizons, types of O/A Transition between organic and organic-mineral horizons, humus Systems and Forms, particular helpful specific information for the classification synthetic tables; About TerrHum is a link to an external site with information about how TerrHum works and on the history of the Humus Group; centre) Touching "Horizons" on the first screen opens a new screen with a list of horizons; right) Touching "Wild Mammals" opens examples of such horizons. Their photographs can be enlarged setting fingers apart on the screen.

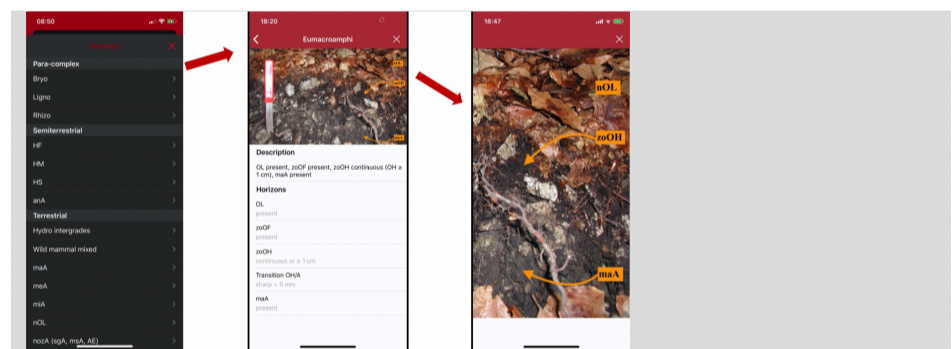


Fig. 6. TerrHum screens' examples. Sequence: "Systems and Forms" (third touch-command on the first screen, on Fig. 4, left)->"Eumacroamphi"(Fig. 6, left)->touch on the photograph -> spread your fingers on the screen to enlarge the image. A legend appears/disappears touching the photograph (as showed in Fig. 4, 5, 12 and 10); two other examples of Eumacroamphi are accessible sweeping the screen with a finger. You can come back to a preceding step touching "<" (top left of the screen), or to the starting point of the process touching "X" at the top right of the screen.

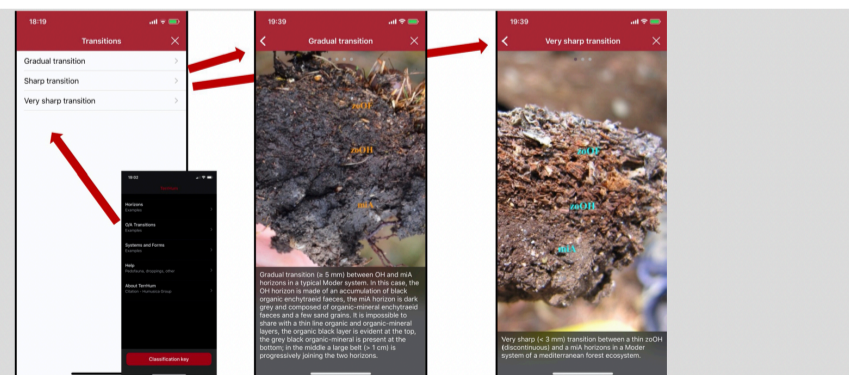


Fig. 5. TerrHum screens' examples. "O/A Transition" touch opens a list of three possibilities, Gradual (centre), Sharp or Very sharp (right) transitions. Open your fingers on the screen for magnifying.

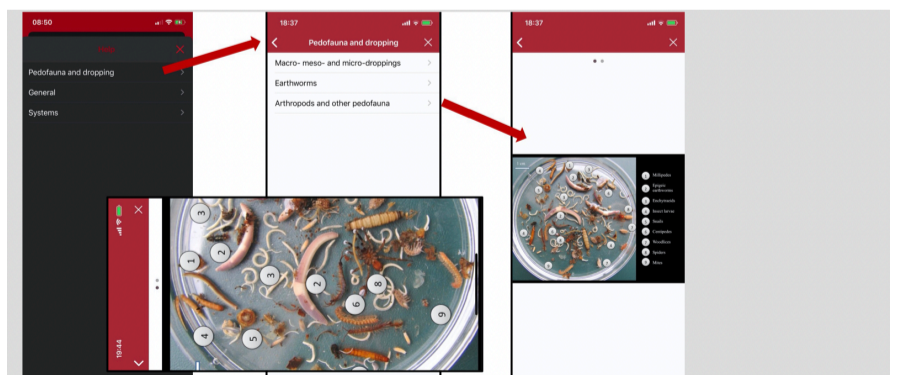


Fig. 7. TerrHum screens' examples. "Help" (fourth touch command on the first screen)->"Pedofauna and droppings"->"Arthropods and other pedofauna". All figures can be magnified, indeed.

TerrHum screens (Android: Figs 8-9)

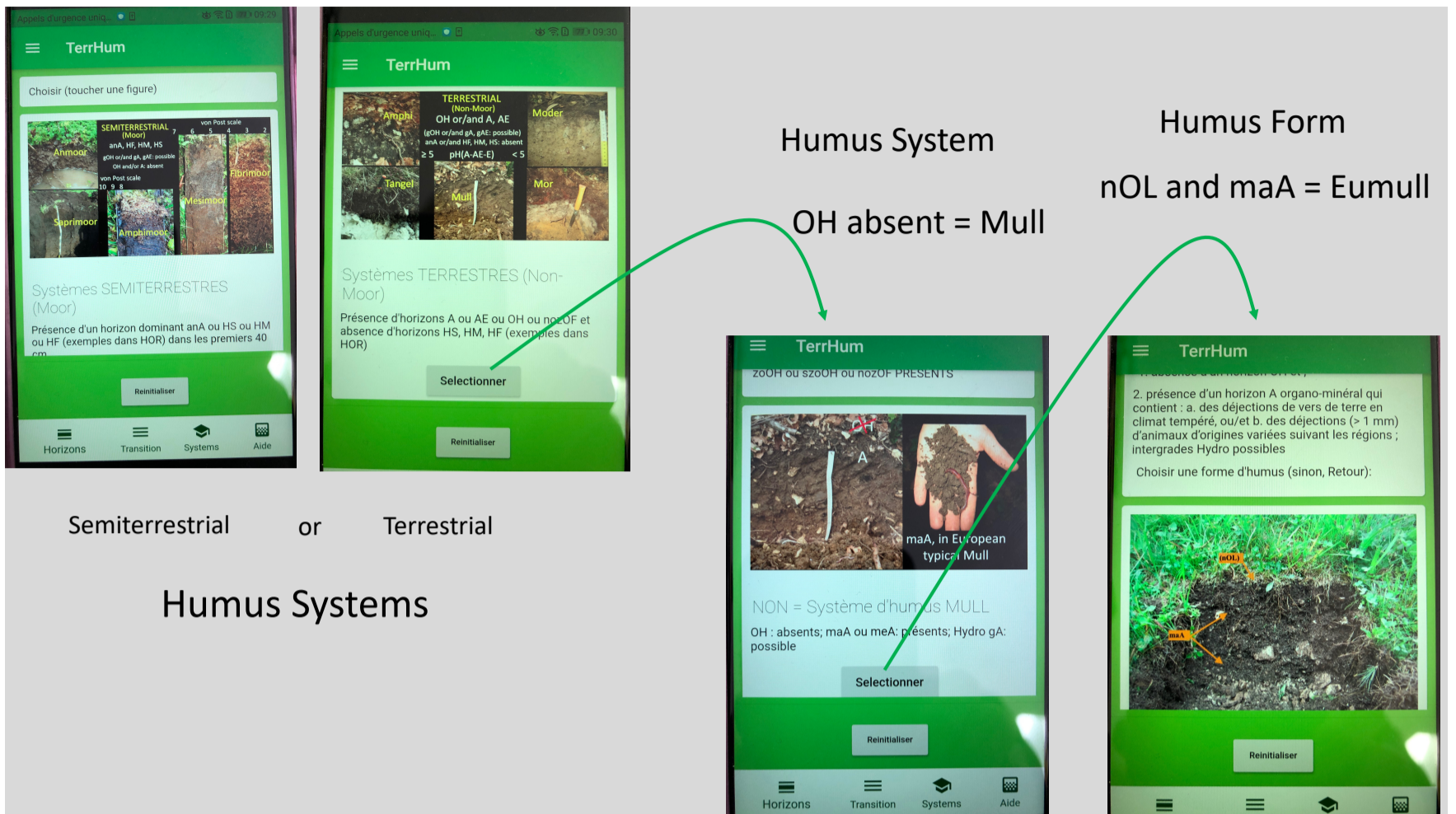


Fig. 8. First screens of Android TerrHum. Semiterrestrial or Terrestrial Humus Systems? Example of Eumull Humus Forms classification, within the Mull Humus System.

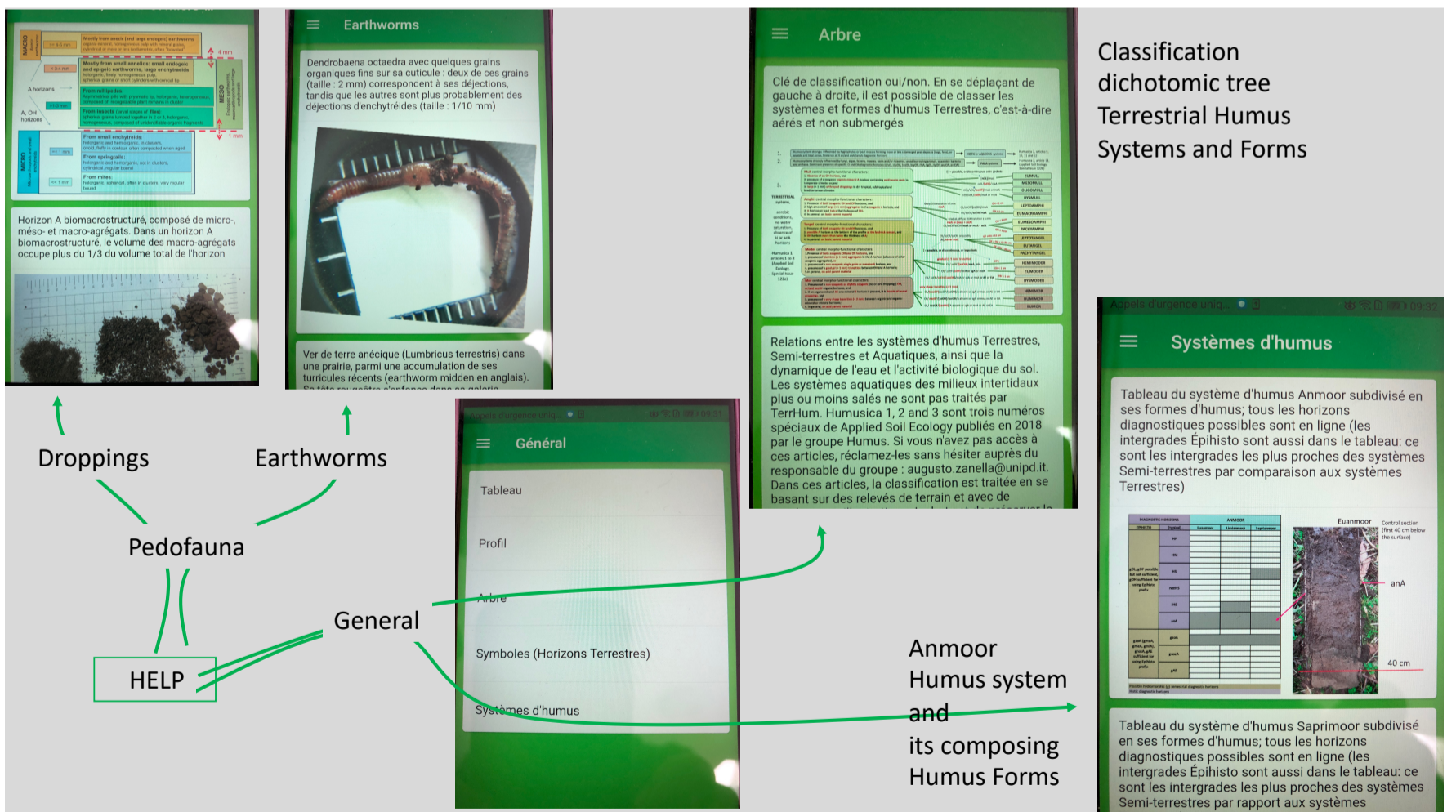


Fig. 9. Examples of Android Terrhum HELP screens: pedofauna information, classification trees and tables.