**GENERAL INFORMATION**

***1. Title of Dataset:*** Simulation of global warming effects on *Theba pisana*

***2. Principal Investigator Contact Information:***

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***3. Date of data collection:*** within the years 2017 / 2018

***4. Geographic location of data collection:*** Avignon (France): climate and behavioural data, Tübingen (Germany): data from lab analyses.

**SHARING/ACCESS INFORMATION**

***1. Licenses/restrictions placed on the data:*** Part of the data derived from another source: Climate data have been put on disposal by Avignon climate Station Montfavet.

***2. Links to publications that cite or use the data:***

Köhler et al.: Experimental simulation of environmental warming selects against pigmented morphs of land snails. Ecology & Evolution, DOI: 10.1002/ece3.7002

**METHODOLOGICAL INFORMATION**

Detailed description of methods for data collection and generation can be obtained from Köhler et al.: Experimental simulation of environmental warming selects against pigmented morphs of land snails. Ecology & Evolution, DOI: 10.1002/ece3.7002

Data processing: The files also contain information on statistical analysis oft he data. The respective statistical tests are mentioned in the files themselves.

***DATA & FILE OVERVIEW***

File List, variables and units of measurements:

***1. Köhler\_et\_al\_climate\_data\_exposure\_time***

Climate data from Avignon climate station Montfavet, from Aug 5 to Sept 12, 2017.

Variables explained in the data sheet,

Units: precipitation [mm], temperature [°C], wind speed [m s-1], radiation [J cm-2]

***2. Köhler\_et\_al\_climate\_data\_long\_term***

Long-term temperature data from Avignon climate station Montfavet, Jan 1988 – Jan 2018.

Variables explained in the data sheet. Unit for Temperatures: [°C]

***3. Köhler\_et\_al\_global\_warming\_simulation\_data***

Physiological endpoints measured in open-top chamber experiments. For explanation see the Köhler et al. paper.

Variables and units:

* Weight loss [% of wet weight] after 8 days and statistics: Morphs: b (black), p (naturally pigmented), s (striped), w (white)
* Mortality [%] in the open-top chambers on days 1-26 of exposure, and statistics. Morphs: b (black), p (naturally pigmented), s (striped), w (white)
* Number of individuals reaching top positions (top) and reaching positions higher than 10 cm above the ground (>10 cm) on days 1-26 of exposure
* Pigmentation intensity of morphs and statistics, raw data and adjusted data (adj., by a constant correction factor of 1.35). Morphs: b (black), p (naturally pigmented), s (striped), w (white)
* Shell temperature of individuals in the field plot, absolute data [°C] and given as percentage oft he maximum soil temperature at this place; and statistics. Morphs: b (black), p (naturally pigmented), s (striped), w (white)
* Pairwise comparison of temperature differences (ΔT) at the shell surface (shell) and the body (inside) [K] in relation to differences in the pigmentation intensity (Δ pigm intens) of different morphs of *Theba pisana*. Morphs: b (black), p (naturally pigmented), s (striped), w (white). Data and statistics
* FOX: Results of the FOX-assay on lipid peroxidation [calculated ˈunitsˈ] (see Köhler et al. paper). Data and statistics. Open-top: open-top chambers. Morphs: b (black), p (naturally pigmented), s (striped), w (white).
* Snail races: behavioural responses (fleeing) to heat: moving, climbing vertical objects, and reaching the top position. Rank sums and statistics. pigm. intens (pigmentation intensity). Morphs: b (black), p (naturally pigmented), s (striped), w (white).
* Early mortality: possible trend of smaller individuals to die earlier than large ones. Data and statistics. Morph natipg: naturally pigmented. Data <1 correspond to relatively smaller individuals, data >1 to relatively larger ones.
* Percentage of white and naturally pigmented (natpig) individuals in the field at Montfavet [%]
* Level of the stress protein family Hsp70 and statistics [relative ˈunitsˈ]. Weight: wet weight of individuals. Morphs: b (black), p (naturally pigmented), s (striped), w (white), mean values from 3 replicate lab experiments. 1,2,3: Numbers of replicate lab experiments. C: lab control, F: field population.

***4. Köhler\_et\_al\_sites\_and\_temp\_vs\_Montfavet***

Characteristics of sampling sites and abundant *T. pisana* populations. For explanation see the Köhler et al. paper.

Variables and units:

GIS coordinates: latitiude/longitude

Av pigm: average pigmentation intensity on a scale from 0 (black) to 255 (white), SD in the next column

n: number of individuals

higher temp than Montfavet: Δ of temperature relative to the reference site

% whites: percentage of the white morph in the population

***5. Köhler\_et\_al\_temperatures\_inside\_outside\_OTC***

Temperature records inside and outside open-top chambers. For explanation see the Köhler et al. paper.

Variables and units:

T, Temp: Temperature [°C] inside and outside the open-top chambers

Time: Date (year-month-day) and daytime (hour:minute:second)

***6. Köhler\_et\_al\_temperatures\_shell\_inside***

Pairwise comparison of *T. pisana* body and shell temperatures under solar radiation. For explanation see the Köhler et al. paper.

Variables and units:

Illumination: solar light intensity [kLux]

Air temp: air temperature [°C]

Air velocity: Wind speed [m/s]

Size: Shell diameter [mm]

Weight: Body mass, wet weight [g]

T: Temperature [°C] of body (inside) and shell

Morphs: b (black), p (naturally pigmented), s (striped), w (white)