



Responsible Editor: Oscar Puebla.

✉ **F** fernando.garcia@unh.edu
fernando.garcia@unh.edu
fernando.garcia@unh.edu
fernando.garcia@unh.edu **4**
fernando.garcia@unh.edu
fernando.garcia@unh.edu **F** fernando.garcia@unh.edu **3**
fernando.garcia@unh.edu
fernando.garcia@unh.edu **44** fernando.garcia@unh.edu **w** fernando.garcia@unh.edu **1**

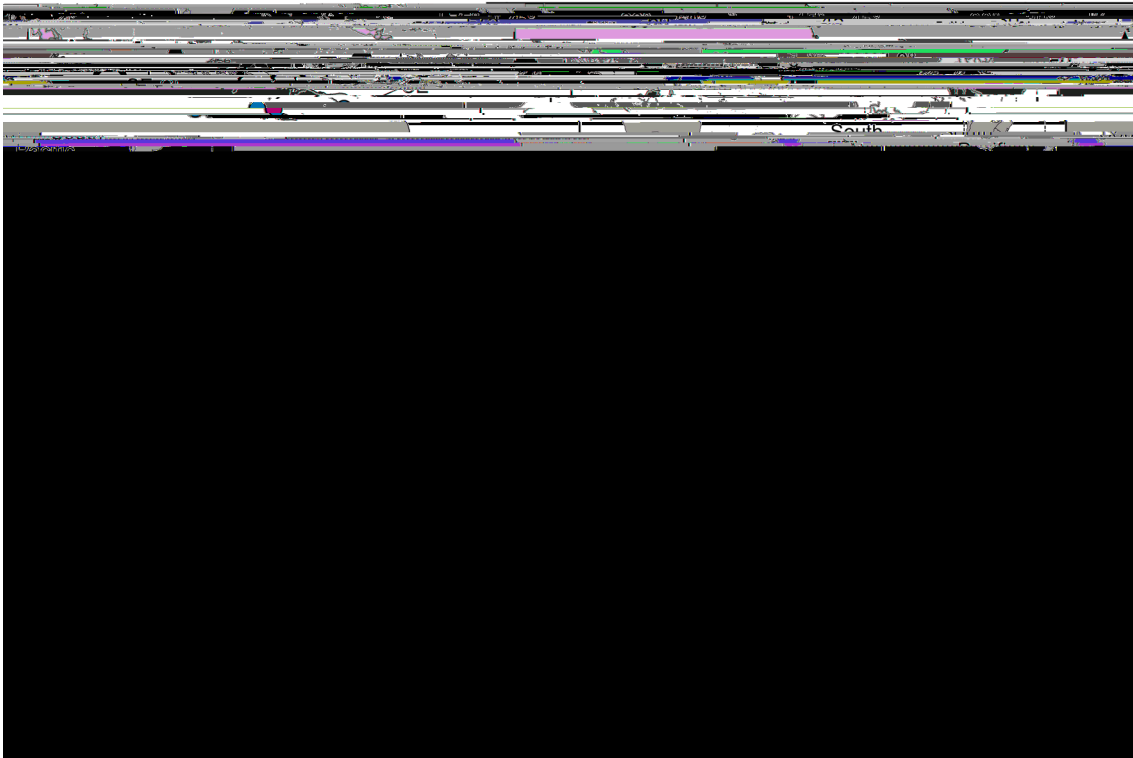
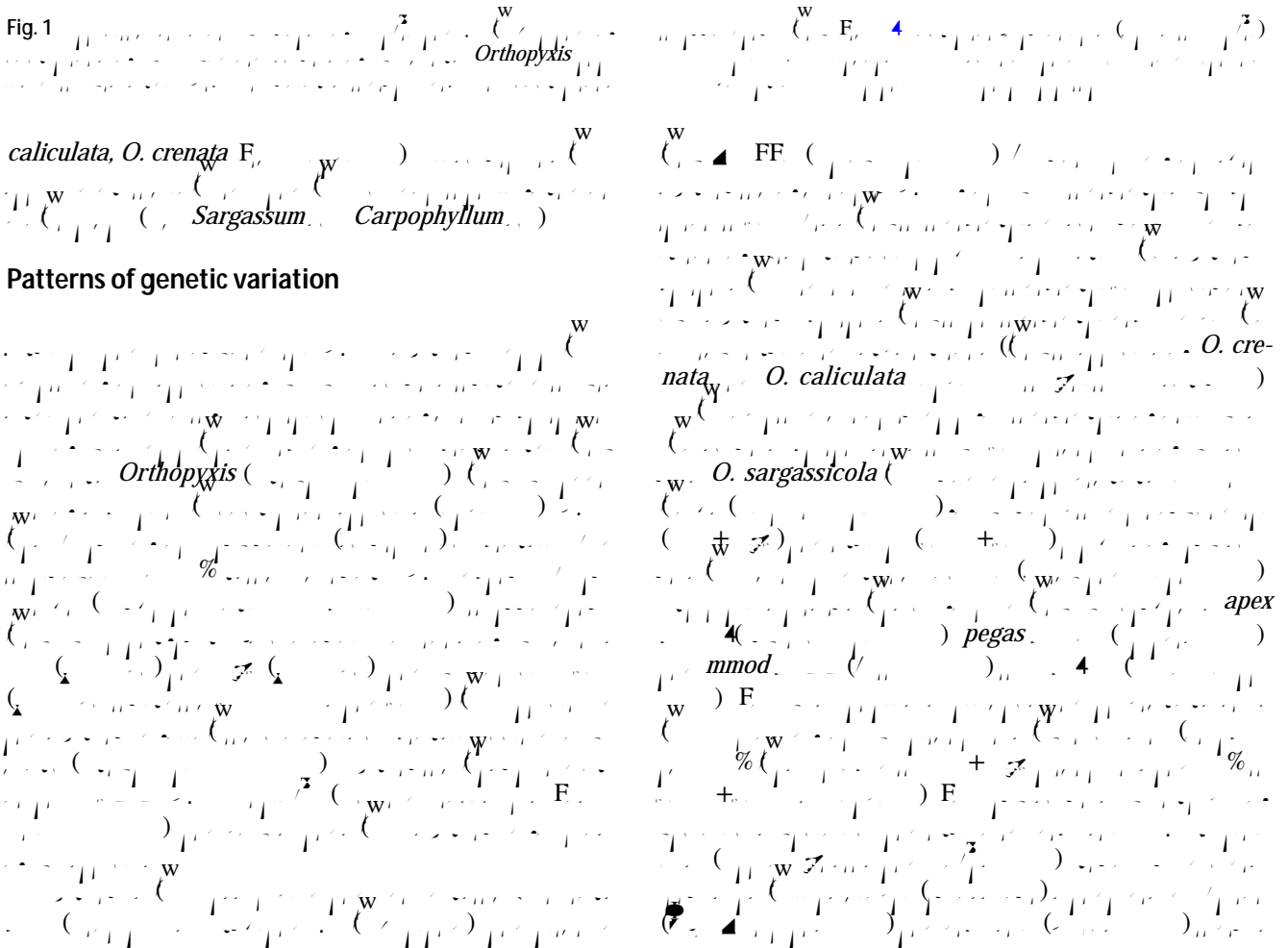


Fig. 1



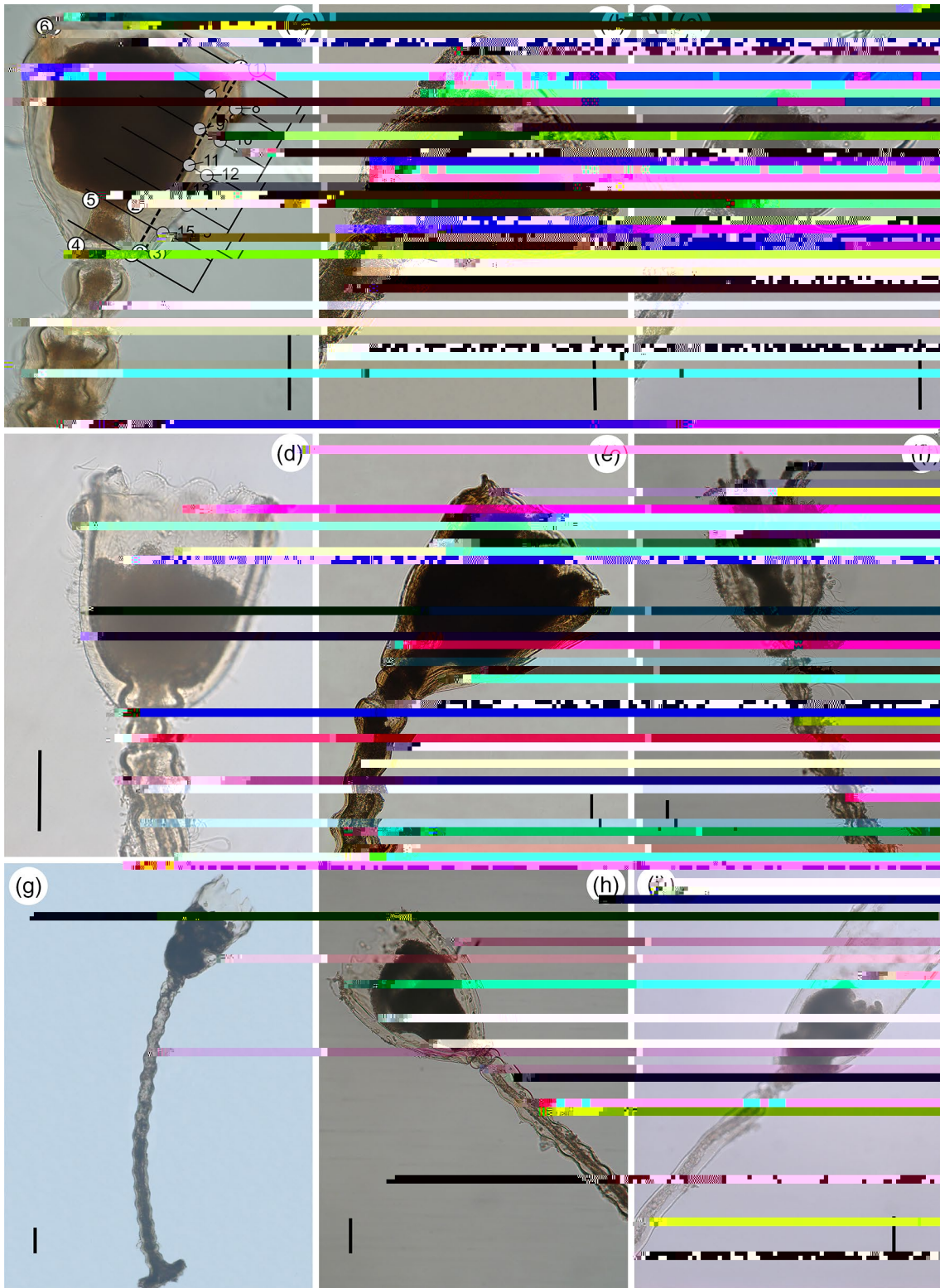


Fig. 2 *Orthopyxis* a *O. calculata* b *O. calculata* c *O. crenata* d *O. crenata* e *O. crenata* f *O. sargassicola* g *O. sargassicola* h *O. sargassicola* i *O. sargassicola*

geomorph *RRPP*
Morpho
(geomorph) *(RRPP)*
O. caliculata

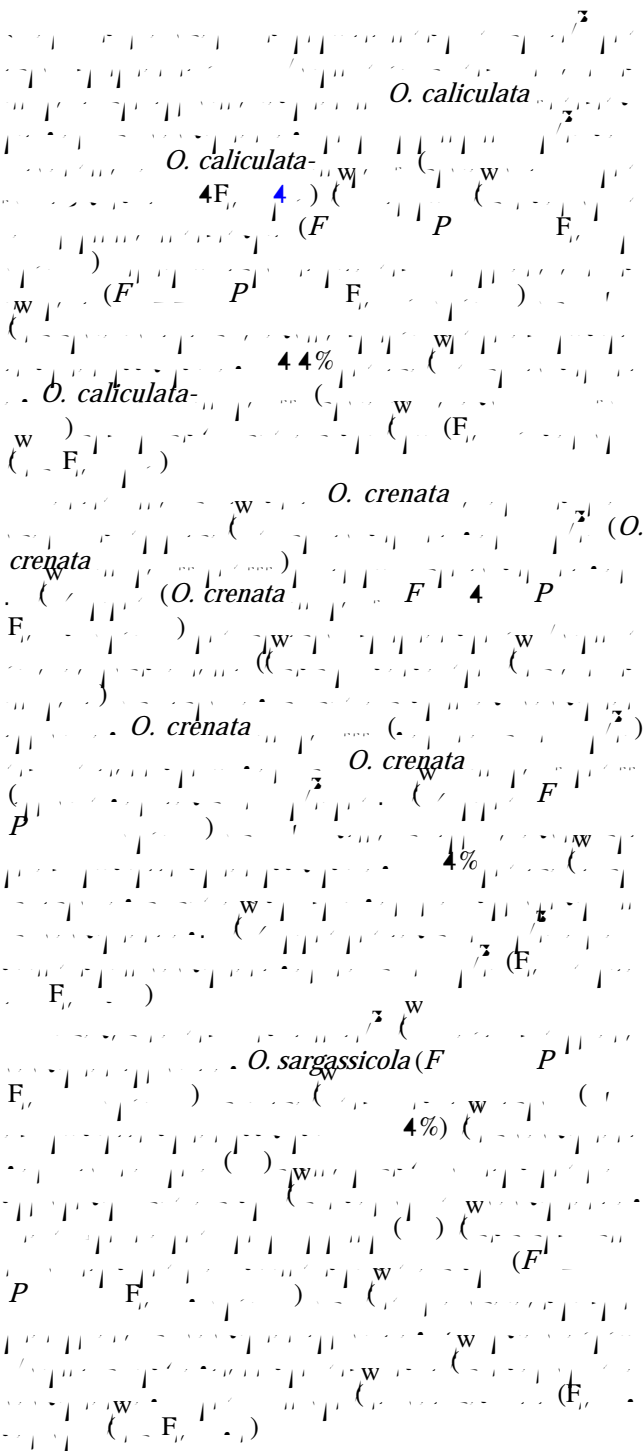
Orthopyxis
geomorph *mixOmics*
usdm
F *(F)*

Environmental data and covariation with morphological data

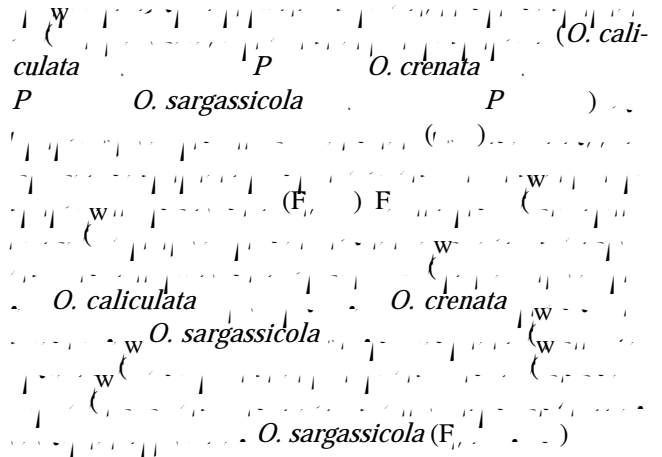
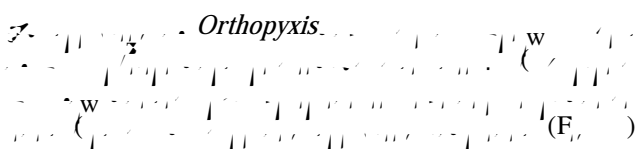
sdmpredictors *leaflet*

O. crenata () *O. crenata* ()

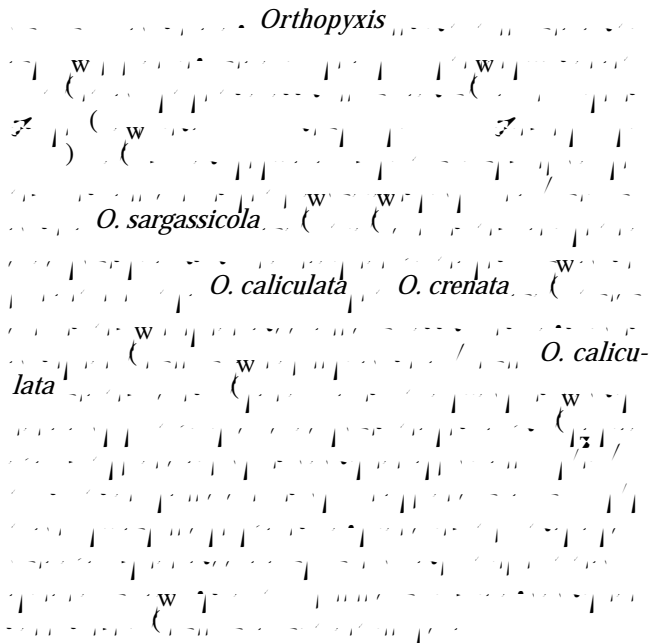
Morphological variation



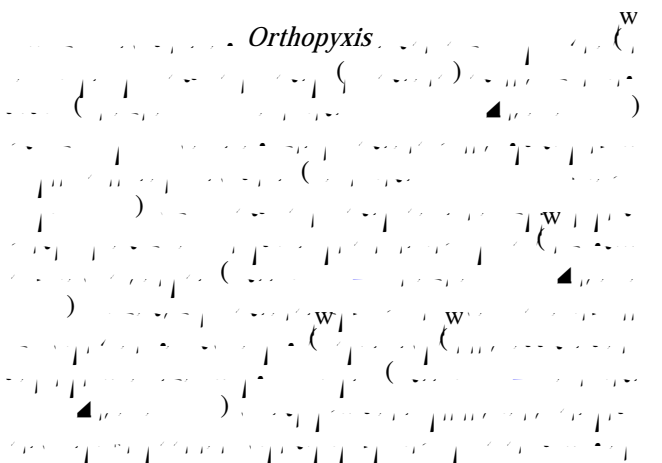
Association between environmental and morphological data



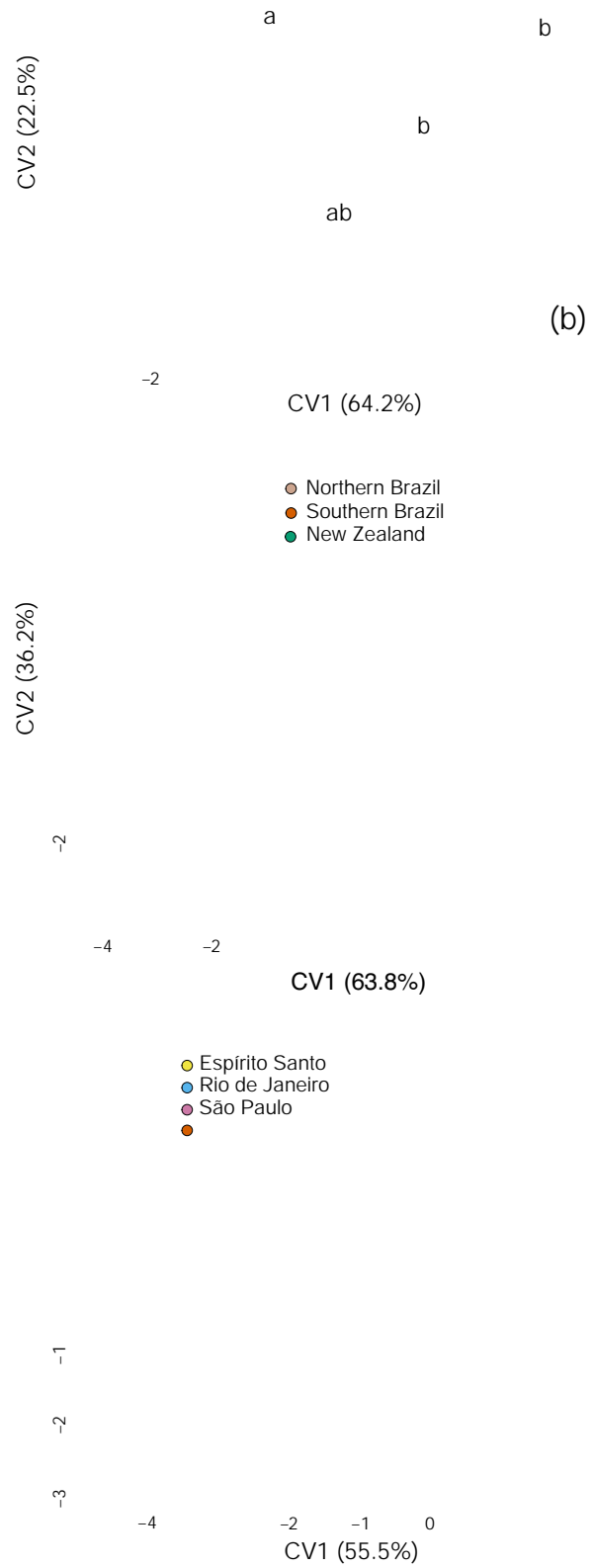
Discussion



Spatial patterns of genetic variation



600




Orthopyxis. The genus *Orthopyxis* is characterized by the presence of a wide, shallow, and slightly curved rostrum, a large, rounded, and slightly flattened carapace, and a pair of long, slender, and slightly curved antennae. The rostrum is the most prominent feature of the genus, and it is used for feeding and defense. The carapace is covered with small, rounded, and slightly flattened tubercles, which are arranged in a regular pattern. The antennae are composed of several segments, and they are used for sensing the environment and for feeding.

Morphological and environmental variation

The morphology of *Orthopyxis* varies significantly between different populations and environments. The rostrum is generally longer and more curved in populations from shallow, protected waters, while it is shorter and more straight in populations from deeper, open waters. The carapace is generally larger and more rounded in populations from shallow waters, while it is smaller and more flattened in populations from deeper waters. The antennae are generally longer and more slender in populations from shallow waters, while they are shorter and more robust in populations from deeper waters.

O. cre-
nata

() ...
() ...
4
() *Dynamena pumilla* ...
w
() ... F 4
4 4 4
w
() FF

 *Macrorhynchia phoenicea*