**Table S1**. Morphological measures (in millimeters), geographic and habitat data from 697 specimens of the 30 species present in the phylogeny of *Pristurus*. Additionally, six specimens from two species without genetic material were taken: *P. saada* and *P. simonettai*. snout-vent length (SVL; distance from the tip of the snout to the cloaca), trunk length (TrL; distance between the fore and hind limb insertion points), head length (HL; taken axially from tip of the snout to the anterior ear border), head width (HW; taken at anterior ear border), head height (HH; taken laterally at anterior ear border), humerus length (Lhu; from elbow to the insertion of the forelimb), ulna length (Lun; from wrist to elbow), femur length (Lfe; from knee to the insertion of the hindlimb) and tibia length (Ltb; from ankle to knee).

**Table S2**. Results of the phylogenetic PCA performed with species data. The table shows the loadings of each variable in each principal component, and the bars indicate the variance explained by each component.

**Table S3**. Results of the PCA performed with specimen shape data. The table shows the loadings of each variable in each principal component, and the bars indicate the variance explained by each component.

**Table S4**. Results from the morphological disparity analyses after removing the species with less than five specimens. The p-values were only calculated when the disparity ratios were higher than 1, since we explicitly hypothesized higher disparity in island species (island colonization as a primary driver of morphological disparity) and/or higher disparity in ground habitats (ecological specialization as a primary driver of disparity).