

SUPPLEMENTARY MATERIAL

Table SI. Defined characters (descriptors), respective states and example species used in the Xper3 AnacroIndex key.

Characters	Definition	Character States	Example species
Ventral vesicles	The penial armatures of <i>Anacroneuria</i> frequently have ventral vesicles in their apical region. When present, these vesicles may be paired and distinct from each other or have their separation imperceptible, appearing as a single large vesicle.	Vesicles absent	<i>mantiqueirae</i>
		Vesicles fused to each other	<i>stanjewetti</i>
		Vesicles distinctly paired	<i>debilis</i>
Dorsal keel	<i>Anacroneuria</i> penial armatures often bear a dorsal keel in their apical region, particularly visible in lateral view. In some species, however, the keel is not dorsally developed beyond the rest of the dorsal sclerite.	Undeveloped	<i>terere</i>
		Developed	<i>debilis</i>
Keel shape in dorsal view	When seen in dorsal view, the dorsal keel may appear as a profile of lines in a variety of configurations. Most of the time, these lines appear to draw the shape of the configurations shown on the right column. Note that these shapes may be stretched or rotated, sometimes appearing as upside-down.	U	<i>amargosa</i>
		V	<i>piranga</i>
		Y	<i>kariri</i>
		) (	<i>polita</i>
Base of apical and basal regions width proportions	A rough estimate of the proportions between the width of the base of the apical and basal region respectively.	Base of apical region narrower than basal region	<i>polita</i>
		Base of apical region subequal or wider than basal region	<i>sallesi</i>
Basal region length proportions	A rough estimate of how long the basal region is in relation to the total armature length.	Basal region occupies less than half of total armature length	<i>vanini</i>
		Basal region occupies half or more than half of total armature length	<i>paulina</i>
Wing membrane color	In most species, the wing membrane is wholly hyaline or uniformly pigmented. In some species a clear hyaline area, or window, can be found amidst a pigmented wing.	Wing pigmentation homogeneous	<i>debilis</i>
		Hyaline window present	<i>sallesi</i>

Table SI. Continuation.

Fore wing vein color	The coloration of the veins on the fore wings in <i>Anacroneuria</i> is variable. Some species may have all veins of a similar color, while others may display particular veins in a distinctly darker or lighter color. This is most often visible in the C, ScP and RA veins.	All veins similarly pigmented	debilis
		C and ScP lighter than remaining longitudinal veins	fiorentini
		C and ScP darker than remaining longitudinal veins	subcostalis
Armature dorsal plate lateral margins	In the penial armature of <i>Anacroneuria</i> , the basal and apical regions are dorsally connected by a bridge. The lateral margins of this bridge may be subparallel, convergent or divergent.	Divergent	itatiaiensis
		Subparallel	paprockii
Shoulder projection	When projected, the shoulders advance apically and surpass their origin point, forming lobes in the apical region.	Not projected	toriba
		Projected	tabatae
Lateral margins of the gonoporal process base	The lateral margins of the gonoporal process, in dorsal view, may be either parallel, convergent or divergent.	Parallel or subparallel	paulina
		Convergent	itatiaiensis
		Divergent	iporanga
Membranous expansion in the lateral furrow	The endophallic membrane is exposed by the lateral furrow. In some species, this membrane may be expanded laterally and clearly visible in dorsal view.	Not expanded	paulina
		Expanded	debilis
Gonoporal process notch	The gonopore may have a simple rounded shape or a longer, sharper shape. When long and sharp, the gonopore gives the gonoporal process a deeply notched appearance, often visible in dorsal view.	Without notch	debilis
		Notched	toriba
Gonoporal process apex	The apex of the gonoporal process may have a couple of distinct appearances. It may be broad, thin, round, truncated or sharp. When truncated, the very tip of the gonoporal process appears as if it were cut off, and can either be broad or thin. When not truncated, it will either be clearly round or sharp.	Either rounded or sharp	itatiaiensis
		Truncated	kariri
Hook width	The hooks of the penial armature may have the same thickness throughout their extension or have distinct wide and thin portions.	Uniform throughout extension	debilis
		With distinctly wide and thin regions	atrifrons

Table S1. Continuation.

Hook curvature	The hooks of the penial armature may be straight, curved on a single plane or curved in more than one plane. It is more common for the hooks to be regularly curved following the frontal plane. When curved on more than one plane, the hooks often bend dorsally in a slight corkscrew.	Curved on a single plane	debilis
		Curved on more than one plane	singularis
		Mostly straight	piranga