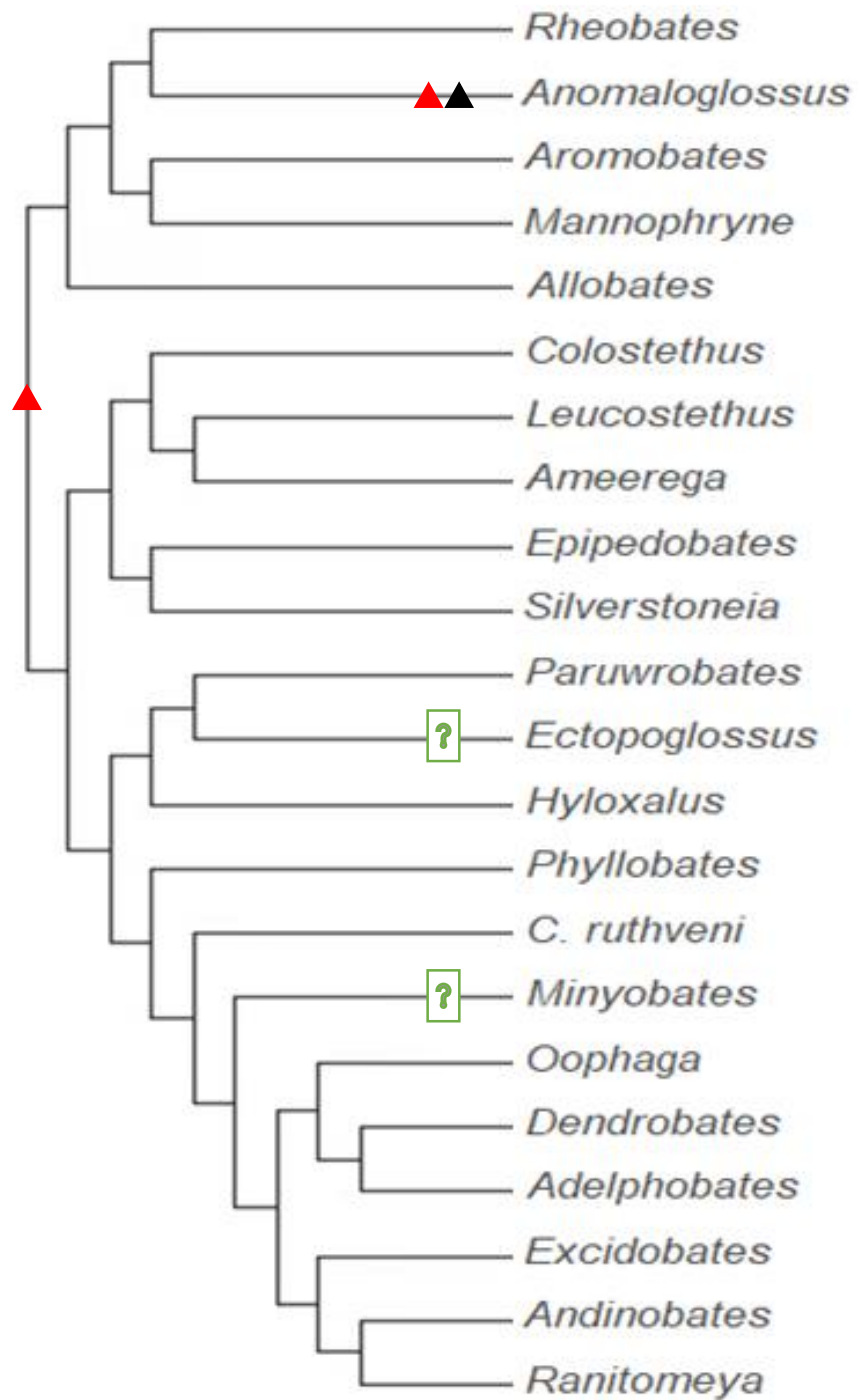


93. Larval caudal coloration

- ▲ 0. vertically striped
- ▲ 1. scattered melanophores clumped to form diffuse blotches
- ▲ 2. Evenly pigmented

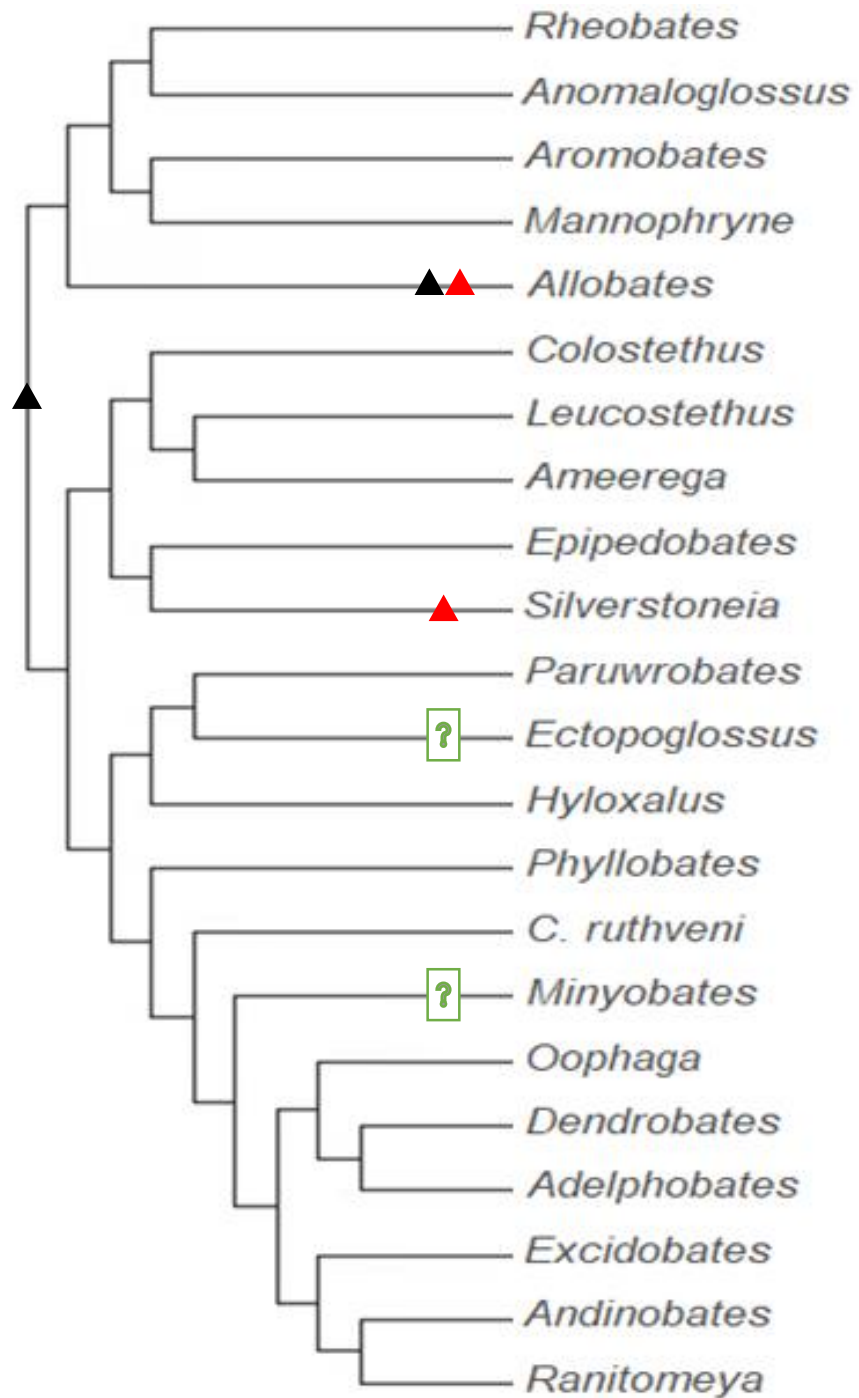
Nonadditive.



94. Larval oral disc occurrence

▲ 0. absent

▲ 1. present



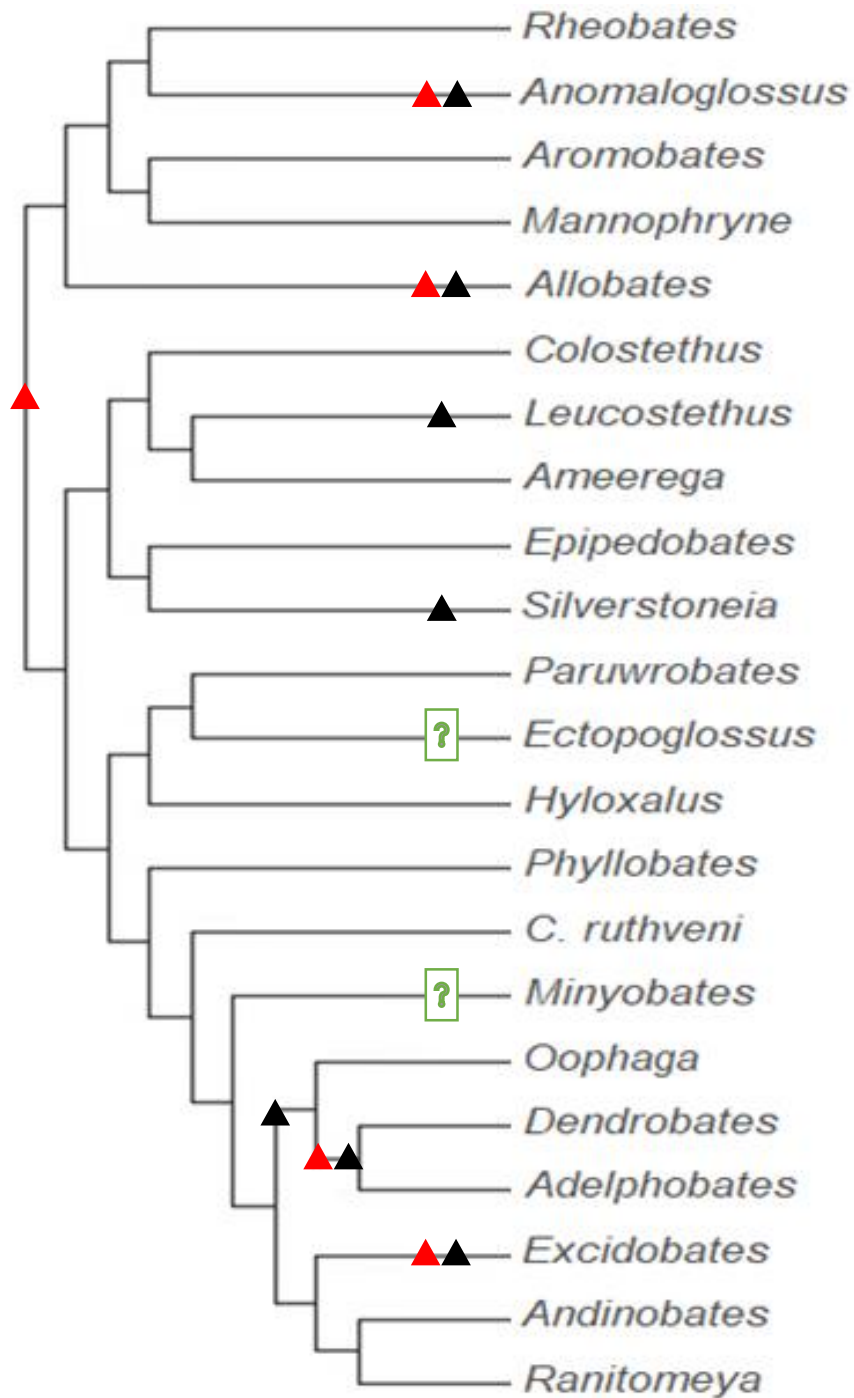
95. Larval oral disc morphology

▲ 0. "normal"

▲ 1. umbelliform

▲ 2. Suctorial

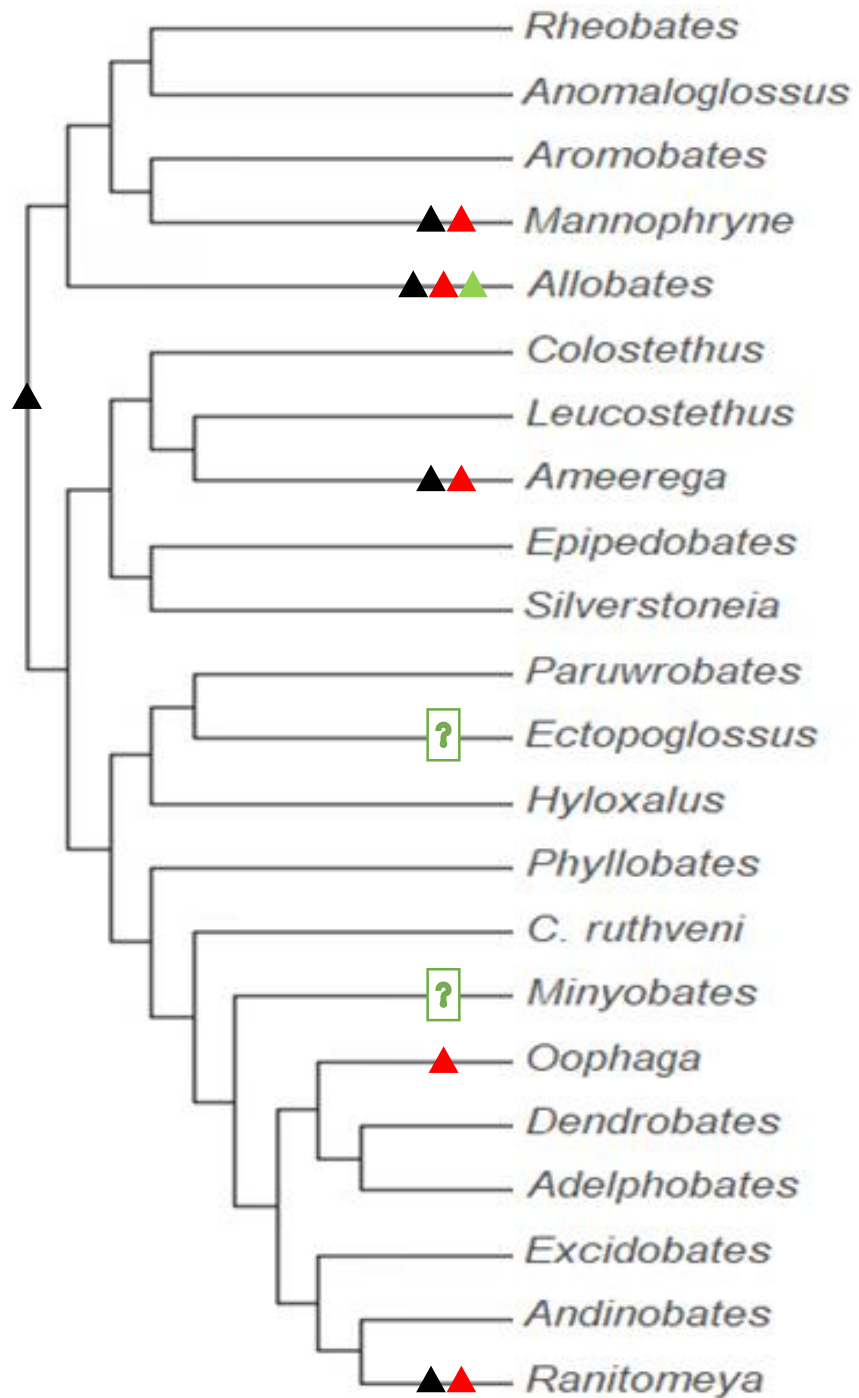
Nonadditive.



96. Lateral indentation of larval oral disc

▲ 0. absent (not emarginated)

▲ 1. present (emarginated)



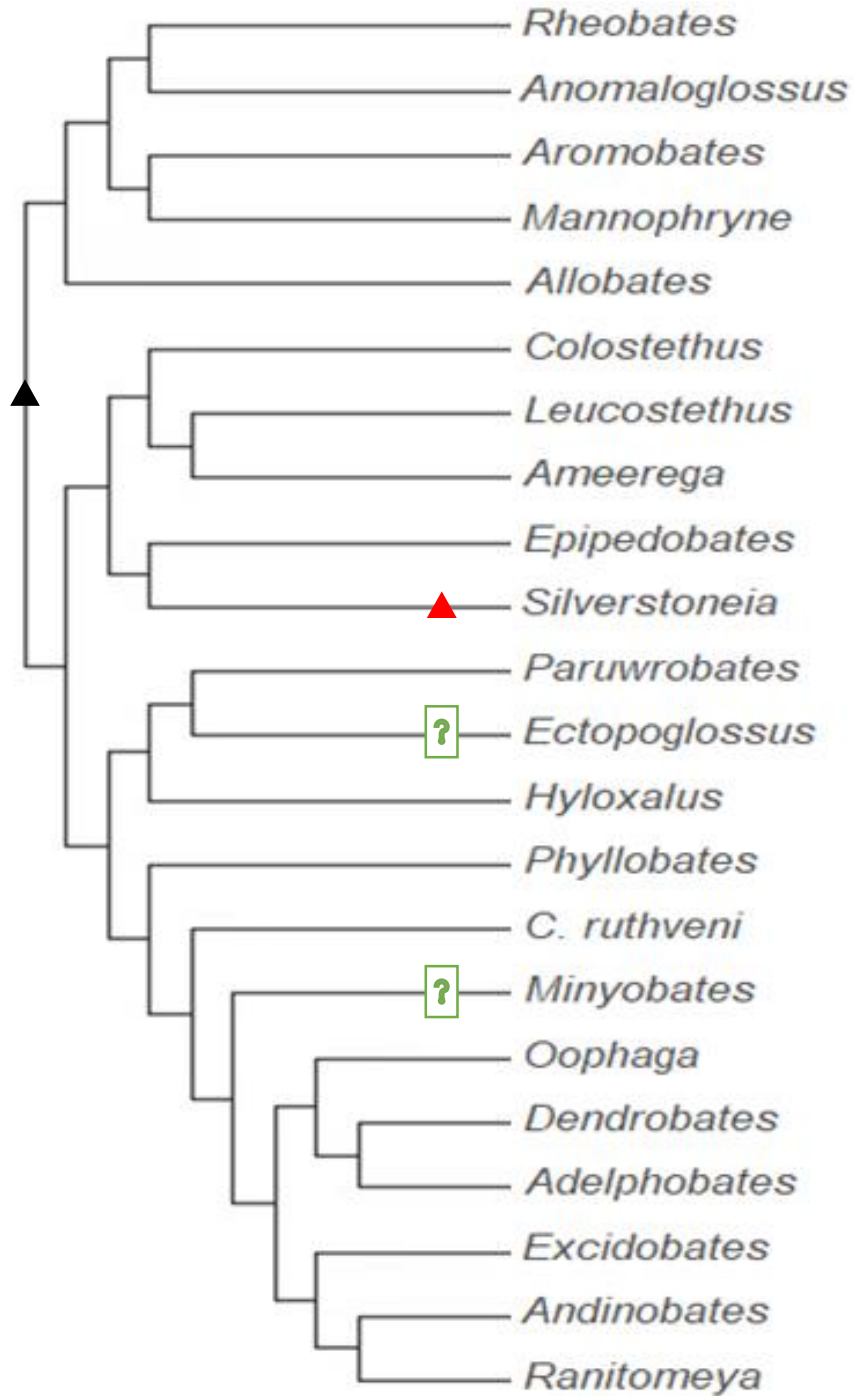
97. Larval marginal labial papillae size

▲ 0. short

▲ 1. enlarged

▲ 2. greatly enlarged

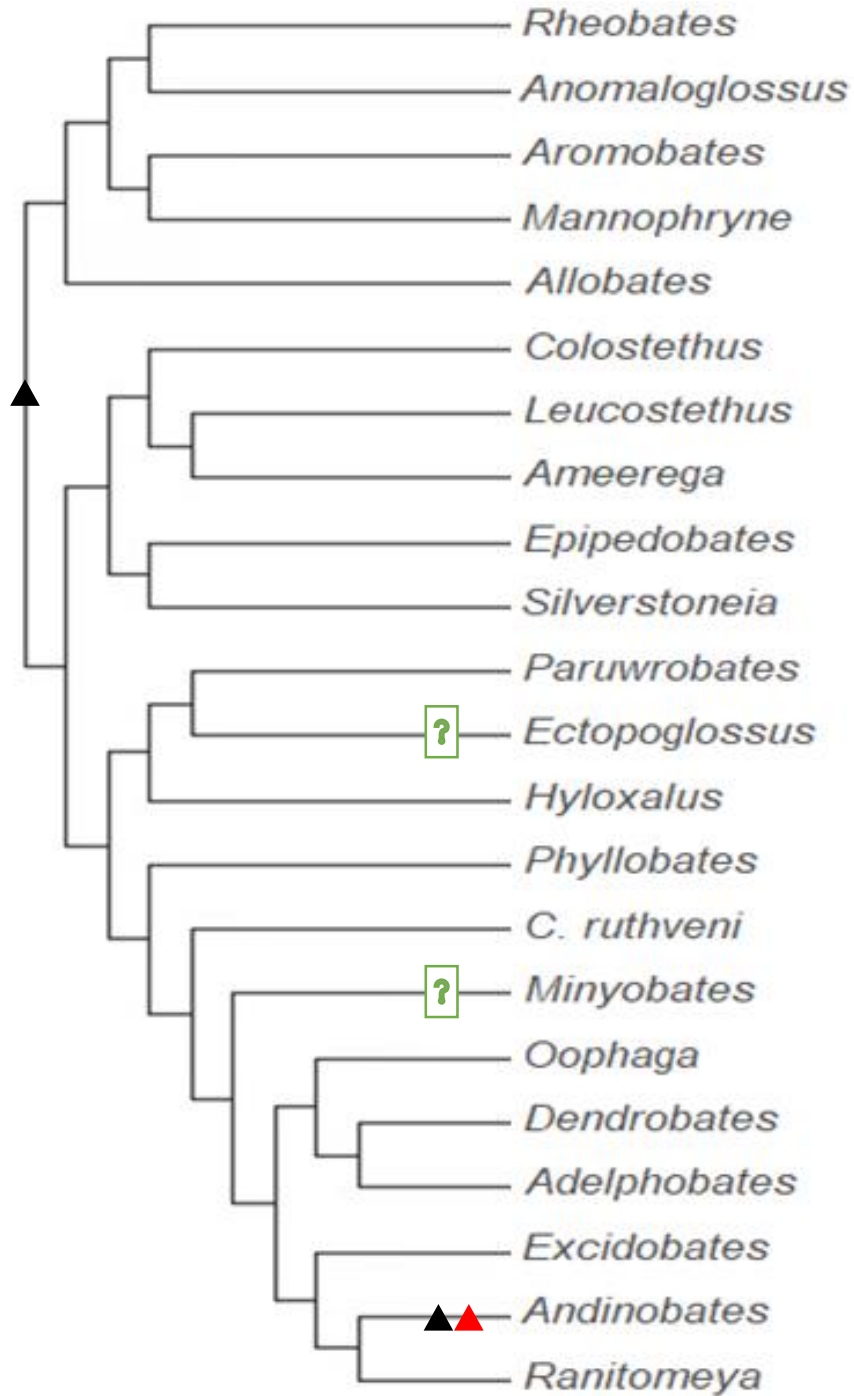
Additive.



98. Submarginal papillae of larval oral disc

▲ 0. absent

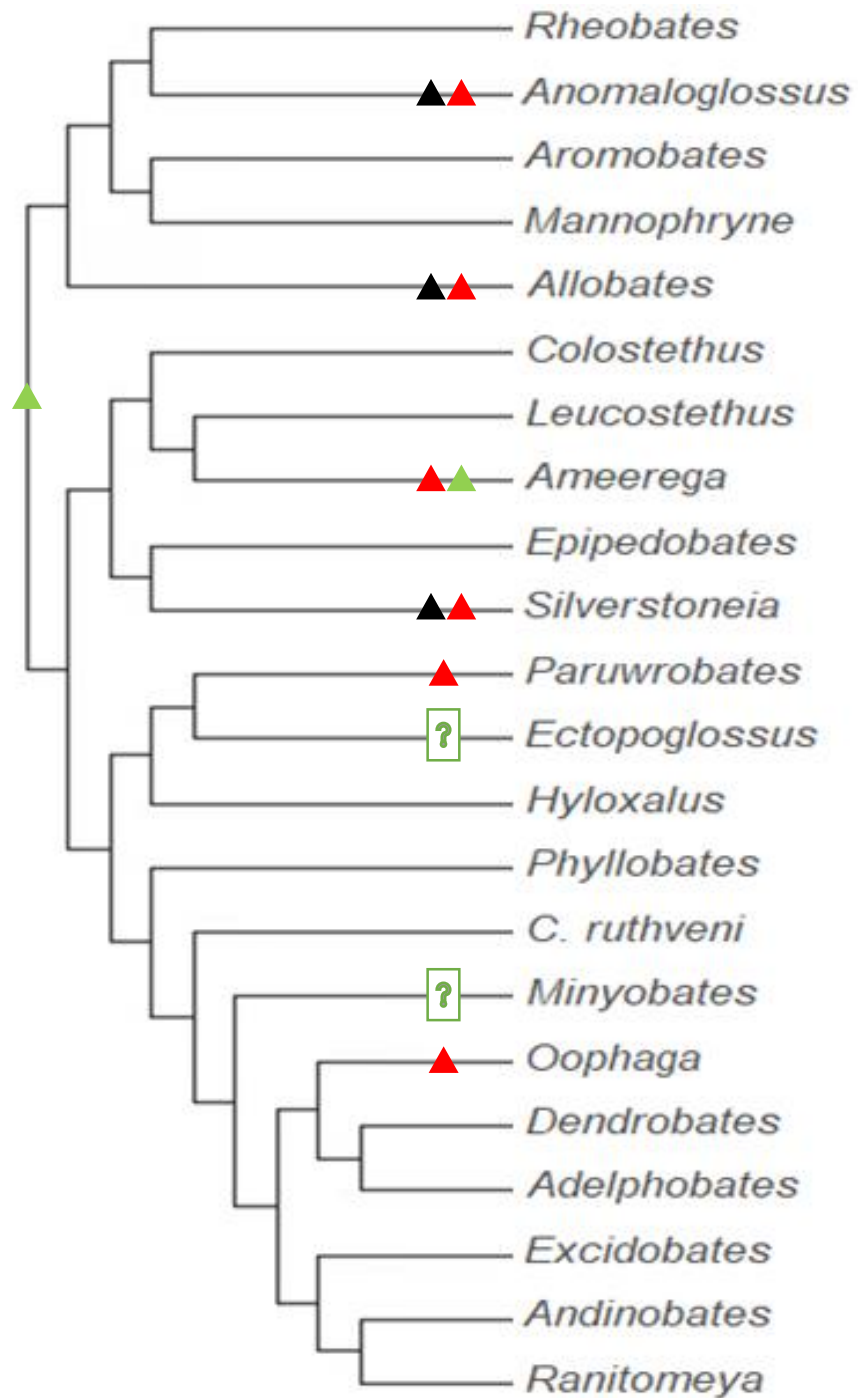
▲ 1. present



99. Median gap in larval marginal papillae of lower labium (PL-gap)

▲ 0. absent

▲ 1. present



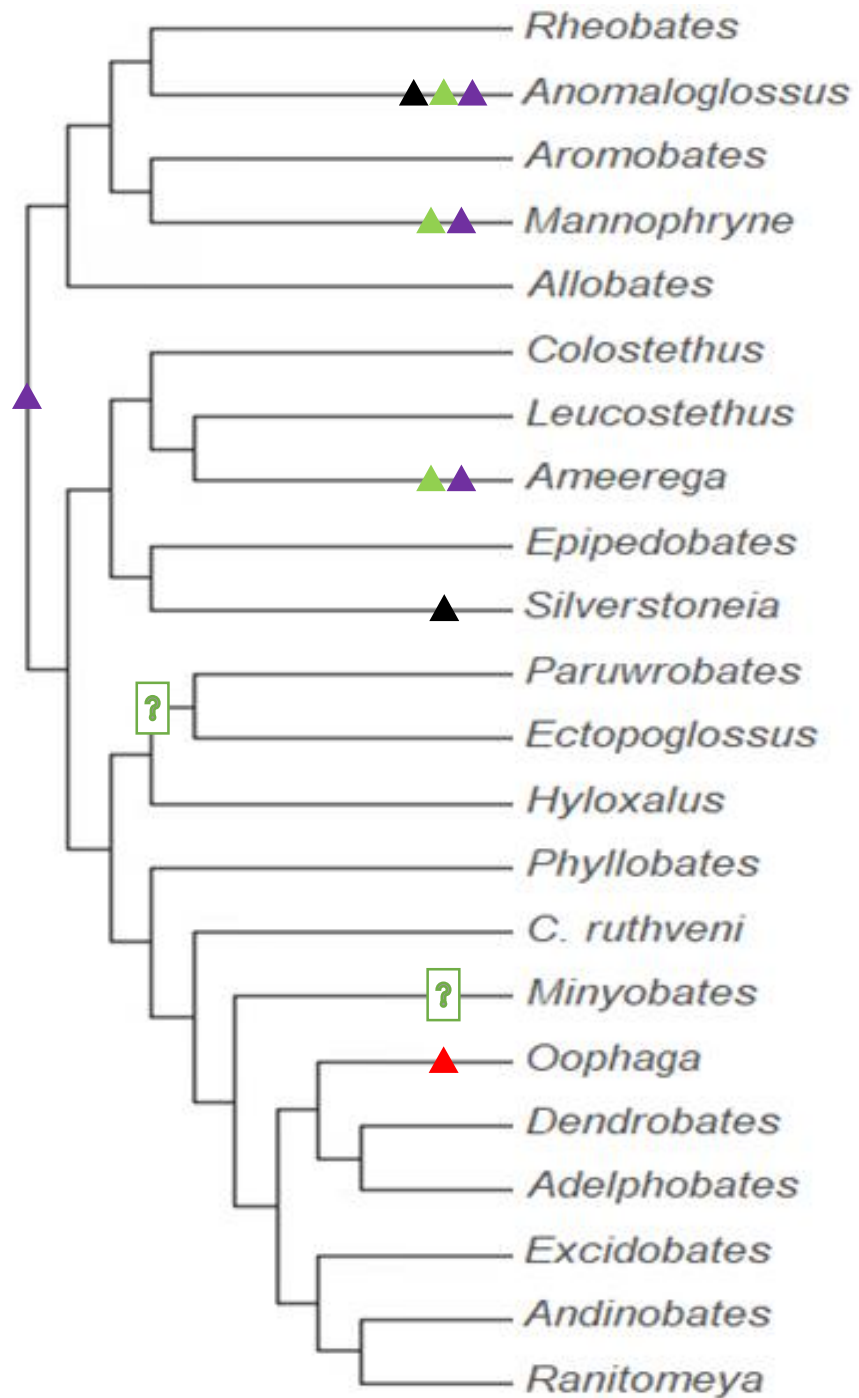
100. Anterior larval keratodont rows

▲ 0. zero

▲ 1. one

▲ 2. two

Additive.



101. Posterior larval keratodont rows

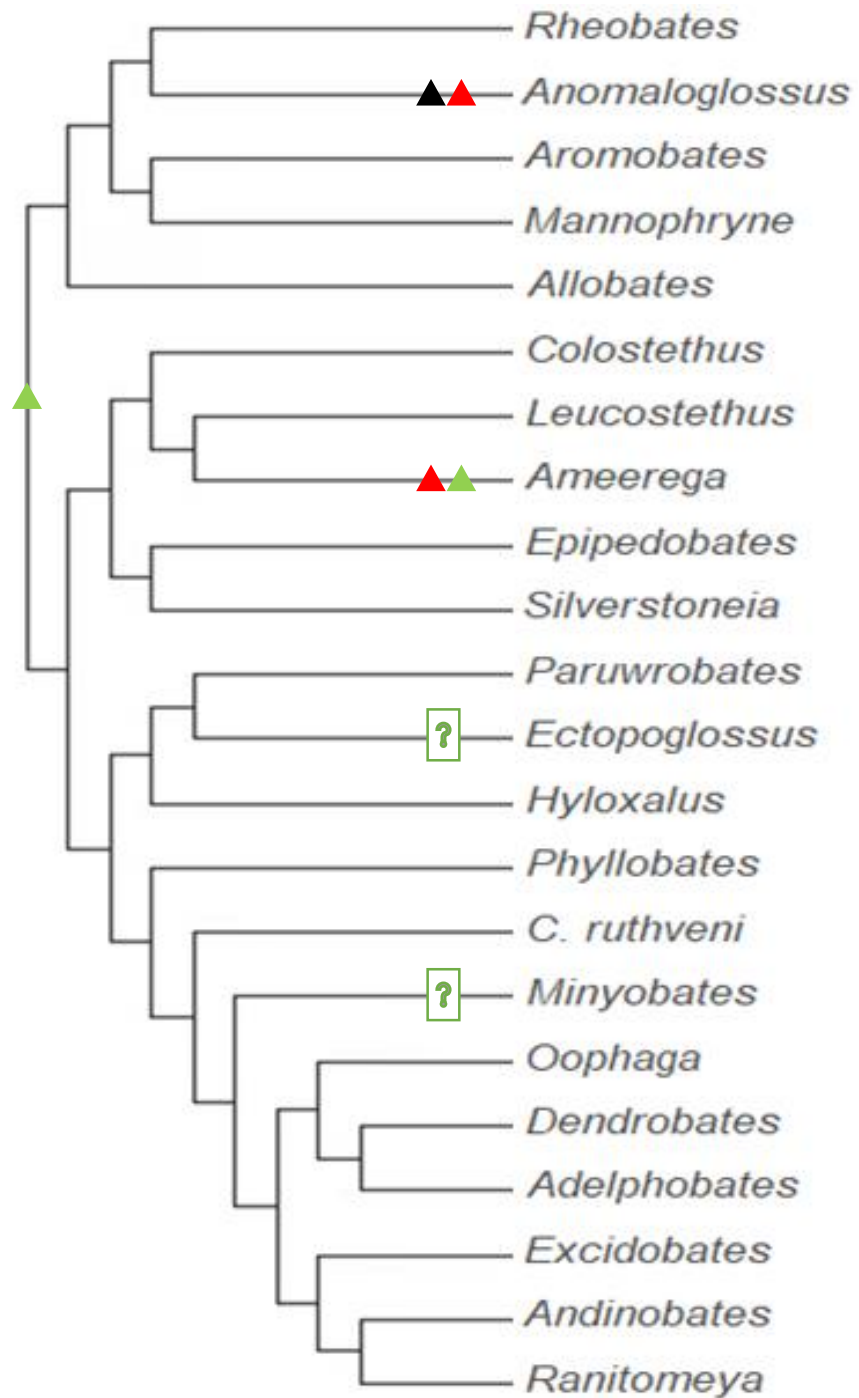
▲ 0. zero

▲ 1. one

▲ 2. two

▲ 3. Three

Additive



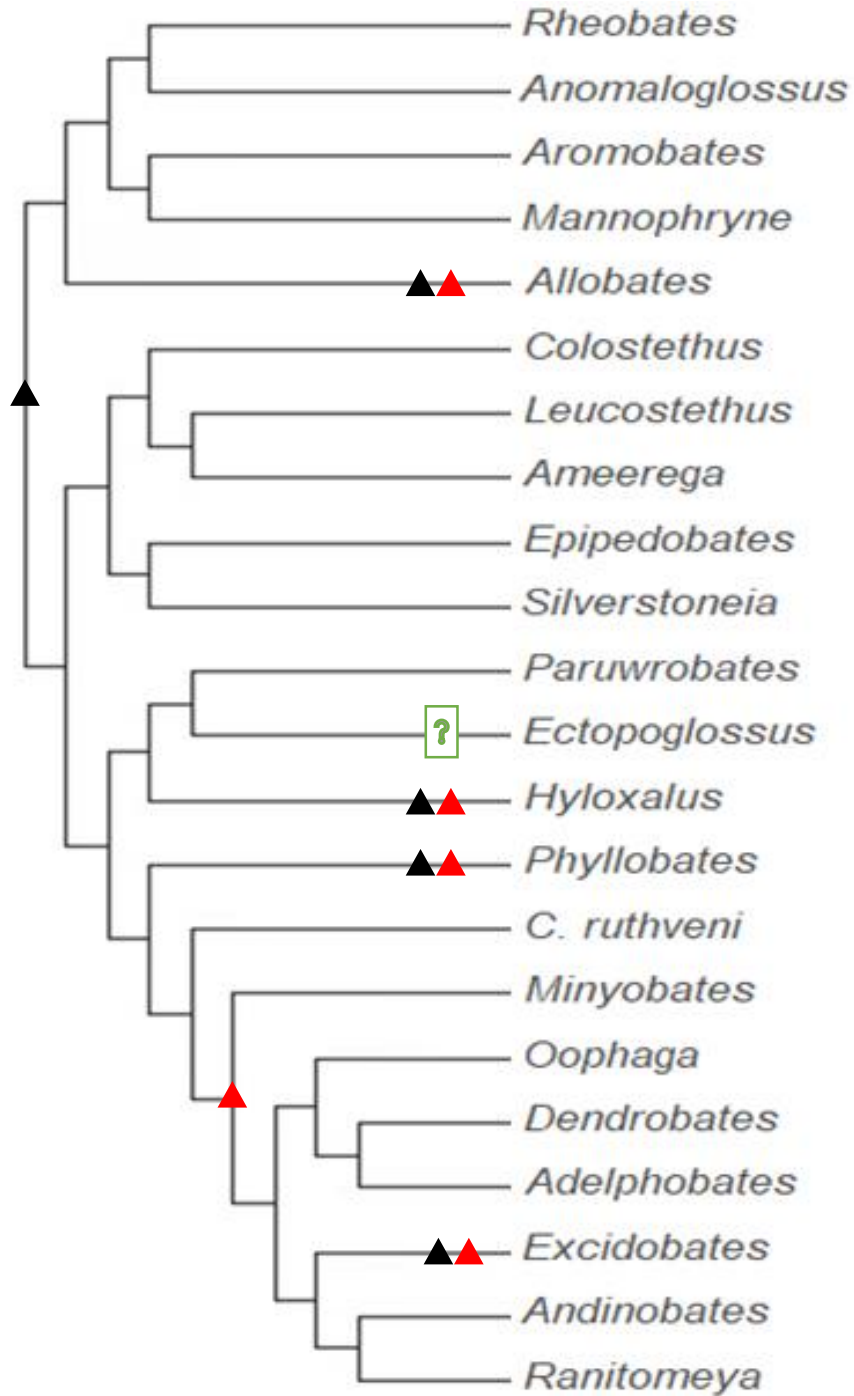
102. Larval jaw sheaths

▲ 0. absent

▲ 1. lower only, not keratinized

▲ 2. entire, keratinized

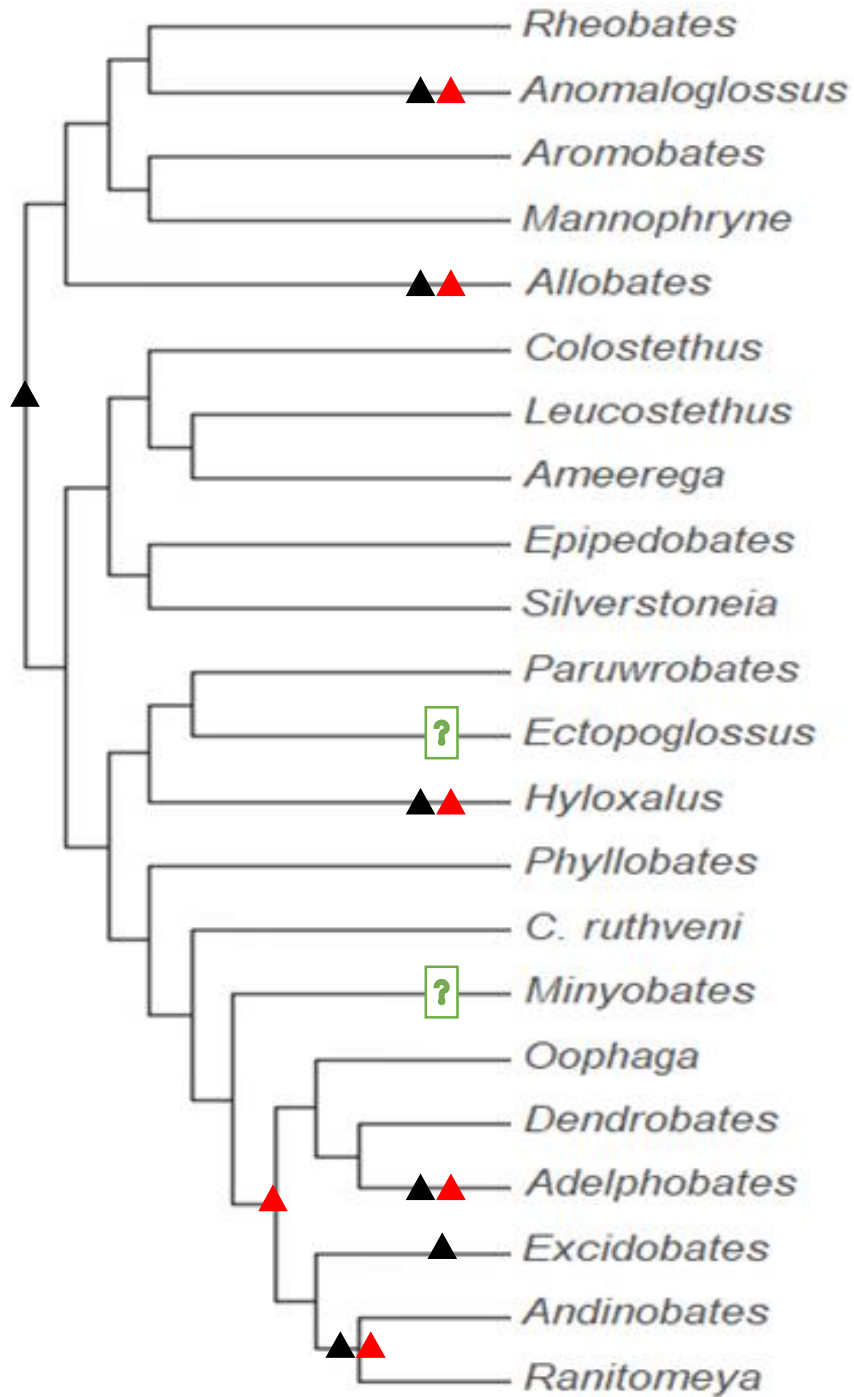
Additive.



103. Larval upper jaw sheath shape

▲ 0. W-shaped

▲ 1. U-shaped

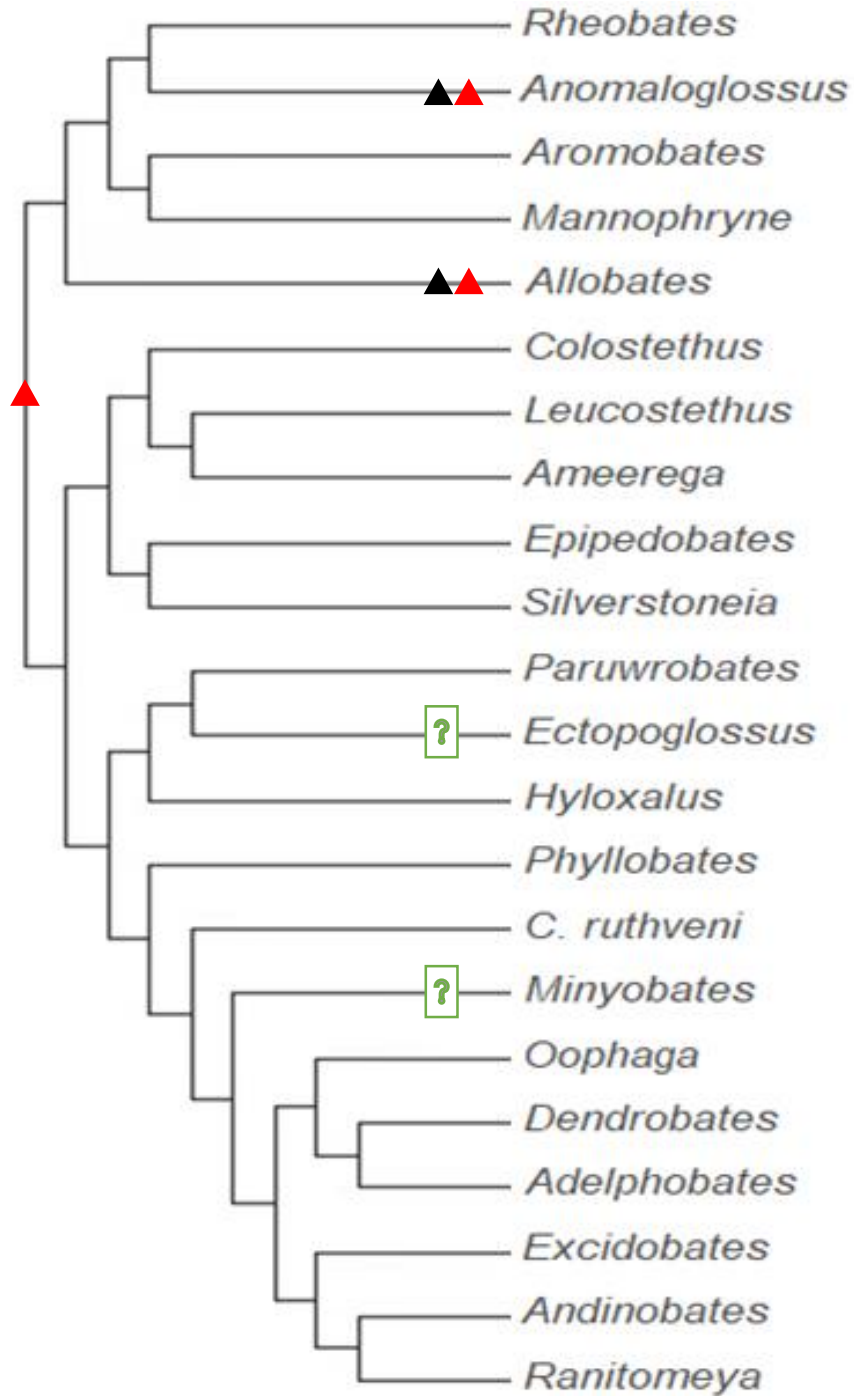


104. Larval vent tube position

▲ 0. dextral

▲ 1. median

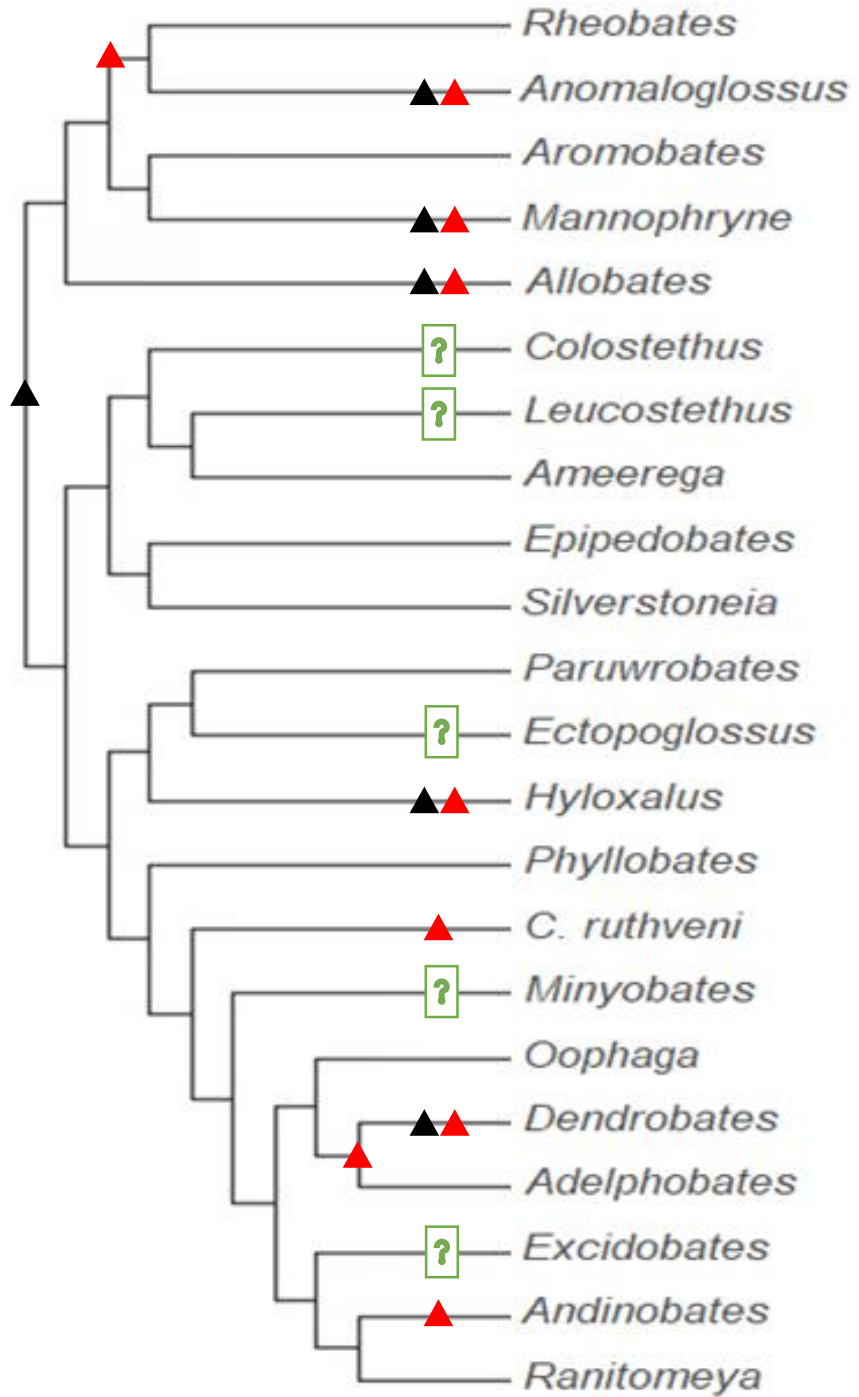
- Rheobates*
- ▲ *Anomaloglossus*
- Aromobates*
- Mannophryne*
- ▲ *Allobates*
- Colostethus*
- Leucostethus*
- Ameerega*
- Epipedobates*
- Silverstoneia*
- Paruwrobates*
- ? *Ectopoglossus*
- ▲ *Hyloxalus*
- Phyllobates*
- C. ruthveni*
- ? *Minyobates*
- Oophaga*
- Dendrobates*
- ▲ *Adelphobates*
- ▲ *Excidobates*
- Andinobates*
- ▲ *Ranitomeya*



105. Spiracle

▲ 0. absent

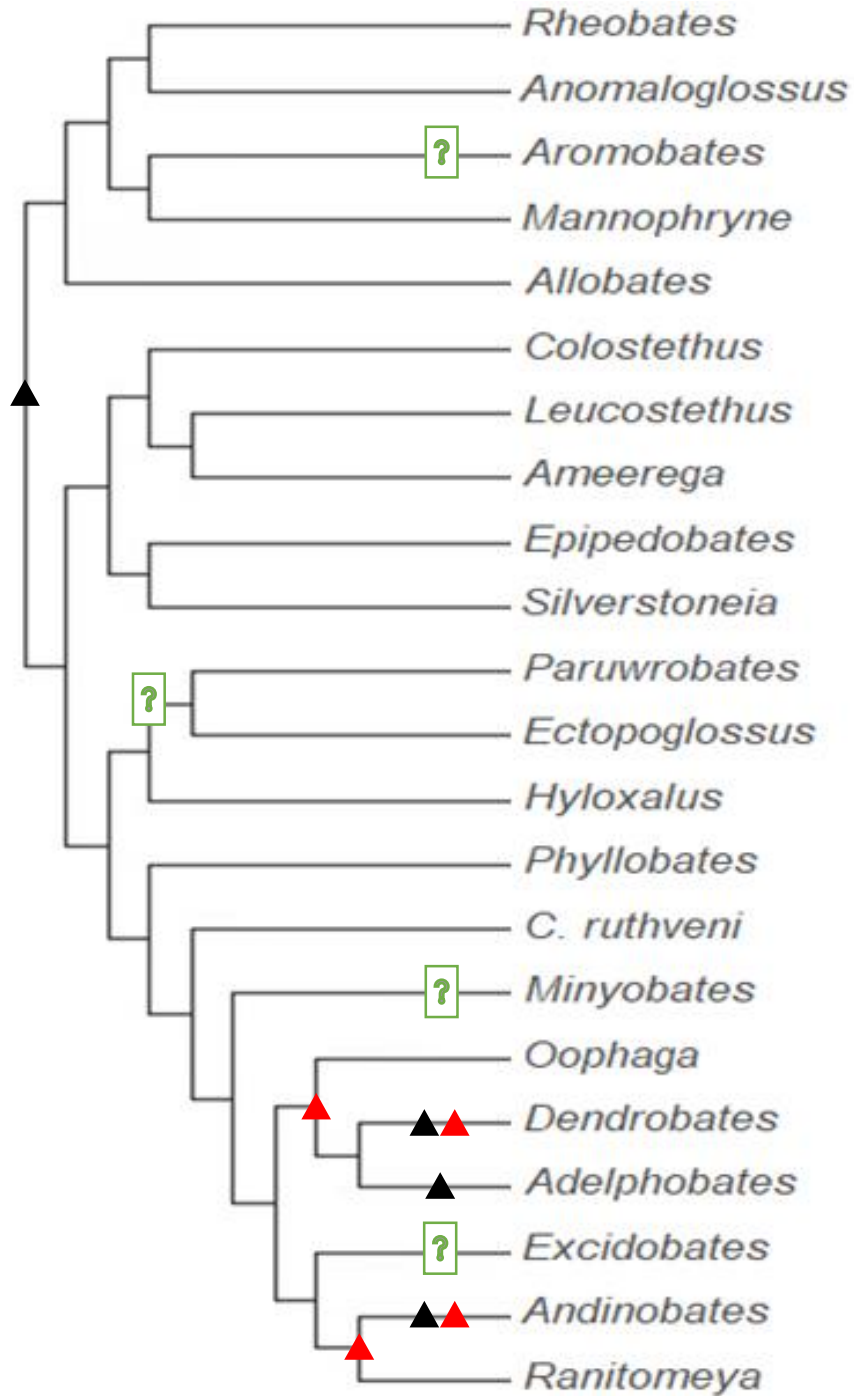
▲ 1. present



106. Lateral line stitches

▲ 0. absent

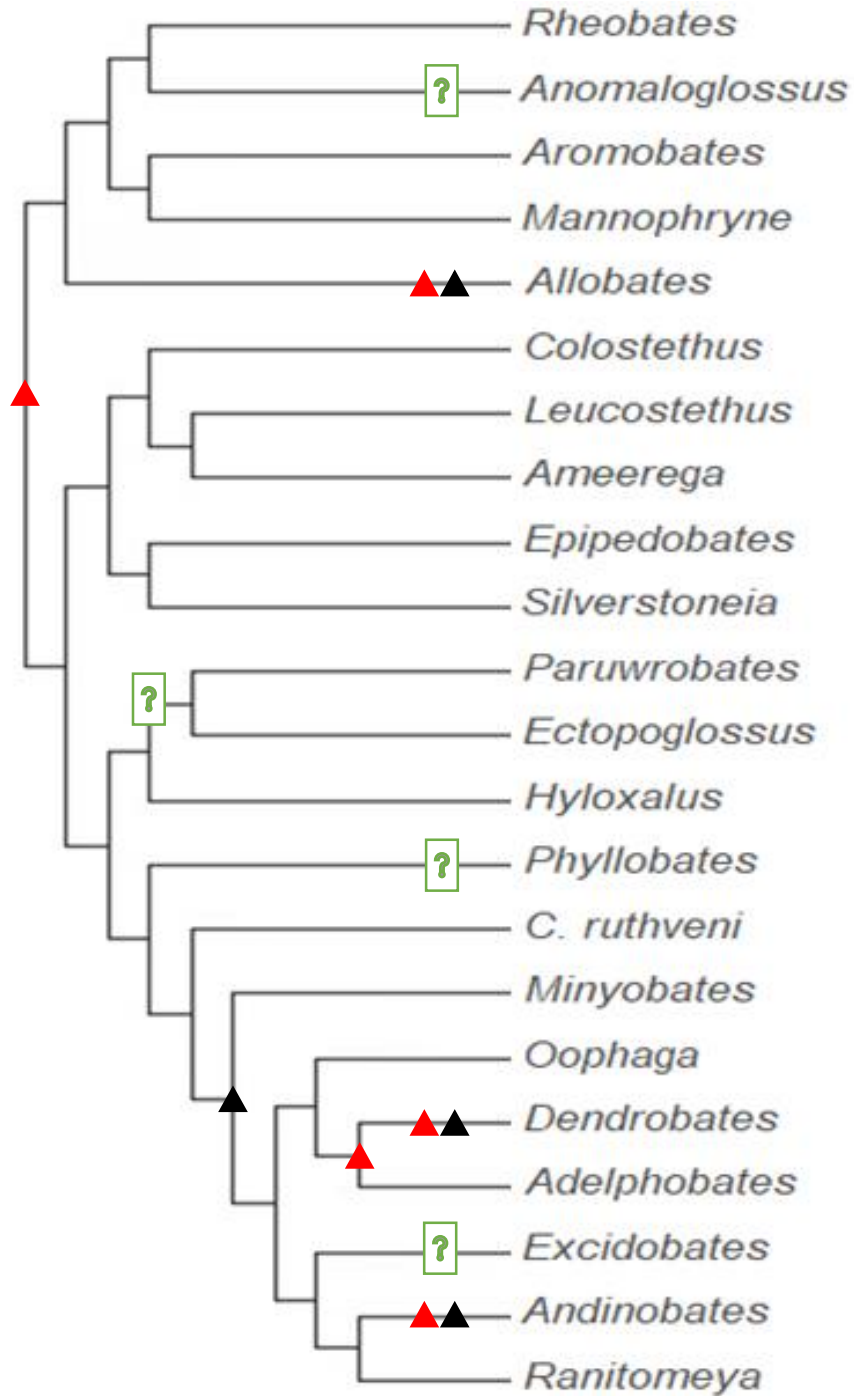
▲ 1. present



107. Larval gut morphology

▲ 0. long gut concealing other organs

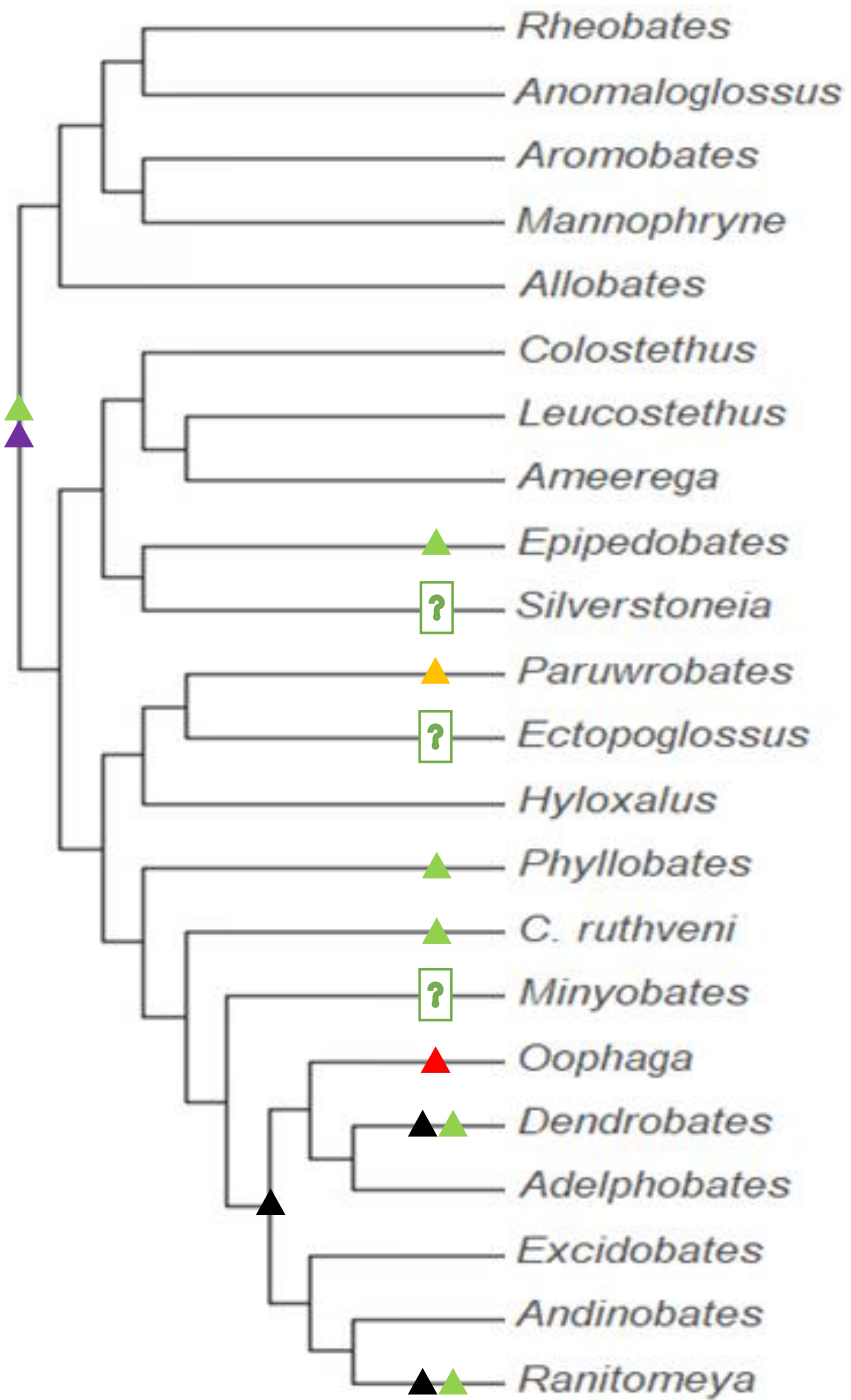
▲ 1. short gut revealing other organs



108. Projection on sagittal edge of rim of larval external nares

▲ 0. absent (non projected)

▲ 1. present (projected)



109. Advertisement calls

▲ 0. buzz

▲ 1. chirp

▲ 2. thrill

▲ 3. retarded thrill

▲ 4. retarded chirp

Nonadditive

Rheobates

Anomaloglossus

Aromobates

Mannophryne

Allobates

Colostethus

Leucostethus

Ameerega

▲ *Epipedobates*

□ ? *Silverstoneia*

▲ *Paruwrobates*

□ ? *Ectopoglossus*

Hyloxalus

▲ *Phyllobates*

▲ *C. ruthveni*

□ ? *Minyobates*

▲ *Oophaga*

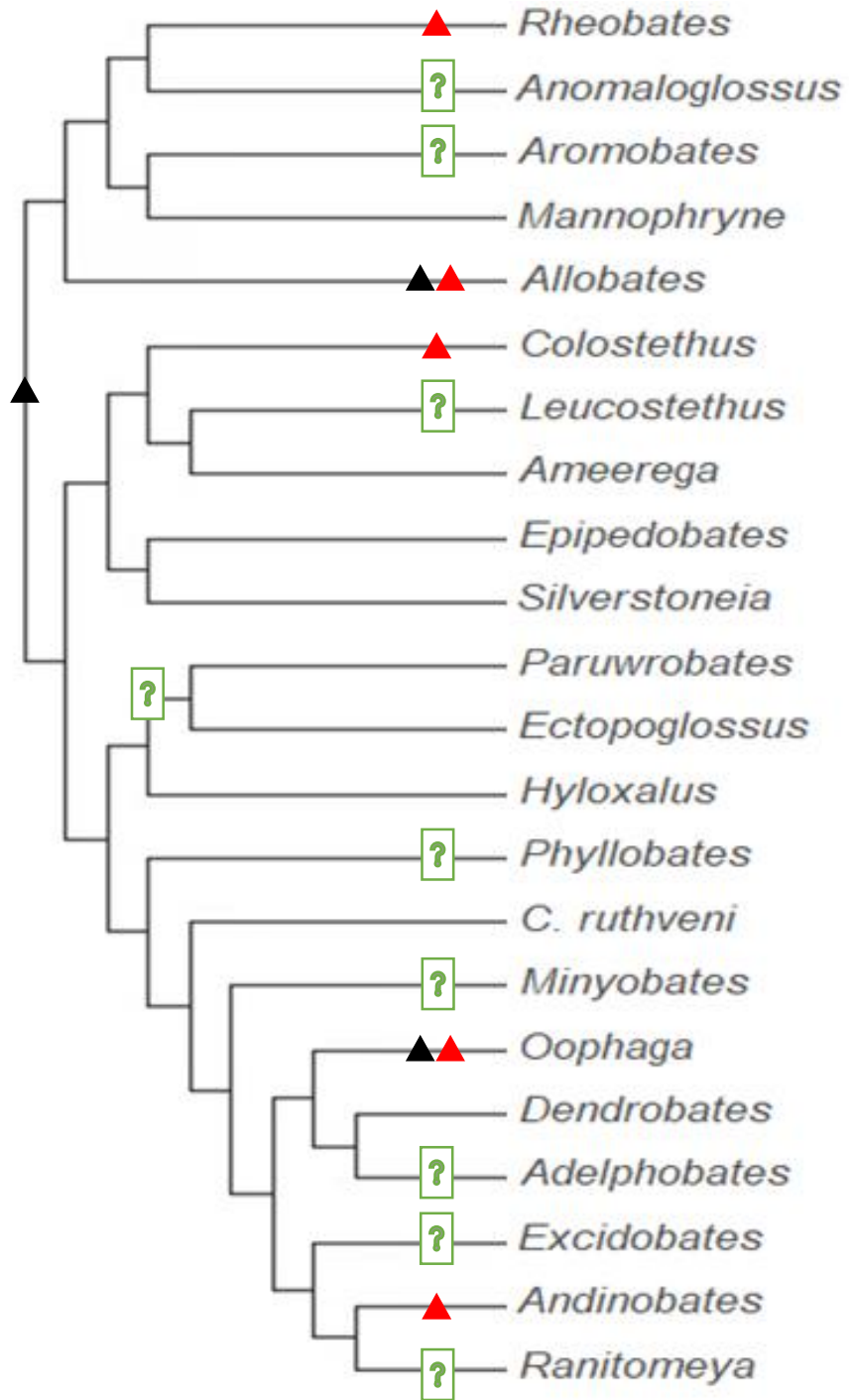
▲ ▲ *Dendrobates*

Adelphobates

Excidobates

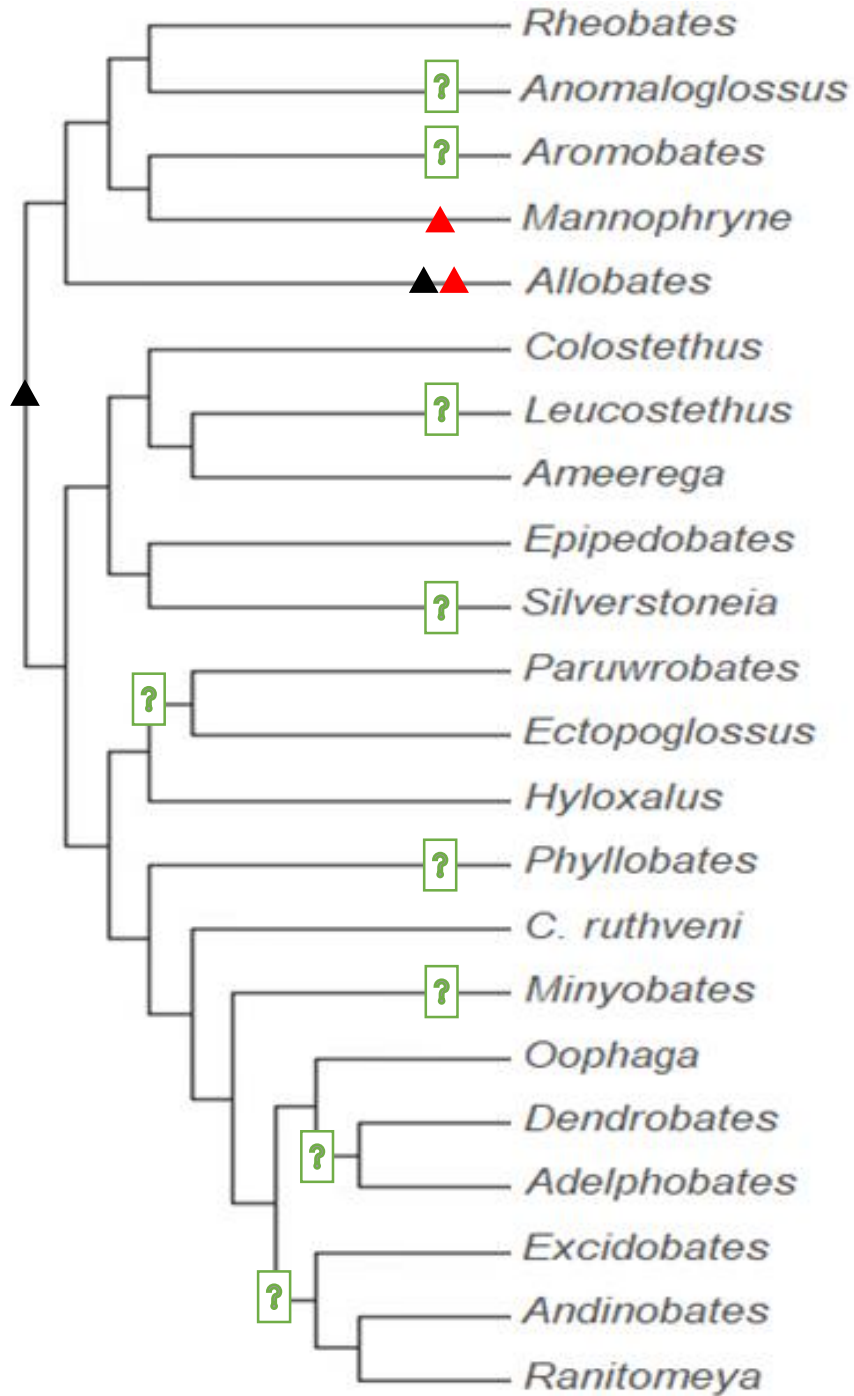
Andinobates

▲ ▲ *Ranitomeya*



110. Male courtship: Stereotyped strut

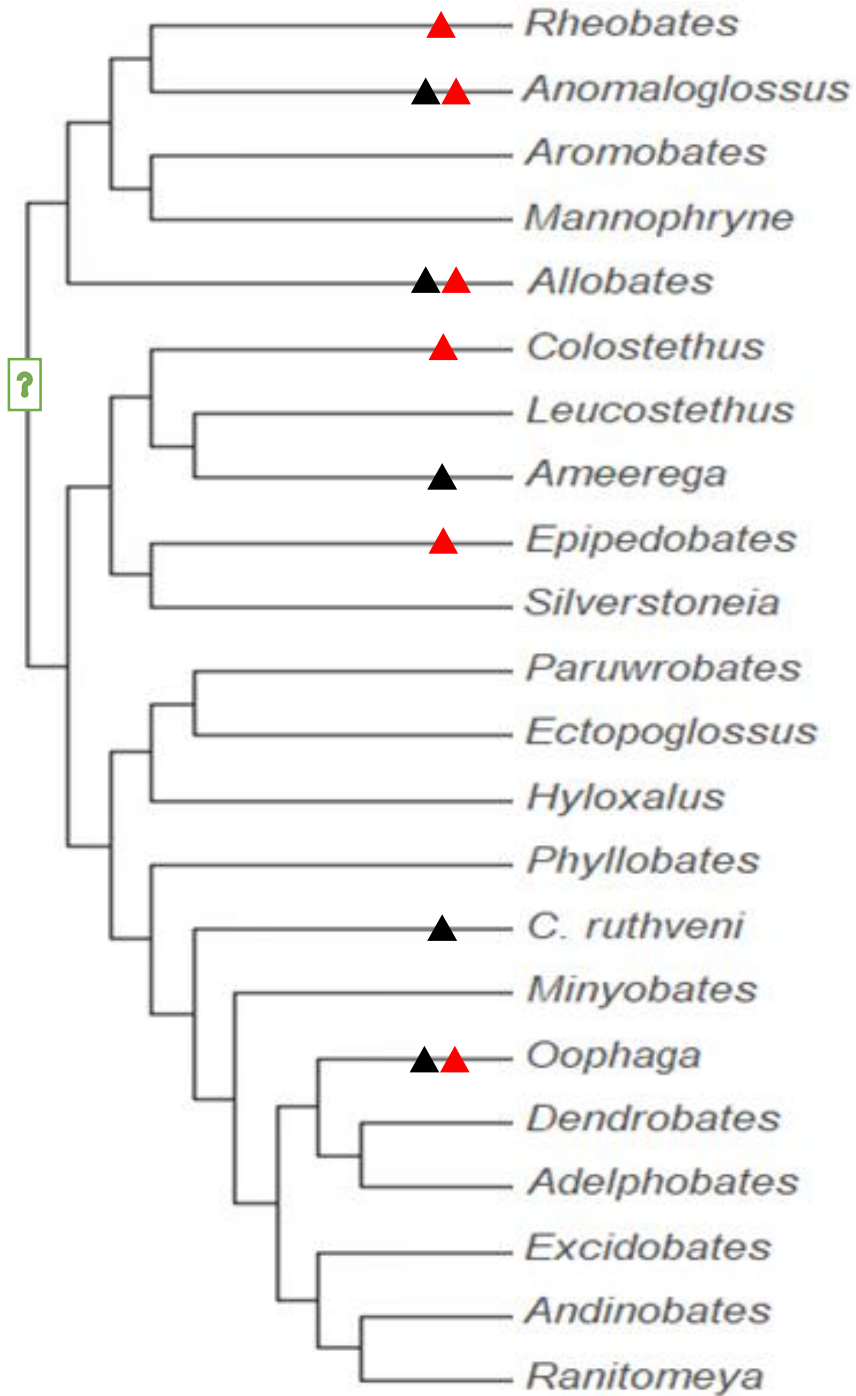
- ▲ 0. absent
- ▲ 1. present



111. Male courtship: Jumping up and down

▲ 0. absent

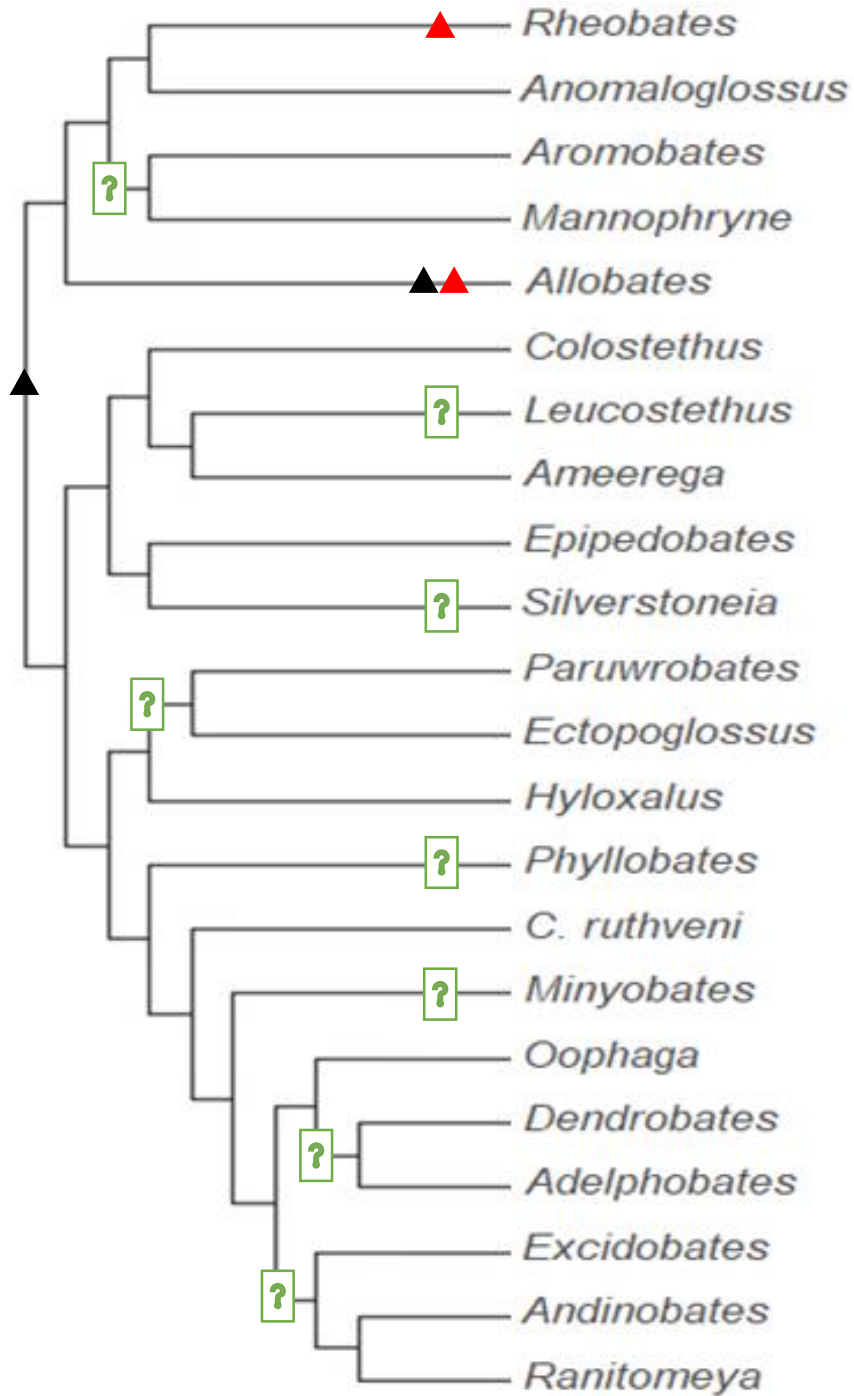
▲ 1. present



112. Female courtship: Crouching

▲ 0. absent

▲ 1. present

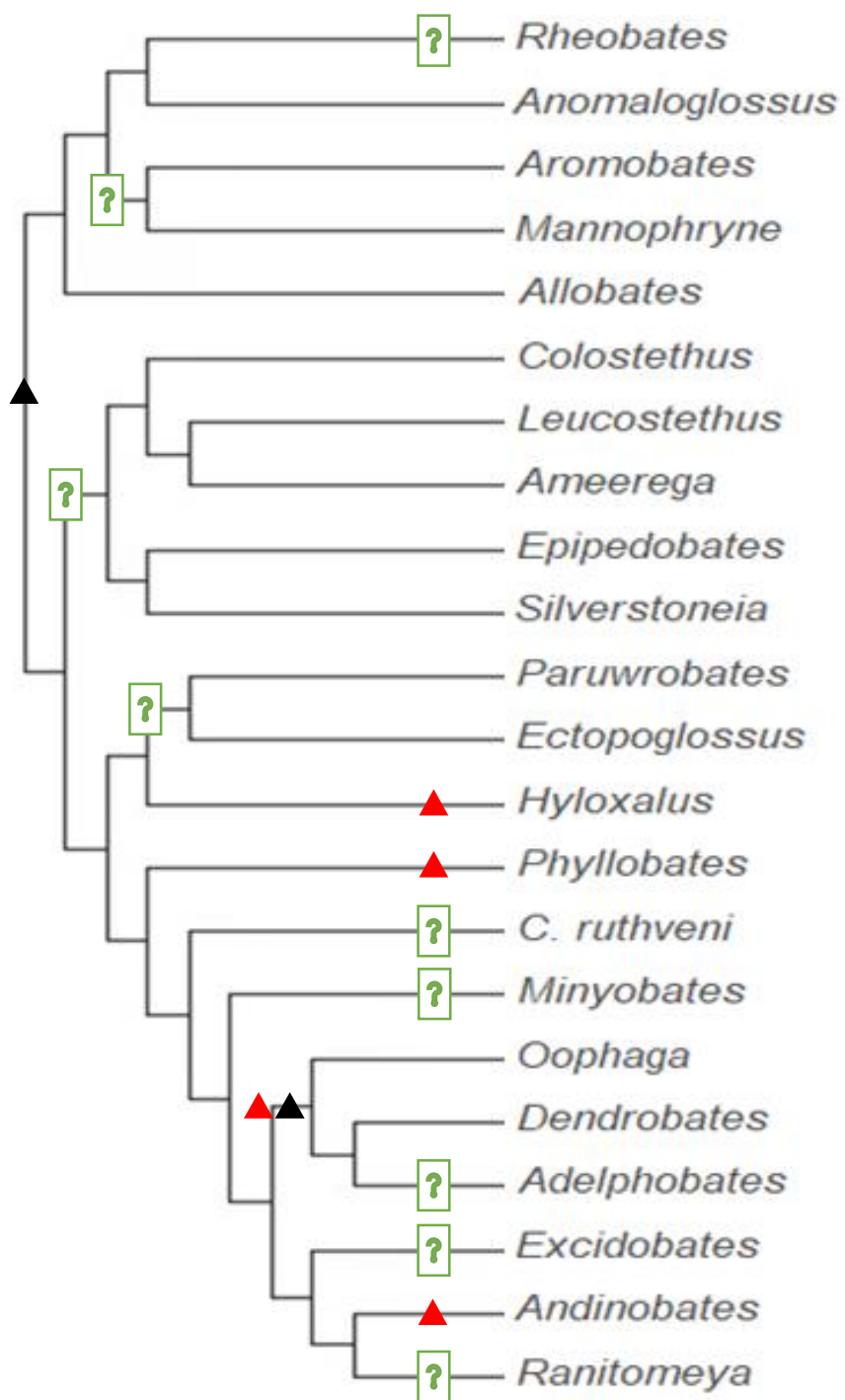


113. Female courtship: Sliding under male

▲ 0. absent

▲ 1. present

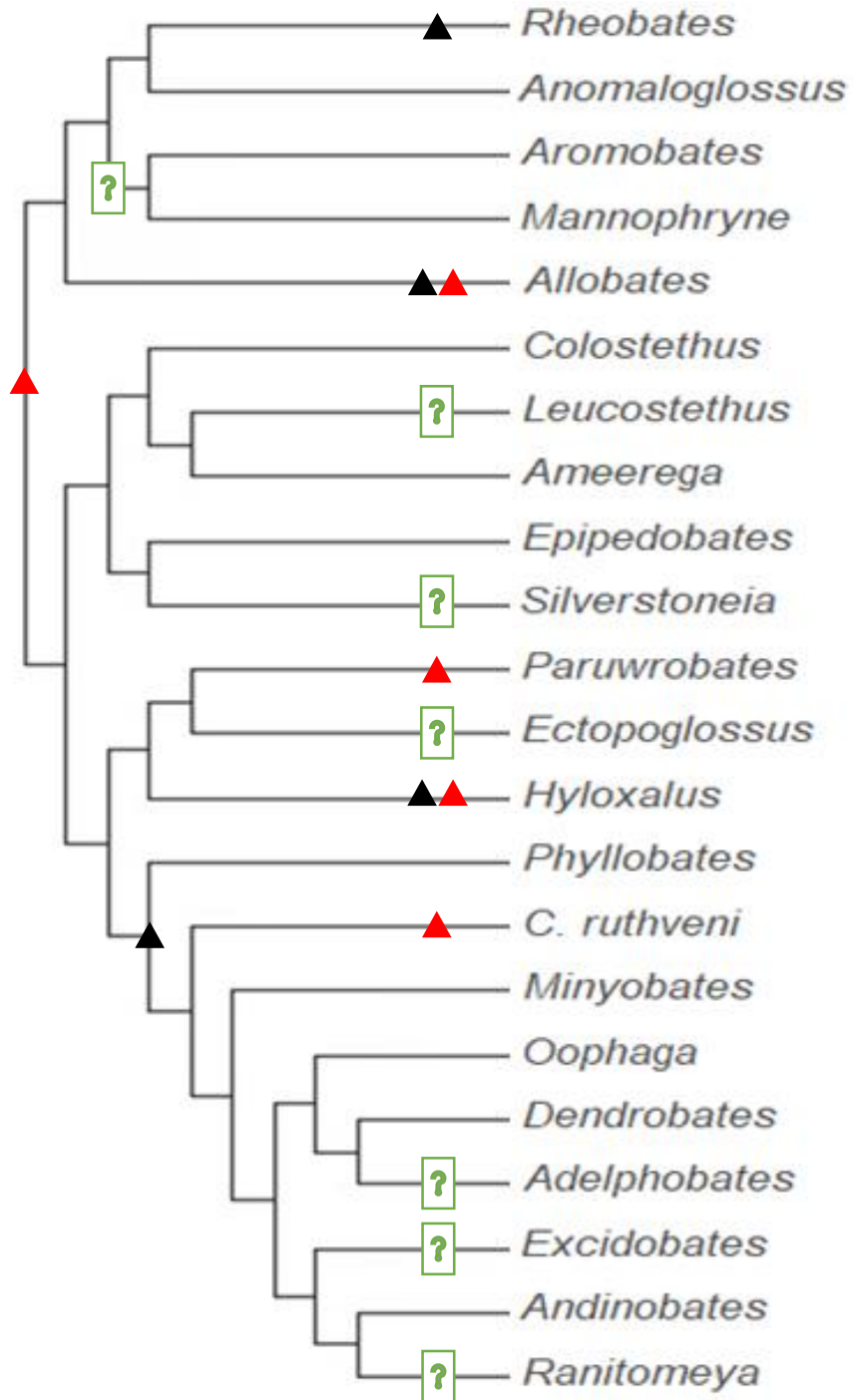
- Rheobates*
- Anomaloglossus*
- Aromobates*
- Mannophryne*
- Allobates*
- Colostethus*
- Leucostethus*
- Ameerega*
- Epipedobates*
- Silverstoneia*
- Paruwrobates*
- Ectopoglossus*
- Hyloxalus*
- Phyllobates*
- C. ruthveni*
- Minyobates*
- Oophaga*
- Dendrobates*
- Adelphobates*
- Excidobates*
- Andinobates*
- Ranitomeya*



114. Timing of sperm deposition

▲ 0. after oviposition

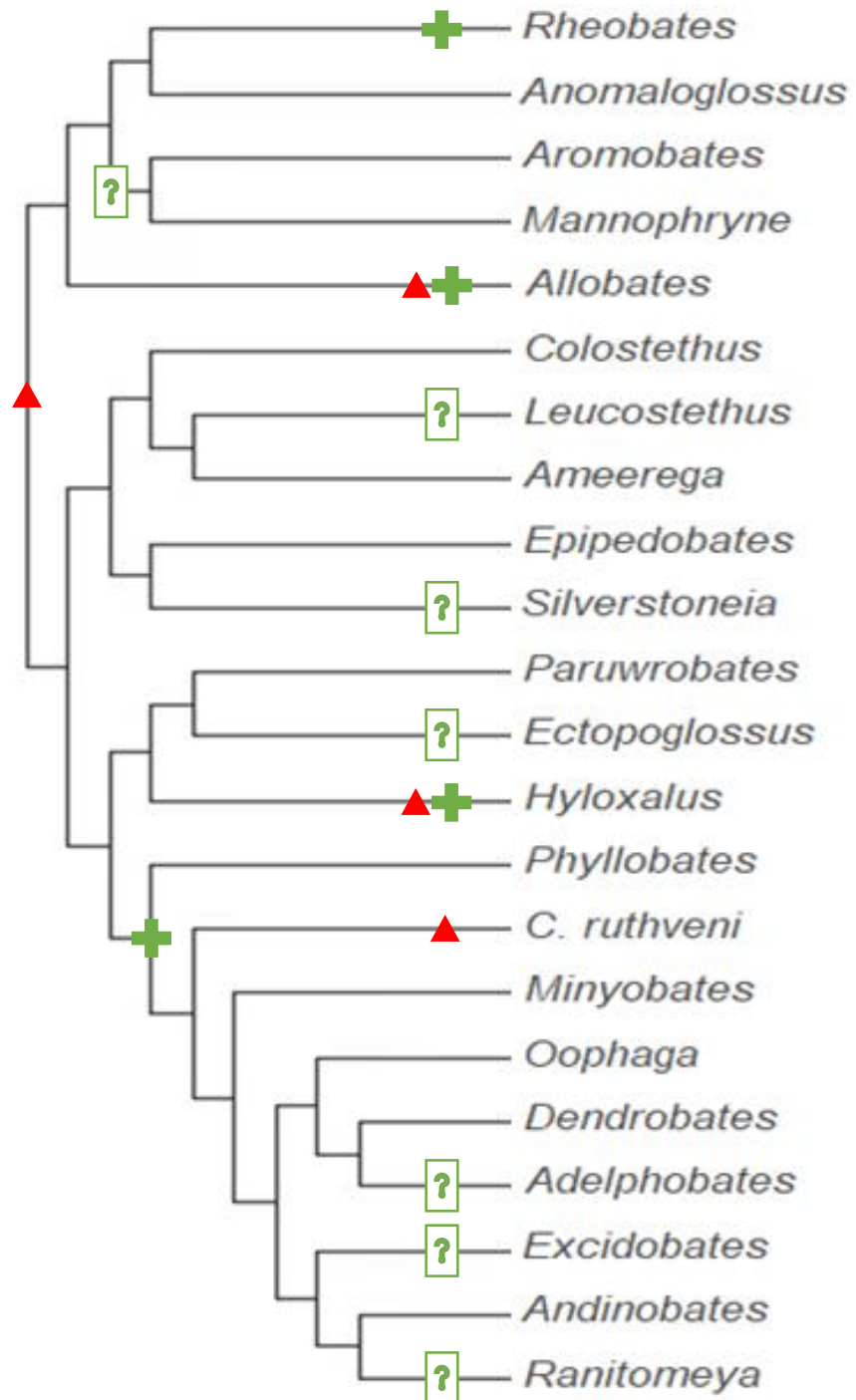
▲ 1. prior to oviposition



115. Reproductive amplexus occurrence

▲ 0. absent

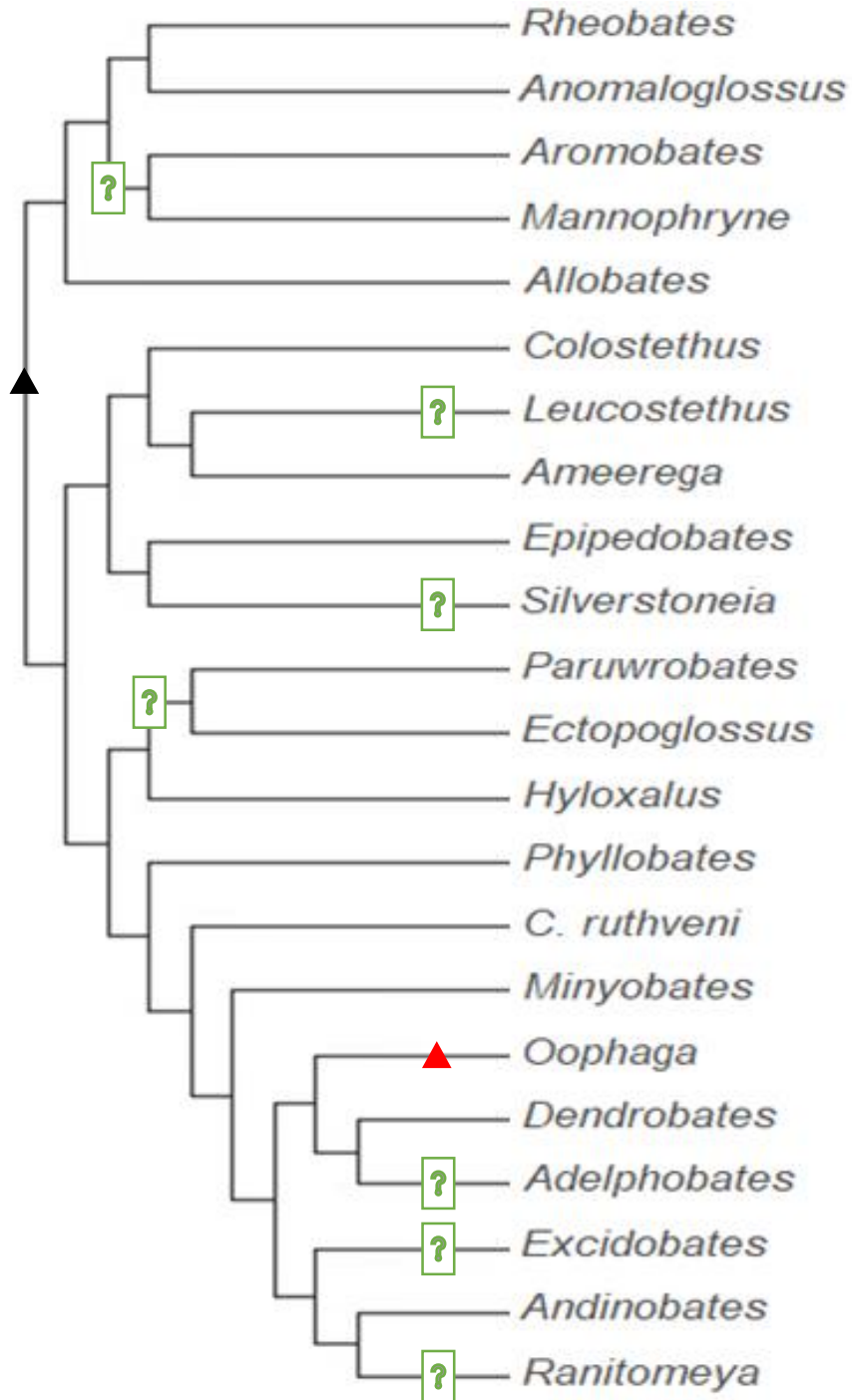
▲ 1. present



116. Reproductive amplexus position

- ▲ 0. axillary
- ▲ 1. cephalic
- +
- +

Not available



117. Cloaca-cloaca touching

▲ 0. absent

▲ 1. present

Rheobates

Anomaloglossus

Aromobates

Mannophryne

Allobates

Colostethus

Leucostethus

Ameerega

Epipedobates

Silverstoneia

Paruwrobates

Ectopoglossus

Hyloxalus

Phyllobates

C. ruthveni

Minyobates

Oophaga

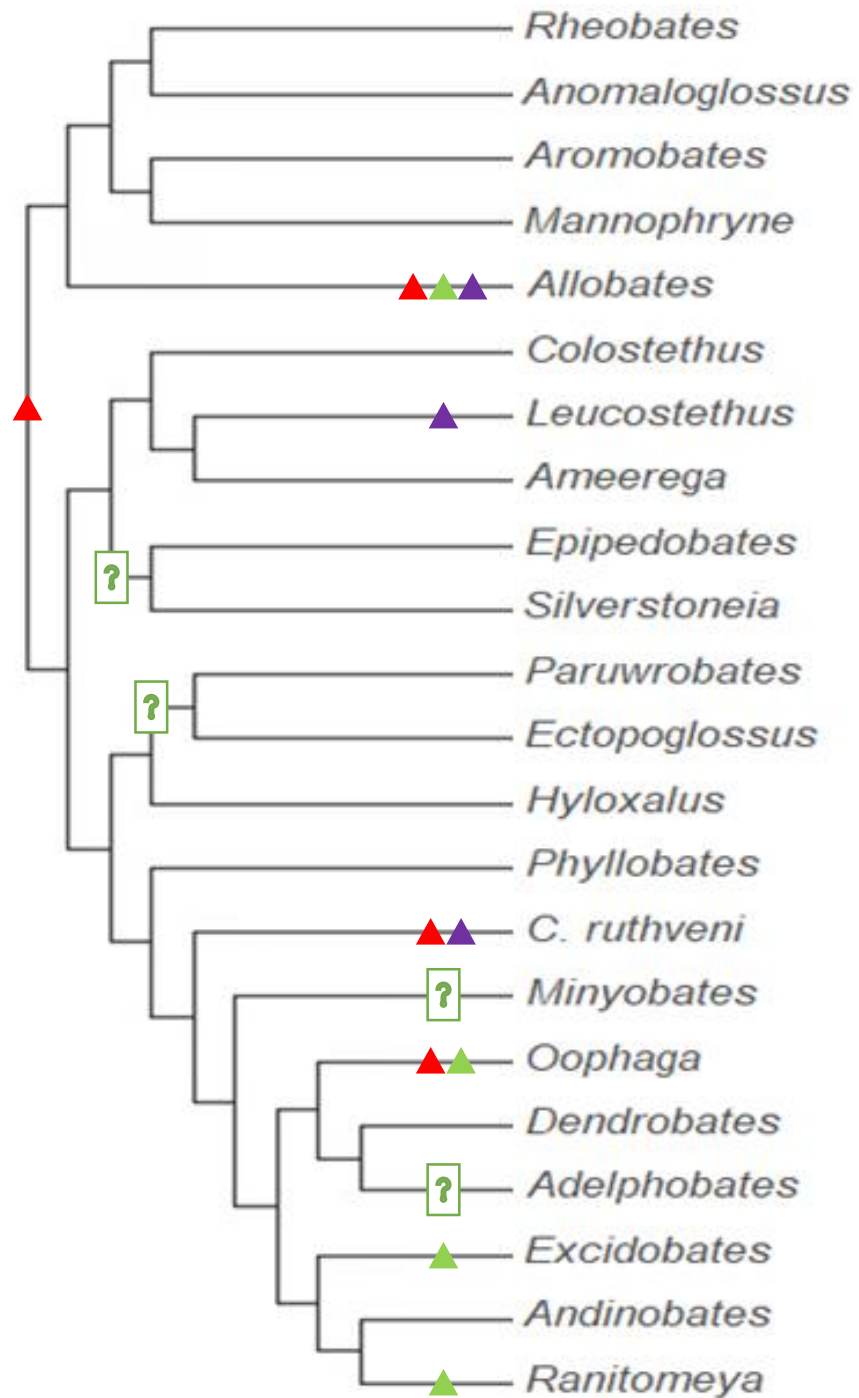
Dendrobates

Adelphobates

Excidobates

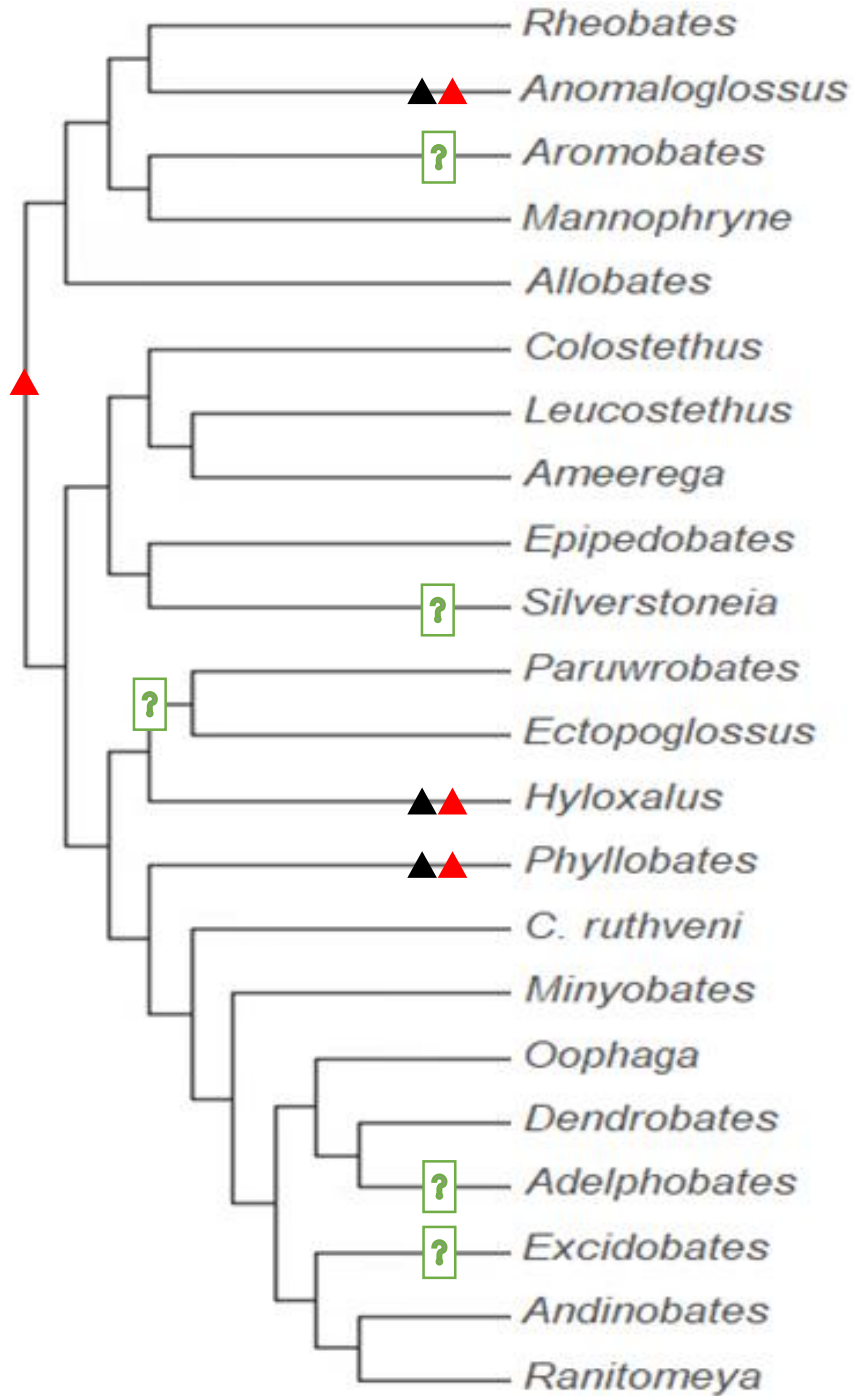
Andinobates

Ranitomeya



118. Egg deposition site

- ▲ 0. aquatic
- ▲ 1. terrestrial: leaf litter, soil, on or under stones
- ▲ 2. terrestrial: phytotelmata
- ▲ 3. terrestrial: on top or underside of leaves above ground or water level.



119. Egg clutch attendance occurrence

▲ 0. absent

▲ 1. present

Rheobates

Anomaloglossus

Aromobates

Mannophryne

Allobates

Colostethus

Leucostethus

Ameerega

Epipedobates

Silverstoneia

Paruwrobates

Ectopoglossus

Hyloxalus

Phyllobates

C. ruthveni

Minyobates

Oophaga

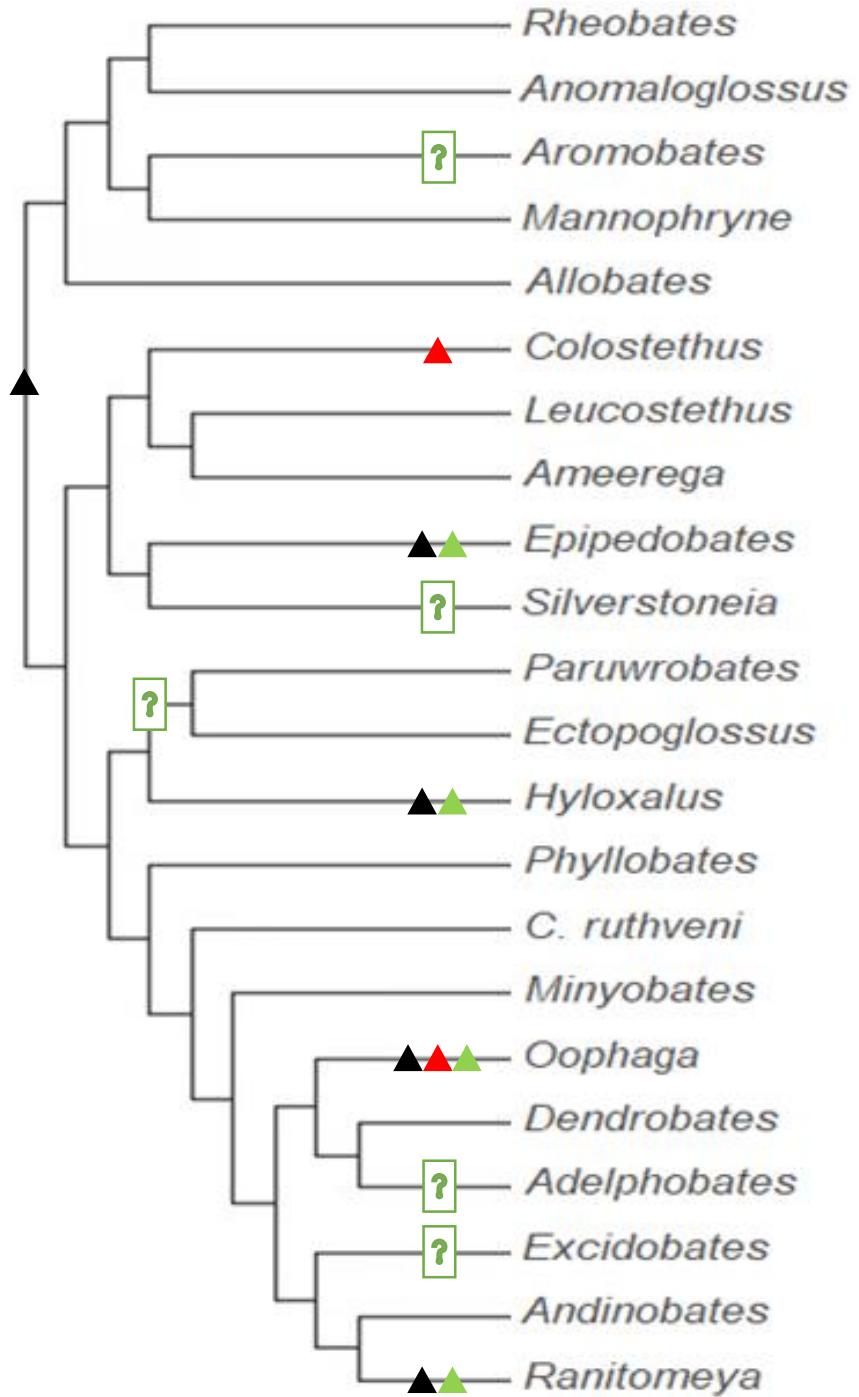
Dendrobates

Adelphobates

Excidobates

Andinobates

Ranitomeya



120. Egg clutch attendant sex

▲ 0. male

▲ 1. female

▲ 2. both

Rheobates

Anomaloglossus

■ *Aromobates*

Mannophryne

Allobates

▲ *Colostethus*

Leucostethus

Ameerega

▲▲ *Epipedobates*

■ *Silverstoneia*

Paruwrobates

■ *Ectopoglossus*

▲▲ *Hyloxalus*

Phyllobates

C. ruthveni

Minyobates

▲▲▲ *Oophaga*

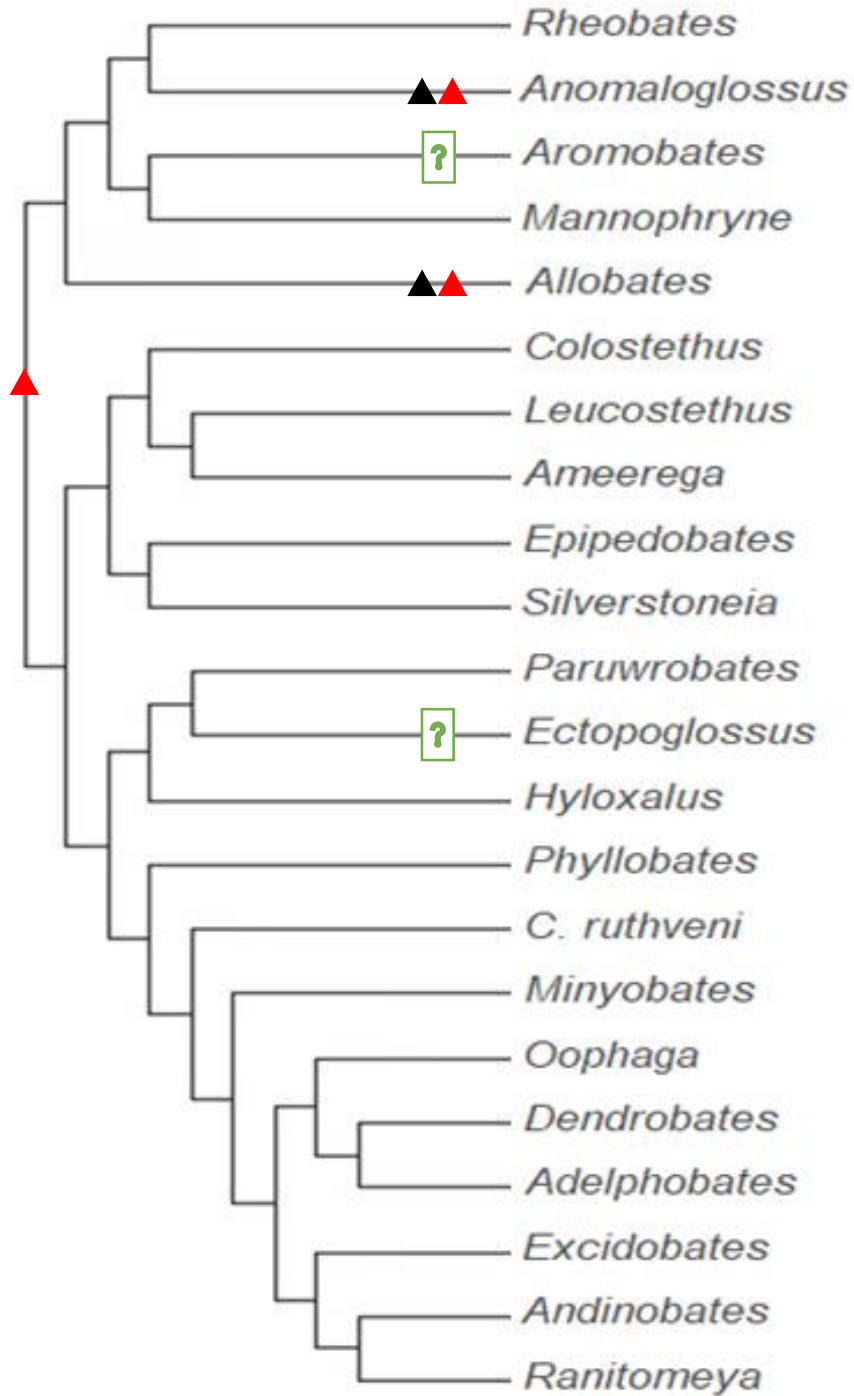
Dendrobates

■ *Adelphobates*

■ *Excidobates*

Andinobates

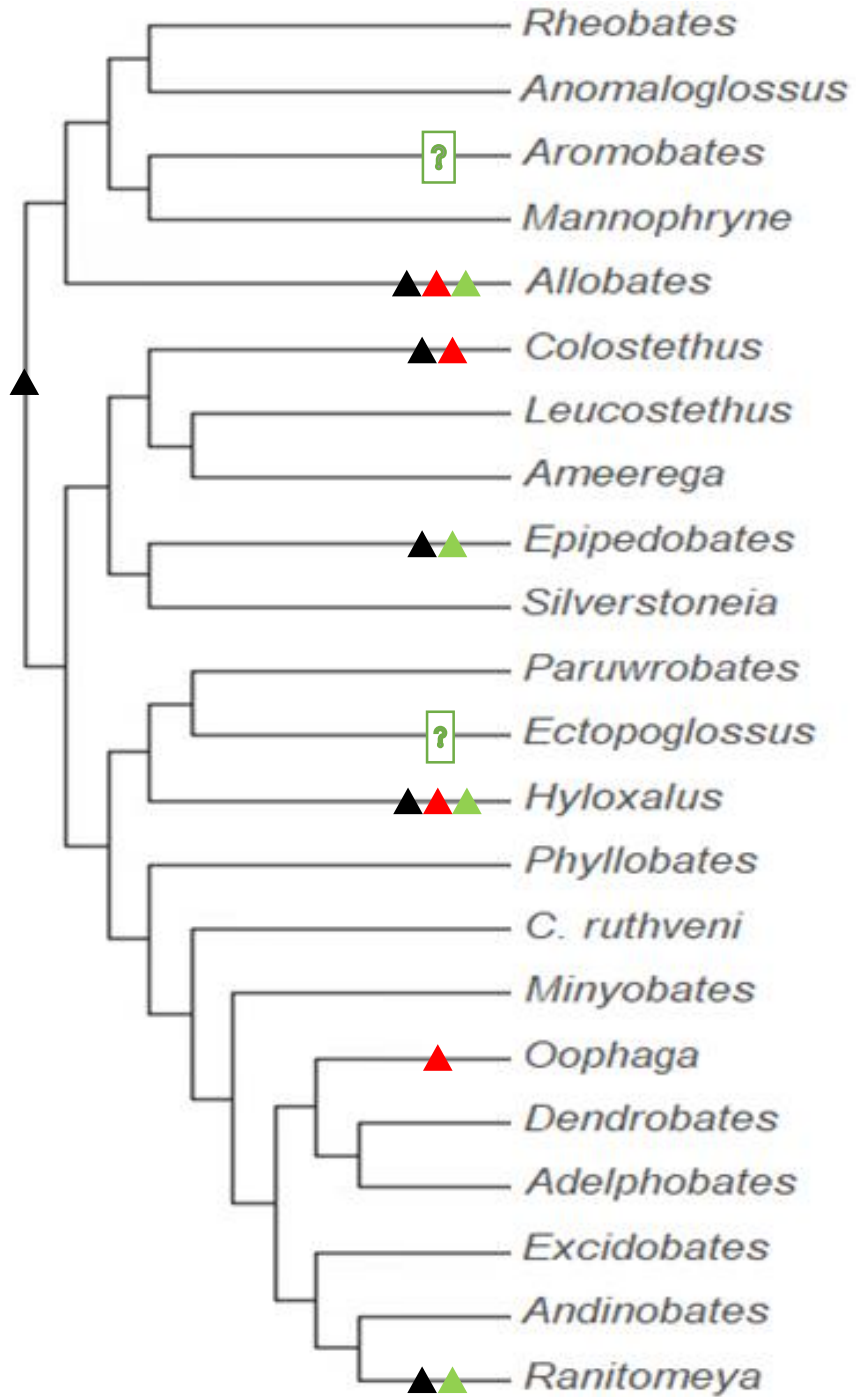
▲▲ *Ranitomeya*



121. Dorsal tadpole transport

▲ 0. absent

▲ 1. present



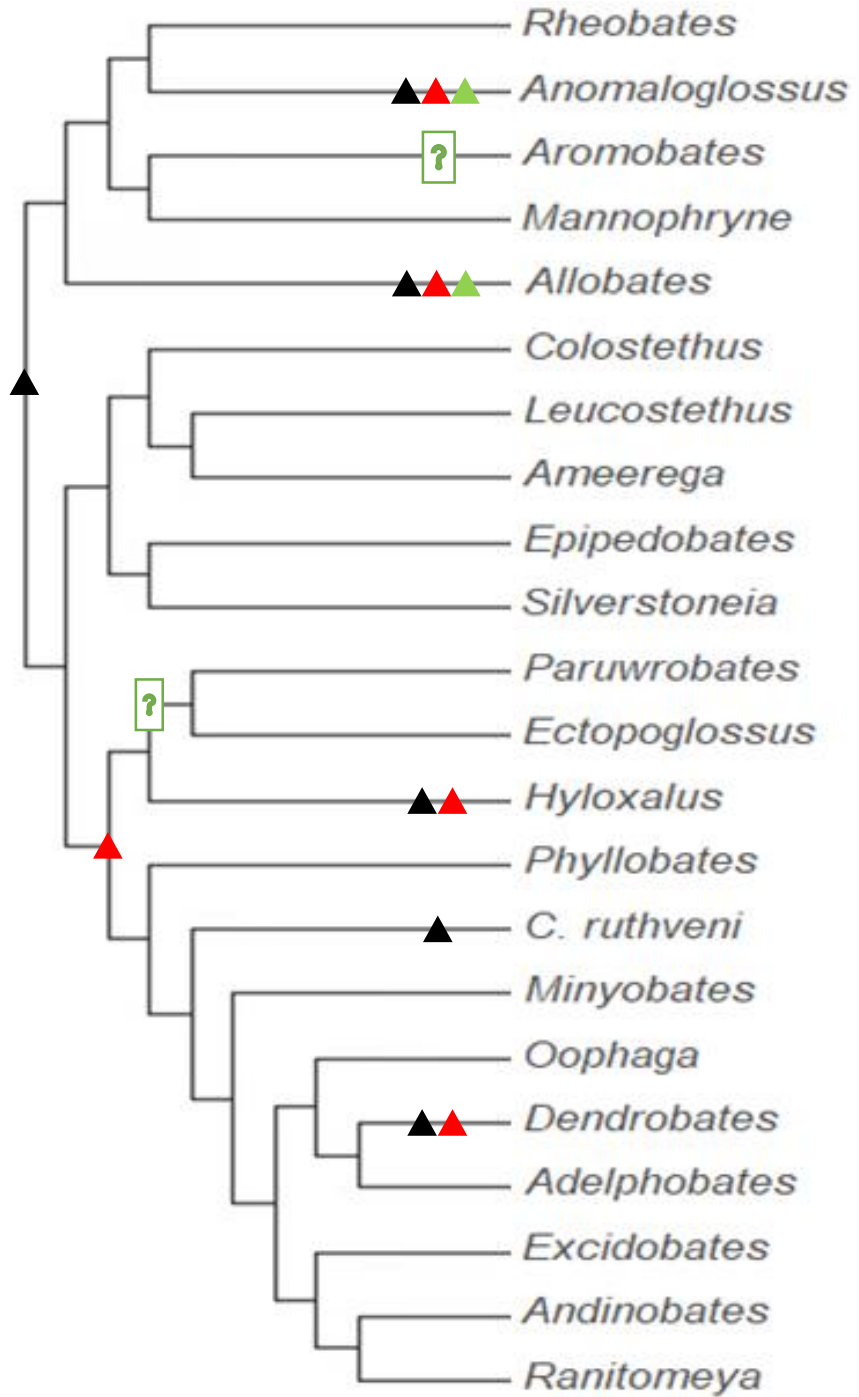
122. Sex of nurse frog

▲ 0. male

▲ 1. female

▲ 2. both

Nonadditive.



123. Larval habitat

▲ 0. pool or stream

▲ 1. phytotelmata

▲ 2. nidicolous

Nonadditive.

Rheobates

Anomaloglossus

Aromobates

Mannophryne

Allobates

Colostethus

Leucostethus

Ameerega

Epipedobates

Silverstoneia

Paruwrobates

Ectopoglossus

Hyloxalus

Phyllobates

C. ruthveni

Minyobates

Oophaga

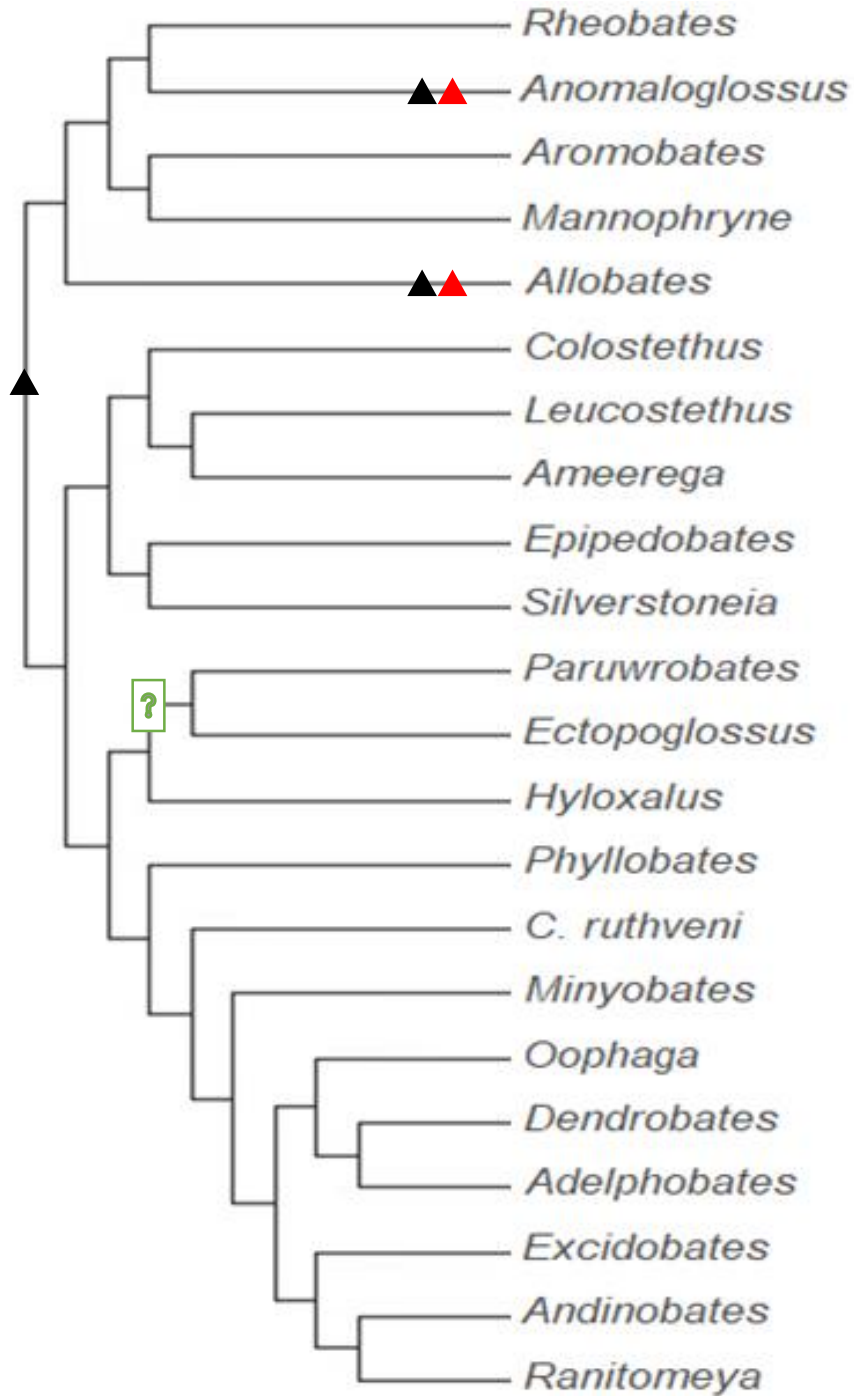
Dendrobates

Adelphobates

Excidobates

Andinobates

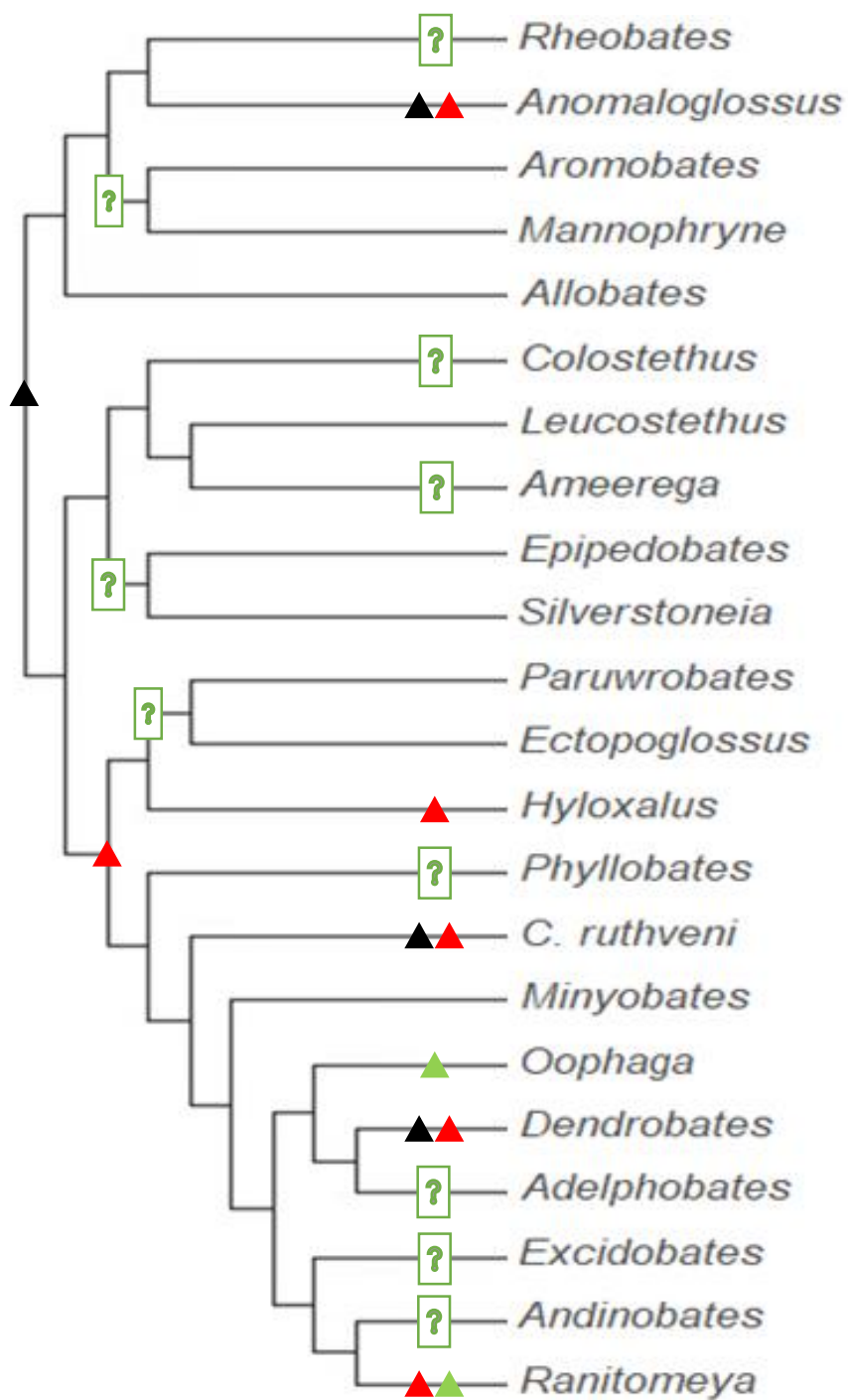
Ranitomeya



124. Larval trophic guild

▲ 0. exotrophic

▲ 1. endrotrophic



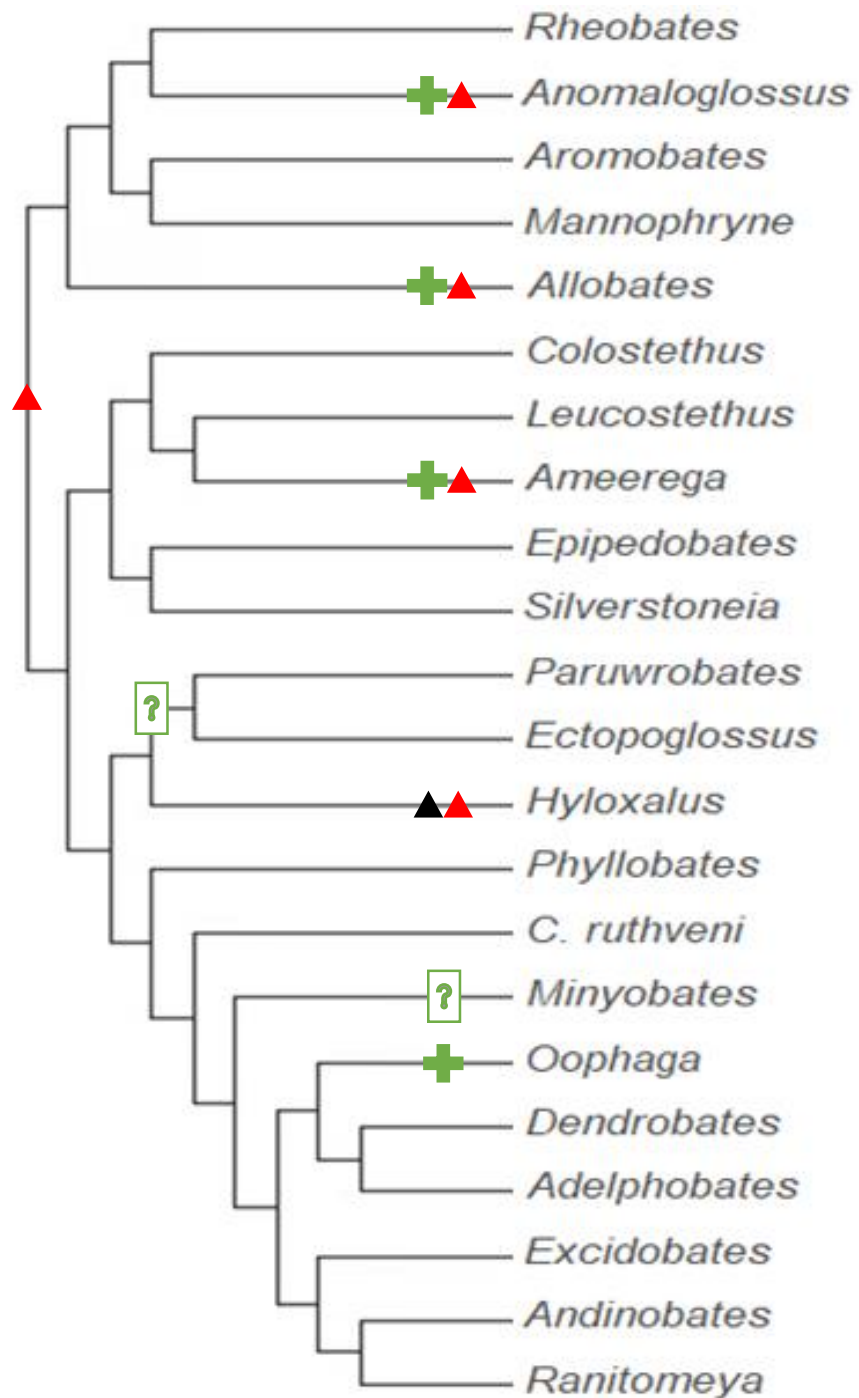
125. Exotrophic larval diet

▲ 0. detritivorous

▲ 1. predaceous

▲ 2. oophagus

Nonadditive.

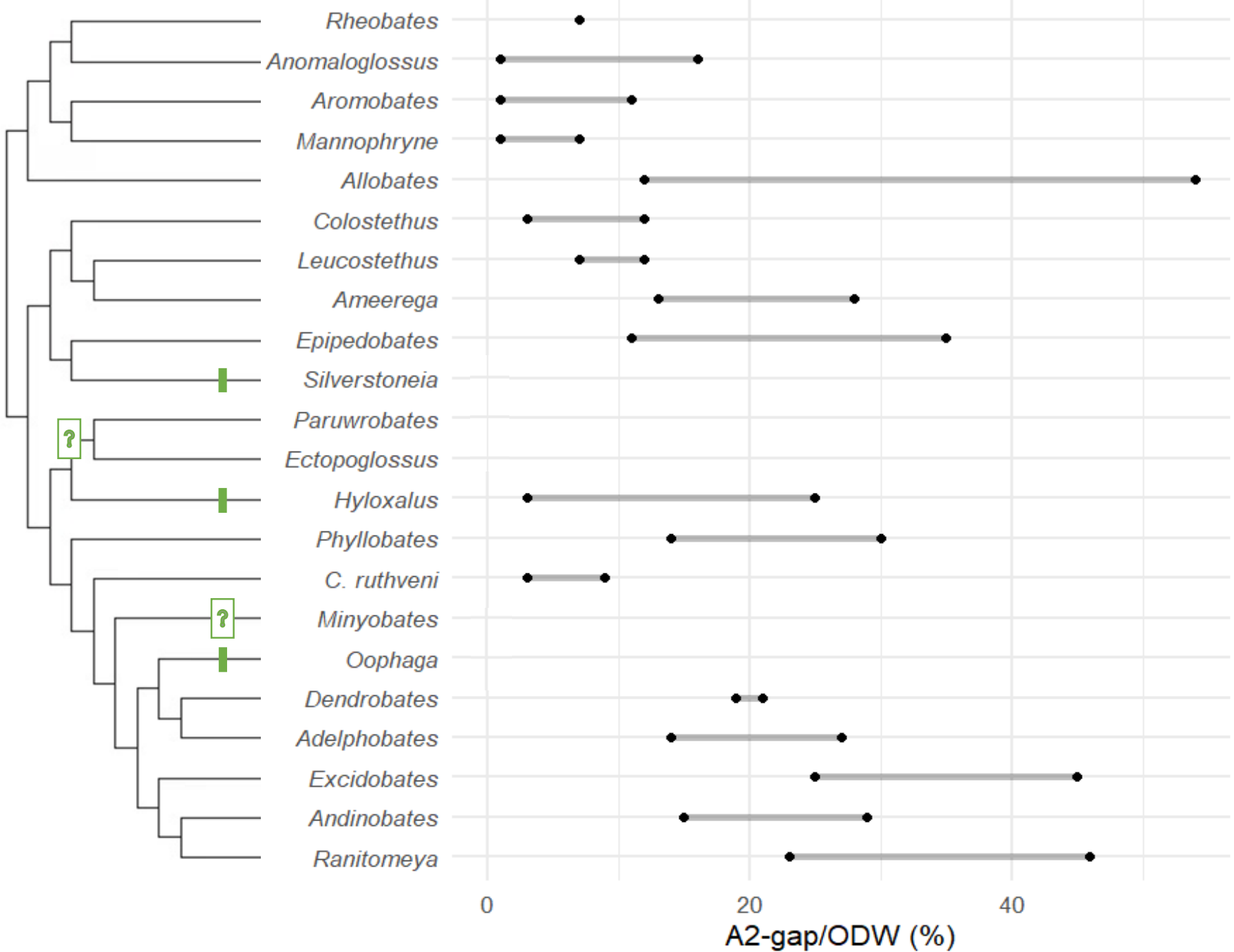


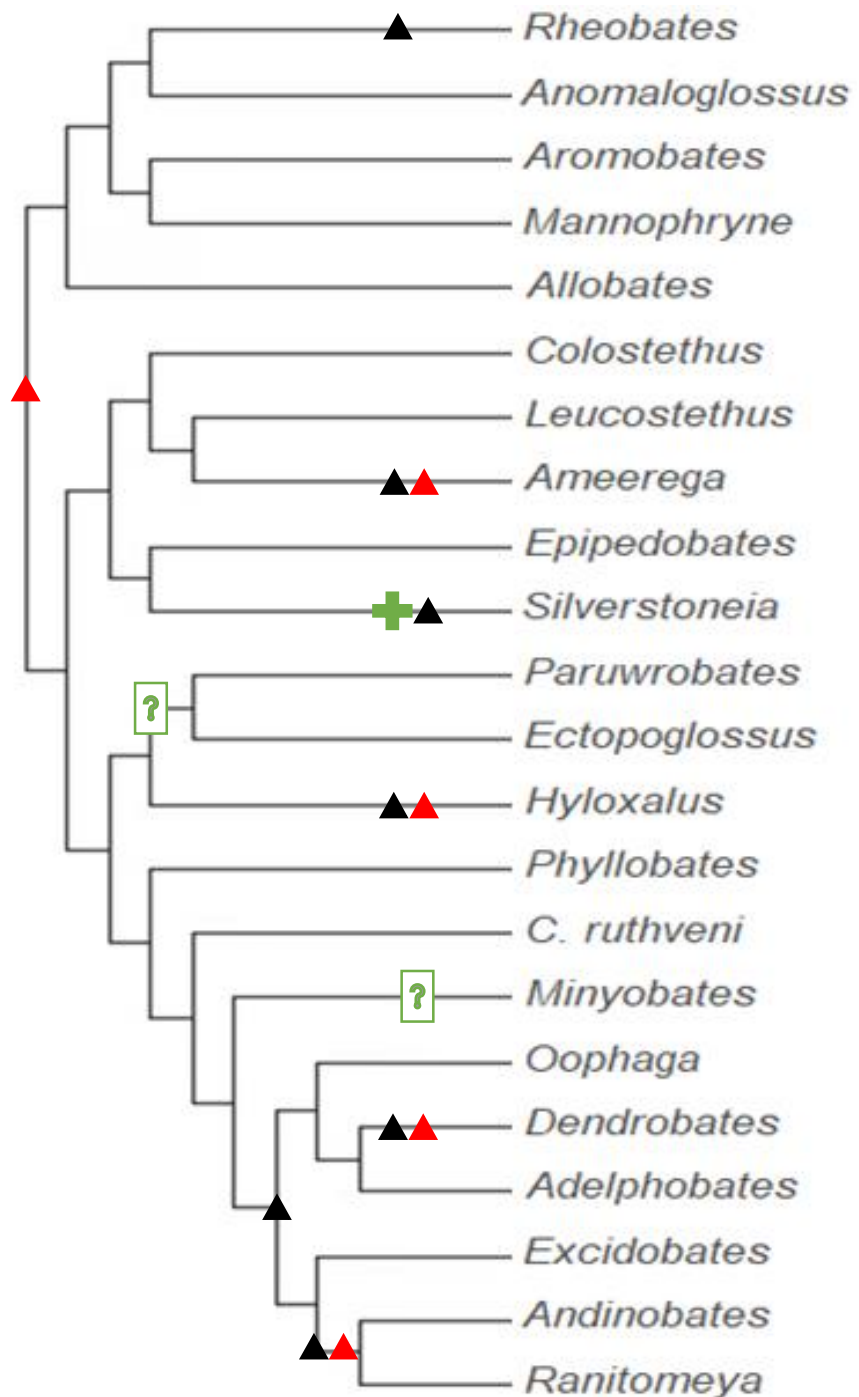
189. Second row of keratodont tooth of anterior lip, medial gap (A2-gap)

▲ 0. absent

▲ 1. present

+ NA





190. First row of keratodont tooth of posterior lip, medial gap (P1-gap)

- ▲ 0. absent
- ▲ 1. present
- + NA

Rheobates

Anomaloglossus

Aromobates

Mannophryne

Allobates

Colostethus

Leucostethus

Ameerega

Epipedobates

Silverstoneia

Paruwrobates

Ectopoglossus

Hyloxalus

Phyllobates

C. ruthveni

Minyobates

Oophaga

Dendrobates

Adelphobates

Excidobates

Andinobates

Ranitomeya

?

?

?