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### *Philothamnus ruandae*

Loveridge, 1951

### Rwandan Green Snake

### REPRODUCTION

O. S. G. PAUWELS & J. BRECKO

*Philothamnus ruandae* Loveridge, 1951 is an Albertine Rift endemic colubrid found in Burundi, eastern Democratic Republic of Congo, Rwanda and southwestern Uganda, from 700 to 2900 m a.s.l. (Roelke and Smith 2010; Wallach et al. 2014). Although some aspects of its natural history are relatively well known about its reproduction, Spawls et al. (2002, 2018) reported “Lays eggs, no clutch details known”.

To contribute towards filling this knowledge gap on the biology of this species, we digitally examined five adult females in the collections of the Royal Belgian Institute of Natural Sciences and of the Royal Museum for Central Africa, including the holotype and three paratypes (Loveridge 1951, 1958; Table 1).

**Table 1.** Data for five gravid adult female *Philothamnus ruandae*. \*Dimensions of the eggs are only based on intact eggs.

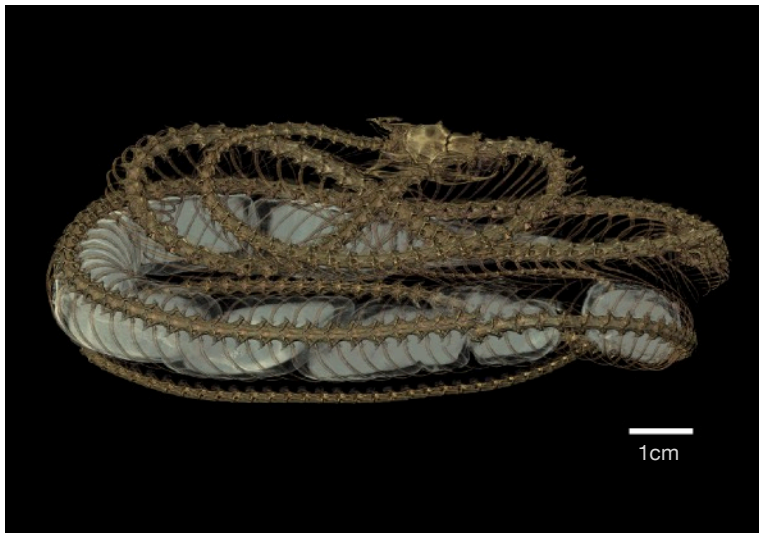
Accession number	Locality	Snout-vent length (mm)	Clutch size	Average egg dimensions (length x breadth, in mm)*
RBINS 2053 (holotype; formerly RBINS 4268)	Mulungu (ca. 1800 m a.s.l.), South-Kivu, DRC	649	9	28.5 x 11.9
RBINS 2054 (paratype; formerly RBINS 2614)	Kamatembe (2100 m a.s.l.), Kivu, DRC	552	4	29.5 x 11.1
RBINS 2055 (paratype; formerly RBINS 4253)	M’Pala (ca. 760 m a.s.l.), Rég. Kanzenze, Lualaba, DRC	680	12	29.1 x 12.7
RBINS 2056 (paratype; formerly RBINS 4254)	Mulungu (ca. 1800 m a.s.l.), Sud-Kivu, DRC	710	9	30.2 x 13.2
RMCA 76-58-R-1	Bugarama (ca. 2200 m a.s.l.), Burundi	603	8	31.4 x 12.8

We used high resolution x-ray computed tomography (RX EasyTom 150, 110 kV, 30 W, 30.8–33.4  $\mu\text{m}$  voxel size), with segmentation and rendering done using Dragonfly software version 4.0 for Windows (Object Research Systems Inc., Montreal, Canada, 2019; software available at <http://www.theobjects.com/dragonfly>). Each specimen examined contained eggs (Figs. 1–2 and Table 1), which we measured in Dragonfly ORS using the measuring tool.

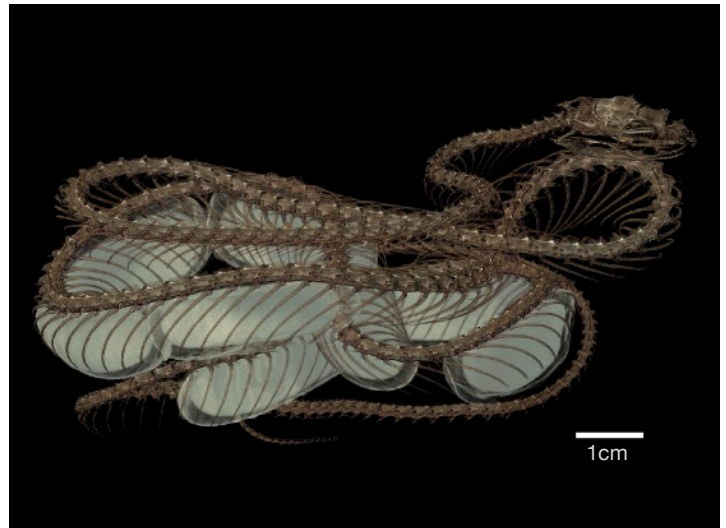
The smallest gravid female has a snout-vent

length of 552 mm, and clutch size varies from 4–12. RMCA 76-58-R-1 was collected on 7 August 1976.

Thus, it seems that the eggs would have been laid during the short rainy season. RBINS 2054 was collected between the 11<sup>th</sup> and the 21<sup>st</sup> April 1934, and RBINS 2056 was collected in October 1947, thus during the long and the short wet seasons, respectively. There is no information on the precise collecting date for RBINS 2053 or RBINS 2055. The wide elevational gradient occupied by the species possibly plays a role in its reproductive phenology.



**Figure 1.**  $\mu\text{CT}$  tomogram of the holotype of *Philothamnus ruandae* (RBINS 2053) showing nine eggs in situ. Scale bar represents 1 cm.



**Figure 2.**  $\mu\text{CT}$  tomogram of another adult female *Philothamnus ruandae* (RMCA 76-58-R-1), showing eight eggs in situ. Scale bar represents 1 cm.

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### SUBMITTED BY:

#### OLIVIER S. G. PAUWELS

Royal Belgian Institute of Natural Sciences, Vautierstraat 29, 1000 Brussels, Belgium.  
E-mail: [opauwels@naturalsciences.be](mailto:opauwels@naturalsciences.be)

#### JONATHAN BRECKO

Royal Belgian Institute of Natural Sciences, Vautierstraat 29, 1000 Brussels, Belgium; Royal Museum for Central Africa, Leuvensesteenweg 13, 3080 Tervuren, Belgium.  
E-mail: [jbrecko@naturalsciences.be](mailto:jbrecko@naturalsciences.be)