

## The Identity of *Cochliophagus isolepis* MÜLLER, 1924 (Serpentes: Colubridae)

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**Abstract.** Reexamination of the holotype of *Cochliophagus isolepis* MÜLLER, 1924, has shown that it does not differ from *Dryocalamus nympha* (DAUDIN, 1803), confirming its synonymous status with the latter. A lectotype for *Coluber nympha* is designated and described.

Key words. Reptilia, Serpentes, Colubridae, *Cochliophagus isolepis* new synonym, *Dryocalamus nympha*.

### Introduction

*Cochliophagus isolepis* was described as a new species of snake by L. MÜLLER in 1924. Its type locality was given (in translation) as “South America without precise locality”. The collector is unknown. The holotype is located in the herpetological collection of the Museum für Naturkunde der Humboldt-Universität zu Berlin (ZMB), where it is catalogued as ZMB 8164. The original entry in the ZMB catalogue and the label both read *Leptognathus isolepis*.

Although MÜLLER (1924: 91) mentioned that his new species would share similarities with the genus *Leptognathus* DUMÉRIL, BIBRON & DUMÉRIL, 1854, he eventually decided to allocate it to the genus *Cochliophagus* DUMÉRIL, BIBRON & DUMÉRIL, 1854.

The species name has been mentioned only rarely in the past and its real identity has remained uncertain. WERNER (1929: 189) and AMARAL (1930: 28) listed the taxon as *Cochliophagus isolepis*. AMARAL (l.c.) re-examined the holotype, noted similarities with *Sibynomorphus anthracops* (COPE, 1868) (= *Sibon anthracops*), but also commented that *C. isolepis* would differ from *S. anthracops* by having a divided anal scute and a higher number of ventral scales and was not likely to be a representative of the Neotropical fauna.

PETERS (1960, 1965) made no mention of

this species. It was only in 1970 and 1986 that *C. isolepis* was mentioned once more, i.e., by PETERS & OREJAS-MIRANDA. They included the species in their “incertae sedis” section, pointing out that this could not be a representative of the subfamily Dipsadinae even though some species of the genus *Cochliophagus* DUMÉRIL, BIBRON & DUMÉRIL, 1854, were reallocated to the genus *Sibynomorphus* FITZINGER, 1843. *C. isolepis* was still treated as a taxonomically uncertain name in the most recent treatise of the American snake fauna (TIPTON 2005).

### Material and methods

This contribution is based on a study of the holotype of *Cochliophagus isolepis* (ZMB 8164) and the two syntype specimens of *Coluber nympha* (now *Dryocalamus nympha*) that are deposited in the Natural History Museum London (BMNH 1946.1.13.69 and 1946.1.13.70). Comparisons of the range of variability of *D. nympha* with the specimens examined by ourselves were made using data from the following sources: RUSSELL (1796), DAUDIN (1803), DUMÉRIL, BIBRON & DUMÉRIL (1854), WALL (1921), SMITH (1943), DE SILVA (1980), and WHITAKER & CAPTAIN (2004), and are summarized in Table 1. Dorsal scale rows were counted at one head-

length behind the head / at mid-body / at one head length anterior to the anal scute. Ventral counts were taken according to DOWLING (1951). The terminal scale is not included in the subcaudal count. Values of symmetrical traits of the head are given in left / right order. Abbreviations and acronyms are: DSR - dorsal scale rows; VEN - ventrals, SC - subcaudals, A - anal scute, L - loreal, Preoc - preoculars, Postoc - postoculars, Tem - temporals, SL - supralabials. BMNH: The Natural History Museum, London, U.K.; ZMB: Museum für Naturkunde der Humboldt-Universität zu Berlin, Germany.

## Results

The re-examination with the aim of establishing the factual identity of *Cochliophagus isolepis* was effected with the aid of identification keys for various continents (e.g., BOULENGER 1893, 1894, 1896, COGGER 1994, DE

ROOIJ 1917, ERNST & ERNST 2003, LEVITON et al. 1992, MANTHEY & GROSSMANN 1997, MEIRTE 1992, O'SHEA 1996, PETERS & OREJAS-MIRANDA 1970, 1986, SMITH 1943, SMITH & TAYLOR 1945, SZCZERBAK 2003, TAYLOR 1922, 1965, ZHAO & ADLER 1993). The result was that the specimen could not be identified as a representative of the American, African, European or Australian snake faunae. Its pholidosis, dentition, coloration and colour pattern, however, clearly suggested affinities with the genus *Dryocalamus* GÜNTHER, 1858, of Asia.

In contrast to the statement made in the original description, the holotype specimen exhibits a distinctly formed chin groove. This trait indeed indicates that it cannot be a representative of the subfamily Dipsadinae (sensu PETERS 1965; genera *Dipsas*, *Sibon* and *Sibynomorphus*). We also noted that the data provided by MÜLLER (1924) deviated in some other aspects, and we will list these in the following, together with observations not

Tab. 1. Selected characteristics of *Cochliophagus isolepis* and *Dryocalamus nympha*; values that differ from data provided in the respective original descriptions are given in brackets; for a key to abbreviations and references used for determining the range of variability of *D. nympha* see "Material and methods". \* WHITAKER & CAPTAIN (2004: 208) mention that the 3rd or 4th supralabial touching the eye. This is a typographical error (A. CAPTAIN in lit. April 2007).

	<i>C. isolepis</i> ZMB 8164	<i>D. nympha</i> BMNH 1946.1.13.69	<i>D. nympha</i> BMNH 1946.1.13.70	<i>D. nympha</i> Variation
DSR	13/13/13	13/13/13	13/13/13	13/13/13
VEN	2+226 (229)	1 + 235 (234)	2 + 225 (243)	200-248
SC	82 (83)	84 (87)	78 (82)	65-88
A	divided	divided	divided	divided
L	1/1	1/1	1/1	1
Preoc	1/1	1/1	2/2	1-2
Postoc	2/2	2/2	1/1	2
Tem	2+2/2+3 (2+2)	2+2/2+2	2+3/2+3	2+2
SL	7/7	7/7	8/8	6-8
SL touching eye	3 <sup>rd</sup> and 4 <sup>th</sup>	3 <sup>rd</sup> and 4 <sup>th</sup>	4 <sup>th</sup> and 5 <sup>th</sup>	3 <sup>rd</sup> and 4 <sup>th</sup> or 4 <sup>th</sup> and 5 <sup>th</sup> *
Light crossbars total	52	38 (36)	25 (body only; tail faded, not countable)	35-50
Maxillary teeth	10	11	10	9-11
Total length in mm	216 (219)	440 (432)	372 (229)	max. 533



Fig. 1. Holotype of *Cochliophagus isolepis* (ZMB 8164).



Fig. 2. Lectotype of *Coluber nympa* (BMNH 1946.1.13.69).

published before: The holotype (Fig. 1) is a juvenile specimen with a snout-vent length of 175 mm and a tail length of 41 mm (216 mm in total length); the head is oval and flat, little distinct from the neck; the body is slender. Colour and pattern are partly faded. The ground colour is dark brown, with light cream-coloured bands (33 on the body, 19 on the tail). These are wider ventrolaterally and, beginning with the 5th band, embrace a dark spot in the flared base. Beginning at about mid-body, the light bands have dark speckles in their centres, creating the impression of an irregular band. The light bands are 2-3 scales in width in the region of the vertebral scale row, with their widths decreasing to 1-2 scales towards the base of the tail; the dark interspaces cover 7 to 8 scales vertebraally in the anterior part of the body, decreasing to a width of 3 scales anterior to the tail. The supralabials, temporal region, posterior parts of the head, and the ventral side are uniform cream in colouration.

Pholidosis: Dorsals in 13/13/13 smooth, straight rows, homogeneous in shape (near-



Fig. 3. Portrait of the head of the lectotype of *Coluber nympa* (BMNH 1946.1.13.69).

ly as long as wide), vertebral scale row and distal rows not enlarged; 2 + 226 keeled ventrals, angular at their outer margins; 82 divided subcaudals (3rd and 4th entire), anal scute divided; 7 supralabials, the 3rd and 4th in contact with the eye; 1 loreal, twice as long as high and in contact with the eye; 1 small preocular above the loreal, not extending onto the upper side of the head and not touching the frontal; nasal partially (bottom part) divided, with the suture meeting with the first supralabial, naris in prenasal; 2 postoculars, the upper one larger; 2+2 / 2+3 temporals; rostral distinctly wider than high, visible from above; 2 internasals, wider than long, shorter than the prefrontals; 2 prefrontals, wider than long, extending far onto the sides of the head to about the level of the centre of the eye; frontal pentagonal, longer than wide, and distinctly longer than its distance from the rostral; parietals longer than wide; 8 infralabials, the first pair behind the mental in contact with each other, the first 4 touching the anterior inframaxillars; 2 pairs of inframaxillars, the anterior ones nearly of equal width, but almost twice as long as the posterior ones; no invasive gulars between the inframaxillars; eye large, with a slightly vertical-elliptical pupil, eye diameter smaller than the distance between the anterior margin of the eye and the tip of the snout.

Dentition: 10 maxillary teeth, without grooves, conical-stout, increasing in size posteriorly, without diastemae; palatine and pterygoid teeth very small and all of about the same size; 19 mandibular teeth, the first five of which are slightly enlarged.

These characteristics coincide largely with those given for *Dryocalamus nympha* by, e.g., RUSSELL (1796), DAUDIN (1803), WALL (1921), SMITH (1943), DE SILVA (1980), and WHITAKER & CAPTAIN (2004) (comp. Tab. 1). We therefore regard *Cochliophagus isolepis* MÜLLER, 1924, as a subjective junior synonym of *Dryocalamus nympha* (DAUDIN, 1803). The locality "South America" must therefore be an error, as the known distribution range of *D. nympha* extends from Sri Lanka through southwestern India to the Indian state of Orissa in the east (DE SILVA 1990, WHITAKER & CAPTAIN 2004).

### Discussion

Examination of the specimens regarded as syntypes of *Coluber nympha* DAUDIN, 1803 in the collection of the Natural History Museum London (BMNH 1946.1.13.69-70) revealed inconsistencies with the original description. DAUDIN's description of his *Coluber nympha* was based on data previously published by RUSSELL (1796: 42-43) and the iconotypes illustrated in the latter's plates 36 and 37. RUSSELL's original values for the two type specimens are quoted in the description provided by DAUDIN (1803: 244) as follows: "Scutis abdom. 234. - Scutellis subcaud. 87 - 321." for the specimen figured in RUSSELL's plate 36, and "Scutis abdom. 243. - Scutellis subcaud. 82 - 325." for the specimen in plate 37. RUSSELL (1796: 42) mentioned for the first specimen (plate 36) "thirty-six transverse bands" and a length of "one foot five inches" [= 432 mm], and gave "Vellore" as its locality of collection. For the second specimen (RUSSELL 1796: 42-43, plate 37), a length of "nine inches" [= 229 mm] was given, but there is neither information on the number of light bands nor as to its provenance.

Later data on the type material of *Coluber nympha* that coincide with the values given by RUSSELL (l. c.) and DAUDIN (l. c.), respectively, can be found in SCHLEGEL (1837: 120) and GÜNTHER (1864: 233). BOULENGER (1890:

298) and WALL (1921: 268) also mentioned the maximum value of 243 ventrals given for RUSSELL's specimen "XXXVII".

BOULENGER's "Catalogue of the snakes in the British Museum (Natural History). Volume I." (1893: 370) then lists two specimens of *D. nympha* as types with the following values: "V. 231, 225; C. 83, 77". Even though these values clearly coincide with the specimens examined by ourselves (BMNH 1946.1.13.69-70), they just as obviously differ from the original data provided by RUSSELL (l. c.) and DAUDIN (l. c.) as far as the specimen BMNH 1946.1.13.70 is concerned (see Table 1). This suggests that the latter mentioned specimen does not form part of the original type series. This notion finds further support in a comparison of RUSSELL's (1796) data on its length for the smaller specimen (No. XXXVII) with the length established by us for the alleged syntype BMNH 1946.1.13.70 (229 vs. 372 mm). Doubts with regard to a proper allocation of the type material must already arise from the notes made by GÜNTHER (1858: 206) in that he referred to both specimens as "a, b. Adult. India Presented by Dr. Russell". This clearly contradicts RUSSELL's description who stated explicitly that the smaller specimen measured only 229 mm in length.

### Designation of a lectotype for *Coluber nympha*

The type series comprises two specimens, of which only one can be identified beyond doubt as forming part of the original series. Besides the specimens marked as syntypes (BMNH 1946.1.13.69-70), the herpetological collection of the BMNH does not contain additional specimens that could be suspected to be type material (C. MCCARTHY in lit. March 2007). Based on the clearly disagreeing values we suppose that the specimen BMNH 1946.1.13.70 has no type series status, but has been mixed up with the second syntype whose present whereabouts are unknown. We therefore designate here, in ac-

cordance with the ICZN (Articles 74.1., 74.4. and 74.7.), the specimen described by RUSSELL (1796: 42) as No. XXXVI “*Katla Vyrien*” and figured in his plate 36 as the lectotype of *Coluber nympha* DAUDIN, 1803.

#### Description of the lectotype

BMNH 1946.1.13.69; Locus typicus: “Vellore” [= Vellore, Vellore District, Tamil Nadu State of India], don. Dr. P. RUSSELL (sent to him by Mr. DUFFIN).

The lectotype (Figs. 2 + 3) is a male with a snout-vent length of 350 mm and a tail length of 90 mm (440 mm in total length); the head is oval in shape, slightly depressed, and little distinct from the neck; the snout is round in dorsal view, and slightly protruding above in lateral view. The body is slender, and subcylindrical in cross section as a result of the ventral keels. Colouration and pattern are substantially faded in the posterior third of the body and on the tail in particular. The ground colour is brown, with light, cream-coloured bands (23 on the body without the nuchal band, 15 on the tail). These are wider ventrolaterally and each exhibit a dark blotch within the widened base. Beginning with the 2nd light band, all subsequent bands sport in their centres an irregular band that is made up of dark speckles. The light bands are 2.5 scales in width at the level of the vertebral scale row anteriorly, and decrease to 2 scales in width towards the base of the tail. The width of the dark interspaces amounts to 9 dorsals vertebraally in the anterior portion, 6 dorsals laterally, and decreases to 4.5-5 dorsals vertebraally and 2 dorsals laterally in the posterior third of the body. The dark areas do not reach the margins of the ventrals. The ventral and subcaudal colouration is uniform cream white, with the tail tip being dark. The shields of the pileus as well as the scales of sides of the head are uniform dark brown. This does not apply to the posterior margin of the parietals, which falls within the region of the light nuchal band, as do the posterior

portions of the temporals and the posterior-most supralabial.

Pholidosis: Dorsals in 13/13/13 smooth straight rows, homogeneously shaped (almost as long as wide, rhomboid), vertebral scale row and outer row not enlarged, individual apical pits present; 1 + 235 keeled ventrals, angular at their outer margins; anal scute divided; 84 divided subcaudals; caudal reduction: 8 to 6 (from the 18th SC), to 4 (from the 37th SC), to 2 (from the 74th SC); 7/7 supralabials, the 3rd and 4th in contact with the eye, the 6th largest; 1/1 loreals, twice as long as high, in contact with the eye and the 2nd and 3rd supralabials; 1/1 small preocular above the loreal, which does neither extend onto the upper side of the head nor touch the frontal; nasal partially (below) divided, with the suture meeting with the first supralabial; naris in prenasal; 2/2 postoculars, of about the same size, the upper one in contact with the parietal and the upper anterior temporal, while the lower one touches the two anterior temporals and the 4th and 5th supralabials; 2+2 / 2+2 temporals; rostral distinctly wider than high, visible in dorsal view; 1 pair of internasals, wider than long, shorter than the prefrontals; 1 pair of prefrontals, wider than long, extending far onto the sides of the head to about the level of the centre of the eye; frontal pentagonal, longer than wide, longer than its distance from the rostral, but shorter than the parietals; supraoculars narrow, as long as the frontal; 1 pair of parietals, longer than wide; 8 infralabials, the first pair in contact behind the mental, the first four touch the anterior inframaxillars, the 4th and 5th in contact with the posterior inframaxillars, the 6th is the largest; 2 pairs of inframaxillars, the anterior pair longer and slightly wider than the posterior pair; no invasive gulars between the inframaxillars; eye large, with a slightly vertical-elliptical pupil, diameter of eye smaller than the distance between the anterior margin of the eye to the tip of the snout, eye diameter equal to the distance between the anterior margin of the eye to the naris.

Dentition: The maxillary teeth are missing on the left-hand side, while on the right, there used to be 11 maxillary teeth, of which only the last three are completely preserved. These are conical, stout, grooveless, with no diastemae; palatine and pterygoid teeth very small and equal in size; the mandibular teeth of the left side cannot be counted due to the poor state of preservation, on the right-hand side there used to be 16, of which only the posterior 7 are left.

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