Hamadryad Vol. 30, Nos. 1 & 2, pp. 167 – 171, 2006.

A SECOND SPECIMEN OF *PARAHELICOPS ANNAMENSIS* BOURRET, 1934 (SERPENTES: COLUBRIDAE: NATRICINAE)

Bryan L. Stuart

The Field Museum of Natural History, Department of Zoology,
Division of Amphibians & Reptiles, 1400 S. Lake Shore Drive,
Chicago, Illinois 60605–2496, U.S.A.
Email: bstuart@fieldmuseum.org

The University of Illinois at Chicago, Department of Biological Sciences,
845 W. Taylor, Chicago, Illinois 60607, U.S.A.

Wildlife Conservation Society, P. O. Box 6712, Vientiane, Lao P.D.R.

(with three text-figures)

ABSTRACT.– *Parahelicops annamensis* is a natricine colubrid snake known only from the holotype described in 1934 from central Vietnam. Here, I report on a second specimen collected in 1999 in the mountains of southern Laos, ca. 105 km from the type locality. I use the Laos specimen to provide the first information on morphological variation, colouration in life and habitat usage.

KEYWORDS.– Laos, Vietnam, taxonomy, *Parahelicops annamensis*, *Opisthotropis*.

INTRODUCTION

Bourret (1934) described a new genus and species of natricine colubrid snake, *Parahelicops annamensis*, on the basis of a single specimen of unreported sex from Bana (= Ba Na, Danang Province, according to Orlov et al., 2003), central Vietnam. The species has not been reported since the collection of Bourret's type specimen (Smith, 1943; Campden-Main, 1970; Orlov et al., 2003). Bourret (1934, 1936) provided no information on the ecology of the type specimen, such as the habitat or elevation from which it was obtained, and consequently *P. annamensis* remains one of the least known colubrid snakes in Indochina.

In July 1999, I collected a specimen of *P. annamensis* in the mountains of southern Laos. This specimen represents the second known record of the species, and the first from Laos. Here I use the Laos specimen to supplement the original description of the species with data on variation, colouration in life and habitat usage.

MATERIALS AND METHODS

The Laos specimen was caught in the field by hand, preserved in 10% buffered formalin, and later transferred to 70% ethanol. A tissue sample was taken by preserving a piece of liver in 95% ethanol before the specimen was fixed in formalin. The specimen was deposited in the Field Museum of Natural History (FMNH). Measurements were made after preservation with a soft measuring tape to the nearest mm. Maxillary tooth positions were counted from a x-ray radiograph of the skull. Data on the type specimen were taken from Bourret (1934, 1936).

SYSTEMATICS

Parahelicops annamensis Bourret, 1934

Parahelicops annamensis Bourret, 1934:6; Bourret, 1936:122; Taylor & Elbel, 1958:1158; Campden-Main, 1970:46; Orlov, Darevsky & Murphy, 1998:61; Orlov, Ryabov, Nguyen & Nguen, 2003:232.

***Opisthotropis annamensis* Smith, 1943: 334.**

(Figs. 1, 2)

Material examined.– FMNH 258637, female, Laos, Xe Kong Province, Kaleum District, Xe Sap National Biodiversity Conservation Area, 16° 04' 10"N 106° 58' 45"E, 1,280–1,500 m elev., coll. B. L. Stuart, 5 July 1999.

Description.– Head distinct from neck. Approximately 27 maxillary tooth positions, the posterior tooth largest. Eye small, pupil round. Nostril directed dorsally. Rostral broader than high, slightly visible from above; nasal weakly divided; two internasals narrowed anteriorly; two prefrontals, slightly broader than long (one prefrontal in the type); frontal about as broad as long, equal to its distance from the snout tip, shorter than the length of the suture of the parietals, about half the length of the parietals; one large loreal; two preoculars; two postoculars (three in the type), the upper largest; eight supralabials on both sides (eight on right, nine on left in the type), fourth and fifth touching the eye, the sixth prevented from touching the eye by the lower postocular (referred to as a subocular by Bourret, 1934); 1 + 1 + 2 temporals on the left, 1 + 2 on the right (1 + 3 temporals on the left, 1 + 1 + 2 on the right in the type); ten infralabials on both sides (eight on left, nine on right in the type), fifth and sixth touching posterior chin shield; anterior pair and posterior pair of chin shields about equal in length, the second pair separated from each other by an elongated scale; body scales in 17 : 15 : 15 rows, median rows feebly keeled anteriorly, becoming more strongly keeled posteriorly; tail scales very strongly keeled, eight longitudinal keel rows at base of tail, reducing to four rows distally; 167 ventrals (169 in the type); 117 paired subcaudals (123 in the type); total length 558 mm (460 in the type), tail length 180 mm (160 in the type).

Colour in life.– Eye black; body above iridescent purplish-brown, sides brown; irregular orange markings on top of head; orange stripe from posterior margin of eye to neck, continuing onto body as broken dorsolateral stripe, becoming less distinct posteriorly; indistinct longitudinal rows of dark brown spots; tail iridescent purplish-brown.

Colour in preservative.– Purplish-brown fading to dark brown; orange fading to cream; venter cream, dark speckling on chin, outer margin of ventrals dark brown.

Distribution, ecology and behaviour.– *P. annamensis* is known only from the type locality of Bana in Danang Province, Vietnam, and from Xe Sap National Biodiversity Conservation Area in Xe Kong Province, Laos. These two localities are ca. 105 km straight-line distance apart (Fig. 3). The Laos specimen was collected at night (2030 h) in steep terrain covered by wet evergreen forest between 1,280–1,500 m elevation. The snake was first observed on land on a rock ledge 50 cm from a small, swift, rocky stream. When startled, the snake dove into the water and swam under a rock on the stream bottom, where it was captured.

DISCUSSION

The Laos specimen matches Bourret's (1934) type specimen of *Parahelicops annamensis* so closely that there is little question as to its identification. The most significant discrepancy is the presence of two prefrontals in the Laos specimen, as Bourret (1934) considered a single prefrontal to be diagnostic for the genus *Parahelicops*.

Although *Parahelicops annamensis* has not been doubted in the literature to be a distinct species, the validity of the genus *Parahelicops* remains uncertain. Bourret (1934) noted in his description the morphological similarity of *Parahelicops* with the aquatic natricine genus *Opisthotropis* Günther, 1872, and Smith (1943) treated *Parahelicops* as a junior synonym of *Opisthotropis*. Taylor and Elbel (1958) resurrected the genus *Parahelicops* with their description of a second species, *P. boonsongi*, from northeastern Thailand, but this species has been returned to the genus *Opisthotropis* by some authors (e.g. Brown and Leviton, 1961; Cox et al., 1998; Chan-ard et al., 1999). No species of *Opisthotropis* have been reported from Laos with certainty, but several species are likely to occur there owing to their known distributions in neighboring parts of Thailand, Vietnam, and China (Bourret, 1936; Deuve, 1970; Orlov et al., 1998). *Opisthotropis* occur in swift mountain streams, where they spend most of their time underwater beneath rocks and in rock crevices (Orlov et al., 1998). *Parahelicops annamensis* probably has a similar ecology, as the Laos specimen tried to escape beneath a rock on the bottom of a swift mountain stream. Studies on the phylogenetic relationship of *P. annamensis* with *Opisthotropis* are clearly warranted.

The lack of any records for at least 65 years after the original description of *Parahelicops*

Figure 1. *Parahelicops annamensis* (FMNH 258637), female, from Xe Kong Province, Kaleum District, Laos, in life. A. Dorsal view; and B. Dorsolateral view.

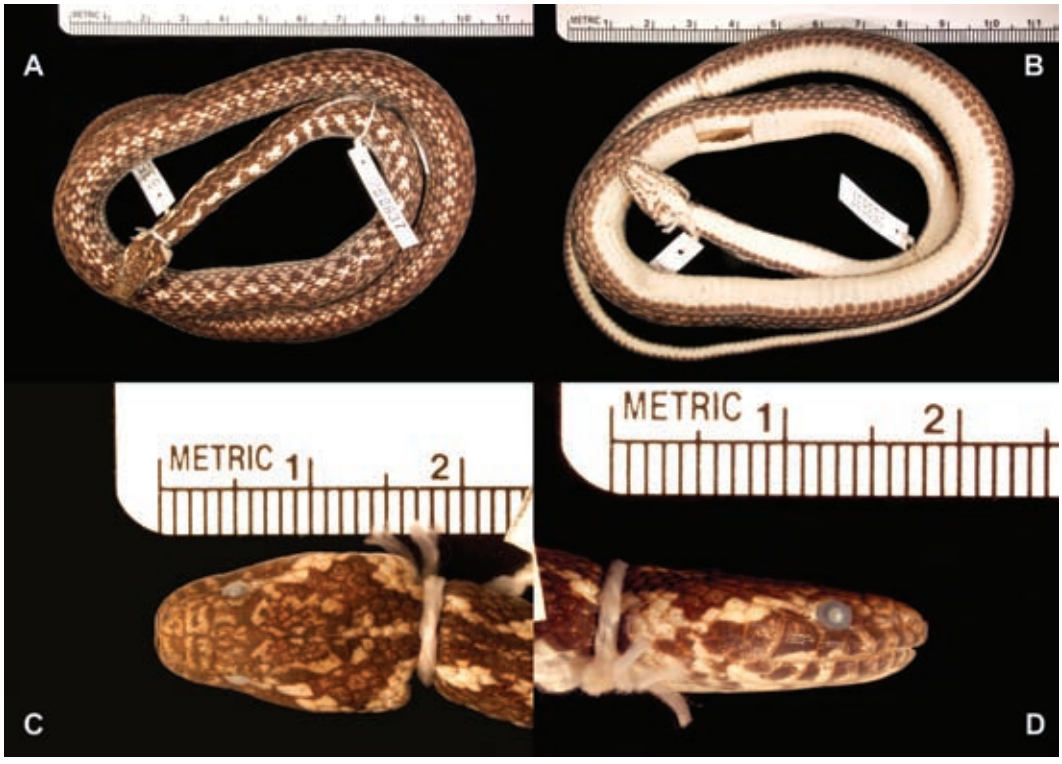

Figure 2. *Parahelicops annamensis* (FMNH 258637), female, in preservative: A. Dorsal view; B. Ventral view; C. Dorsal view of head; and D. Lateral view of head.

annamensis is probably due to a combination of limited collecting by herpetologists within the range of the species, and the secretive (aquatic or semi-aquatic) nature of the species. The presence of *P. annamensis* in Xe Sap National Biodiversity Conservation Area, Xe Kong Province, Laos, is not surprising, given that it and the type locality are in the same mountain block and only about 105 km apart. However, its presence within Xe Sap, a large area designated for biodiversity conservation by the government of Laos, bodes well for the continued survival of the species.

ACKNOWLEDGEMENTS

The opportunity to work in Laos was made possible by the Wildlife Conservation Society/ Division of Forest Resource Conservation Co-operative Program. The Ministry of Agriculture

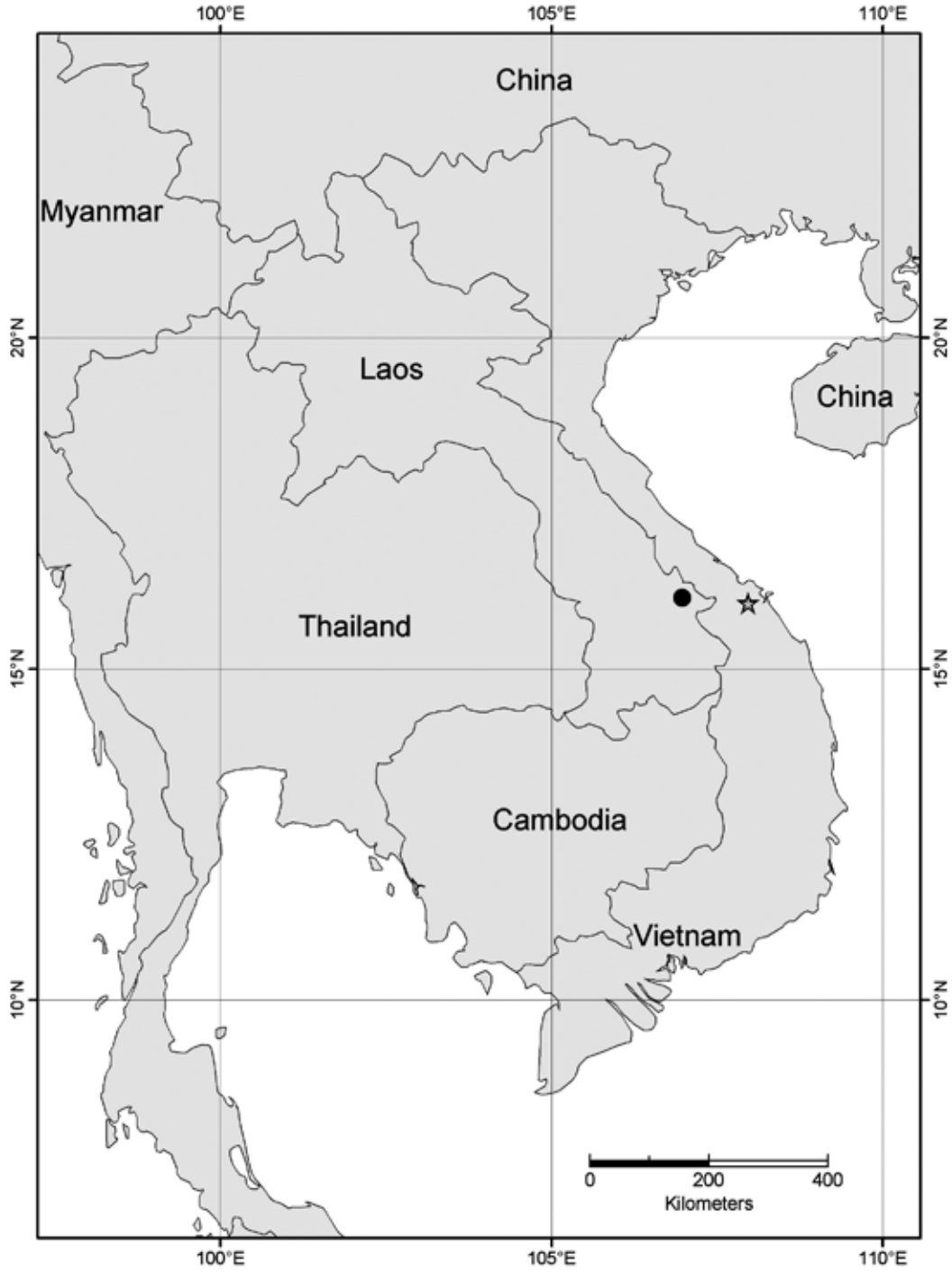

Figure 3. Map showing the type locality (indicated by a star) of *Parahelicops annamensis* at Bana, Vietnam, and the new locality (indicated by a circle) of a specimen (FMNH 258637) from Xe Kong Province, Kaleum District, Laos.

and Forestry (Vientiane, Laos) permitted export of the specimen to FMNH. Financial support was provided by The John D. and Catherine T. MacArthur Foundation, the National Geographic Society (grant no. 6247–98), and the Wildlife Conservation Society. I am grateful to M. Hedemark, A. Johnson, and T. Hansel for facilitating fieldwork, B. Thaovanseng for field assistance, S. Drasner for photographing the preserved specimen, S. O. Bober for constructing the map, H. Voris, A. Resetar, J. Ladonski, and J. Mui for facilitating the examination of the specimen at FMNH, M. Kearney for assisting with x-raying the specimen, and R. Inger and an anonymous reviewer for improving the manuscript.

LITERATURE CITED

BOURRET, R. 1934. Notes herpétologiques sur l'Indochine française. III. Ophidiens d'Annam et du moyen Laos. Bulletin Général de l'Instruction Publique 9:167–176.

_____. 1936. Les serpents de L'Indochine. Imprimerie Henri Basuyau & Cie., Toulouse. Vol. I, 141 pp.; Vol. II, 505 pp.

BROWN, W. C. & A. E. LEVITON. 1961. Discovery of the snake genus *Opisthotropis* in the Philippine Islands, with description of a new species. Occasional Papers of the Natural History Museum of Stanford University 8:1–5.

CAMPDEN-MAIN, S. M. 1970. A field guide to the snakes of South Vietnam. Smithsonian Institution, Washington, D.C. v + 112 pp, 1 pl.

CHAN-ARD, T., W. GROSSMANN, A. GUMPRECHT & K.-D. SCHULZ. 1999. Amphibians and reptiles of peninsular Malaysia and Thailand: an illustrated checklist. Bushmaster Publications, Würselen. 240 pp.

COX, M. J., P. P. VAN DIJK, J. NABHITABHATA & K. THIRAKHUPT. 1998. A photographic guide to snakes and other reptiles of Thailand and south-east Asia. Asia Books Co., Ltd., Bangkok. 144 pp.

DEUVE, J. 1970. Serpents du Laos. Mémoire O.R.S.T.O.M. (Office de la Recherche Scientifique et Technique Outre-Mer) 39:1–251.

GÜNTHER, A. C. L. G. 1872. Seventh account of new species of snakes in the collection of the British Museum. Annals and Magazines of Natural History 9:13–37.

ORLOV, N. L., I. S. DAREVSKY & R. W. MURPHY. 1998. A new species of mountain stream snake, genus *Opisthotropis* Günther, 1872 (Serpentes: Colubridae: Natricinae), from the tropical rain forests of southern Vietnam. Russian Journal of Herpetology 5(1):61–64.

_____, S. A. RYABOV, S. V. NGUYEN & T. Q. NGUEN. 2003. New records and data on the poorly known snakes of Vietnam. Russian Journal of Herpetology 10(3):217–240.

SMITH, M. A. 1943. The fauna of British India, Ceylon and Burma, including the whole of the Indo-Chinese Sub-Region. Reptilia and Amphibia. Vol. III. Serpentes. Taylor and Francis, London. 583 pp.

TAYLOR, E. H. & R. E. ELBEL. 1958. Contribution to the herpetology of Thailand. The University of Kansas Science Bulletin 38(13):1033–1189.

Received: 14 July 2005.
Accepted: 8 September 2005.