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# Adelynhoserserpenae wellsi, a new species of Jumping Pitviper from Mexico (Serpentes: Viperidae).

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### ABSTRACT

The northern population of two disjunct populations of snakes, formerly regarded as Adelynhoserserpenae *occiduus* (Hoge, 1966) is herein classified as a new species and named according to the Zoological Code. The reclassification is based on previously published morphological and molecular studies that have been robustly tested.

**Keywords:** Taxonomic revision; new species; Viperidae; Crotalinae; *Atropoides; Adelynhoserserpenae*; Hoser; snake; new species; *occiduus; wellsi;* pitviper.

#### INTRODUCTION

The so-called Jumping Pitvipers genus *Adelynhoserserpenae* Hoser, 2012 are native to Middle America. They have gained their name due to their alleged ability to jump at a potential attacker. While this aspect of their behavior and ability may be exaggerated, they are known to strike at birds flying in the air at close range.

All of these snakes are extremely thick-bodied, with the species taxon *A. nummifer* being the most stout.

The genus *Adelynhoserserpenae* Hoser, 2012 was created by the removal of all species from the genus *Atropoides* except for the type species, namely *Atropoides picadoi* on the basis of morphological and molecular data.

This totaled five recognized species for *Adelynhoserserpenae*, namely:

Adelynhoserserpenae indomitus (Smith and Ferrari-Castro, 2008)

Adelynhoserserpenae mexicanus (Duméril, Bibron and Duméril, 1854)

Adelynhoserserpenae nummifer (Rüppell 1845) (Type species for genus)

Adelynhoserserpenae occiduus (Hoge, 1966)

Adelynhoserserpenae olmec (Perez-Higareda, Smith and Julia-Zertuche, 1985)

The species remaining within the genus *Atropides* Werman, 1992 namely *Atropides picadoi* is quite morphologically different

from those members of *Adelynhoserserpenae* in general build, being more slender and with other significant morphological differences as detailed in Campbell and Lamar (2004).

Numerous aspects of the snakes of the genera *Atropides* and *Adelynhoserserpenae* have been studied by various authors including, Burger (1950), Castoe *et al.* (2003), Castoe and Parkinson (2006), Dunn (1939), March (1929), McCranie (2011),

Parkinson (1999), Porras and Solórzano (2006) and Werman (1984, 1992).

There have been a number of studies into the so-called Jumping Pitvipers with a view to resolving the taxonomy of the group with the genus *Atropoides* being created by Werman in 1992, by removal from the larger genus *Porthidium* Cope, 1871.

Werman's placement has been supported by most authors since 1992, including, Campbell and Lamar (2004), Castoe, *et al.* (2003) and others.

In their study of the molecular systematics of the then recognized *Atropoides* group Castoe *et al.* (2003) found that *A. picadoi* was divergent from all the other then described taxa within the genus *Atropoides* as defined by Werman in 1992.

The other species tested were, *Adelynhoserserpenae nummifer*, *A. mexicanus*, *A. occiduus* and *A. olmec*, all of which clustered as a group, while *Atropoides picadoi* showed closer affinities to *Cerrophidion godmani*.

Refer to fig 2, in Castoe *et al.* 2003 (all four diagrams) for the exact result.

The authors deferred making any taxonomic changes pending further research into the group of snakes.

Pyron *et al.* (2011) did a broad-ranging study into the phylogeny of the advanced snakes (Colubroidea) which included analysis of four of six known species then placed in the genus *Atropoides*.

The excluded species were indomitus and mexicanus.

The species *mexicanus* is essentially similar to *nummifer* and showed up as extremely close to this taxa in the 2003 results of Castoe *et al.* 

The taxon *indomitus* was formally described by Smith and Ferrari-Castro in 2008. Using mitochondrial gene sequence data, the authors found the new species *indomitus* to represent

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the sister species of Adelynhoserserpenae occiduus, with 5.7 % sequence divergence separating the two taxa.

Both *A. occiduus* and *A. nummifer* were well-placed in the cluster strongly divergent from *A. picadoi* in the results of Castoe *et al.* 2003, so a similar position for *indomitus* is easily inferred. Pyron *et al.*'s results of 2011, while restricted to four nominal taxa within the then nominal genus *Atropoides*, effectively

mirrored and confirmed the results of Castoe *et al.* (2003), again showing that *picadoi* was sufficiently divergent from the other taxa as to be placed in a separate genus.

As it was the taxon *A. picadoi* that was the type species for the genus *Atropoides*, it was all the other recognized species that therefore were placed in the new genus *Adelynhoserserpenae* Hoser, 2012.

The diagnosis of that new genus as done by Hoser, 2012 was as follows:

### GENUS Adelynhoserserpenae HOSER, 2012

Type species: Atropos nummifer Rüppell 1845

## (Currently recognised in most contemporary texts as *Atropoides nummifer*)

**Diagnosis:** Adelynhoserserpenae Hoser, 2012 is easily separated from the genus *Atropoides* by scalation. In *Adelynhoserserpenae* males have 104-136 ventrals, versus 138-155 in *Atropoides* (Campbell and Lamar 2004), females have 103-138 ventrals, versus 143-145 in *Atropoides* (Campbell and Lamar 2004).

This difference reflects the physical reality that *Atropoides* is a much longer and slender animal than all species in *Adelynhoserserpenae* Hoser, 2012.

In *Adelynhoserserpenae* nasorostrals are often present, (as opposed to always absent in *Atropoides*), there is a single row of subfoveals separating prelacunal from supralabials (versus 1-3 rows of subfoveals separating prelacunal from supralabials in *Atropoides*).

Atropoides is defined above in this diagnosis as only including the species taxon *A. picadoi.* 

A. picadoi is a relatively thinly bodied species, versus the thickset body form of Adelynhoserserpenae.

Character states such as intersupraoculars, supralabials, infalabials, dorsal mid-body scale rows and lateral body blotches are highly variable both between and within species and are not helpful in separating the genera.

However Atropoides picadoi has considerably smaller shields at the back of the head than all species of Adelynhoserserpenae. In Atropoides these shields would be defined as small, whereas in Adelynhoserserpenae they'd be defined as medium (refer also to fig. 91 in Campbell and Lamar 2004).

The genus *Adelynhoserserpenae* is found from northeastern Mexico southward through Central America to central Panama. They are usually forest dwellers.

For a detailed description of the snakes in the genus *Atropoides* as defined until 2012 (which would act to diagnose this new genus *Adelynhoserserpenae* Hoser, 2012 in conjunction with the information above), refer to pages 274-290 of Campbell and Lamar (2004).

The very thickset build of *Adelynhoserserpenae* easily separates them from other pitvipers.

Campbell and Lamar (2004), page 275, detailed minor hemipenal differences between the species *mexicanus* and *picadoi*, which was further investigated by Jadin *et al.* (2010) who found little significant differences between the various species in both genera.

However investigation of venom composition and toxicity is required, as so far it has been shown that in

Adelynhoserserpenae it seems to be considerably less toxic to humans than for *Atropoides picadoi* (Campbell and Lamar 2004).

**Etymology:** Named in honor of the author's eldest daughter, Adelyn Hoser, who by age 13 had more expertise with snakes than most people many times her age.

She had been handling the world's deadliest snakes since she was a baby and with complete safety as they were all venomoid (Hoser 2004), giving her unrivalled knowledge of the inner workings of venomous snakes. Hence it's fitting that she should be recognized by having a genus of venomous snakes named in her honor.

I also note the disgusting and reprehensible behavior of Mark O'Shea, Wolfgang Wüster, Wulf Schleip, Hinrich Kaiser, Brian Crother and others (Kaiser *et al.* 2013), who in that paper and elsewhere have found reason to attack myself for daring to name genera after family members who have made huge contributions to herpetology and wildlife conservation in general, even though Wüster and some of the others have themselves engaged in the allowable practice of assigning patronyms to reptile taxa they have named.

The intense hate campaign by these men, that has included many false statements and many thousands of hate posts on numerous internet sites, chat forums, Facebook, Twitter and the like has been despicable and a serious breach of the ethics of the Zoological Code (Ride *et al.* 1999).

# THE ADELYNHOSERSERPENAE OCCIDUUS SPECIES GROUP.

The snakes generally assigned to the species

Adelynhoserserpenae occiduus until now, are known from two disjunct populations ranging from El Salvador to Mexico, with the bulk of known specimens, including the holotype coming from an area near Guatemala City in Guatemala.

Two publications of roughly the same date provided evidence to show differences between both the Mexican and more southern populations of the snakes assigned to this species. Castoe *et al.* 2003 gave molecular evidence to support the contention that there may be two separate species involved.

Widely divergent genotypes conformed with the geographically divergent groups.

Campbell and Lamar gave detailed morphological differences between the two populations, but not in any way considering the possibility that they may be different at the species level. However a merging of the data of Castoe *et al.* (2003) and

Campbell and Lamar (2004), leads to the inescapable conclusion that the northern population from south-west Mexico must be a separate, albeit closely related species taxon.

As a result it is formally described and named according to the Zoological Code below.

#### ADELYNHOSERSERPENAE WELLSI SP. NOV.

**Holotype:** A specimen at the Carnegie Museum, Pittsburgh, Pennsylvania, USA, specimen number: CM 51749, from near Motozintla, Mexico, 15.3708° N, 92.2483° W.

The Carnegie Museum, Pittsburgh, Pennsylvania, USA is a publicly accessible facility that allows access to its specimens for bonafide researchers.

**Diagnosis:** Until now the species *Adelynhoserserpenae wellsi sp. nov.* would have been identified as *Adelynhoserserpenae occiduus* (Hoge, 1966), with which it is most superficially similar.

The diagnosis for the species *Adelynhoserserpenae occiduus* (Hoge, 1966), in Campbell and Lamar (2004) does in fact in effect contain a diagnosis for this species, in that the authors correctly identify consistent differences between the two populations of snakes they refer to the species *Adelynhoserserpenae occiduus* (Hoge, 1966), written in their

book as Atropoides occiduus (Hoge, 1966).

All Adelynhoserserpenae wellsi sp. nov. have 1-3 large nasorostrils on one or both sides. In the species Adelynhoserserpenae occiduus (Hoge, 1966) there are no nasorostrils on one or both sides and in the rare cases that one or more are present (less than 30% of the time), these are clearly very small and reduced in size, which is not a condition seen in *Adelynhoserserpenae wellsi sp. nov.* 

In all specimens of *Adelynhoserserpenae occiduus* (Hoge, 1966) every individual exhibits broad contact between the rostral and prenasal and the apex of the rostral is broadly rounded, extending to the canthal ridge.

Adelynhoserserpenae wellsi sp. nov. is a very stout ground dwelling pitviper. Adults are typically between 35-60 cm in total length, although sizes larger than this are known.

The species *Adelynhoserserpenae mexicanus* attains a far larger size and girth.

The dorsum of the head in Adelynhoserserpenae wellsi sp. nov. is medium to dark brown, with or without darker markings. A dark brown postocular stripe extends from behind the eye to the angle of the jaw. The postocular stripe is broad, involving all of the second temporal scale row, most or all of the first temporal scale row; and some or all of the third temporal scale row and may also include some or all of the adjacent portion of the fourth temporal scale row. The upper and lower edges of the postocular stripe are dark. The posterior extent of the postocular stripe is variable, but it usually curves downward and behind the rictus and is broadly rounded at its posterior end. A large, blackish brown subocular spot extends from the edge of the orbit well onto the supralabials but does not reach the lip margin. A small but distinctive dark blotch is almost always present just below the pit, extending from the prelacunal and/or sublacunal across supralabials 2 and 3 to the lip margin. The rostral often has a dark spot, and a series of irregular dark spots is usually present along the lateral margin of the lower jaw. A pair of dark brown nape blotches are frequently fused posteriorly.

Some individuals may have a bold subocular spot that does not reach the orbit.

A series of dark brown rhomboidal dorsal blotches extends the length of the body and onto the tail. Sometimes the dorsal blotches are separate on the anterior part of the body, but they invariably become joined posteriorly, forming a wide zig-zag band. The 27-38 lateral blotches are usually roundish and separate from the dorsal blotches.

Most brown markings including the dorsal and lateral blotches are narrowly outlined in black or dark brown. The ground color is generally pale brown or burgundy brown, although snakes may be pinkish brown, reddish brown, or purplish brown.

The venter ranges from having a few dark spots or an irregular checkerboard pattern to being heavily mottled with brown. Small dark ventrolateral blotches alternate with the lateral blotches and are present on the first dorsal scale row and the lateral edges of the ventrals. The subcaudals are mostly dark except for irregular pale markings and the distal subcaudals may be mostly pale.

There are 7-12 intersupraoculars and the supraoculars are never fragmented. There are 8-10 supralabials, 9-12 infralabials, 21-27 mid-body scale rows, 125-137 ventrals, 24-36 undivided subcaudals. The scales on the mid dorsal surface are strongly

keeled, but they do not approach the hatchetlike, tubercular scales of *Adelynhoserserpenae mexicanus*.

**Distribution:** Known only from the far south-west of Mexico, namely the Chiapas area.

**Etymology:** Named after well-known Australian reptile taxonomist Richard Wells, currently of Lismore, NSW., in recognition of his seminal taxonomic works that he coauthored with taxonomist Cliff Ross Wellington, now of Woy Woy, NSW, published in 1983 and 1985 (Wells and Wellington 1983, 1985).

There was an attempt to formally suppress their 1983 and 1985 works at the ICZN which refused to do so in a ruling in 1991. This attempt to suppress their work was based on totally false claim that it lacked scientific merit, although the real agenda of the people seeking to suppress the work was to fraudulently rename the same species and genera themselves and as they pleased.

Notwithstanding the formal ruling by the ICZN, a number of socalled herpetologists have in fact sought to fraudulently and in violation of the rules of Zoological Nomenclature (Article 23. Principle of Priority) to rename validly named Wells and Wellington species and genera of snakes, including Smith (1985), where he renamed the species *Antaresia saxacola* Wells and Wellington, 1985, *"Liasis stimsoni"* and Van Wallach (2006), who renamed *Sivadictus* Wells and Wellington, 1985, *"Austrotyphlops"*.

More recently a group of nine renegade so-called herpetologists, led by Hinrich Kaiser, Wulf Schleip, Mark O'Shea, Brian Crother and Wolfgang Wüster have sought to illegally steal all the scientific work of Wells in the post 2000 period and claim it as their own!

#### (Kaiser et al. 2013)

Kaiser *et al.* (Kaiser *et al.* 2013) seek to break and destroy the rules of Zoological Nomenclature (Ride *et al.* 1999) including the three critical rules of:

Homonymy (Principal 5, Article 52 and elsewhere),
Priority (Principal 3, Article 23 and elsewhere),
Stability (Principal 4, Articles 23, 65 and elsewhere),
as well as the ethics of the Code (Appendix A).

They seek to do this in the first instance by boycotting established nomenclature and the established rules in a war plan that must by their own account run for decades (Kaiser *et al.* 2013, p. 20). They first seek to boycott all Well's names proposed in the post 2000 period.

They then seek coin their own names for hundreds of taxa already properly named by Wells and others including myself (Hoser) and even Fitzinger (Leopold Joseph Franz Johann Fitzinger, the acclaimed taxonomist who lived from April 13, 1802 to September 20, 1884) and attempting to take credit for the research work of the earlier authors. This will create unprecedented taxonomic instability and confusion.

Their actions will effectively:

1/ Freeze the progress of herpetological taxonomy and if copied, perhaps all of zoology;

2/ Put lives at risk;

3/ Increase the likelihood of extinctions of rarer taxa.

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### CONFLICT OF INTEREST

The author has no conflicts of interest in terms of this paper or conclusions within.

