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A NEW SPECIES OF *PLETHODON* FROM NORTHERN IDAHO

James R. Slater and John W. Slipp

On September 13, 1939, while collecting on the south shore of Wolf Lodge Bay, Coeur d'Alene Lake, Idaho, two adult and three very small juvenile specimens of an undescribed species of *Plethodon* were taken by the authors. On the basis of this collection the following new species is hereby described and named.

PLETHODON IDAHOENSIS sp. nov.

Coeur d'Alene Salamander

Figures 1 and 2

Type Locality: Northeast corner of Coeur d'Alene Lake, Kootenai County, Idaho; elevation about 2160 feet; zone, Semiarid Transition.

Description of Holotype: College of Puget Sound No. 2710, adult male, collected by the senior author. General form moderate for a *Plethodon*, with broad head, well-developed limbs and a slender tail; depth nearly uniform from behind eyes to posterior edge of anus; width greatest across head (behind eyes) at gape, noticeably reduced in neck region; tail slender; metameric grooves evident on lateral and ventral surfaces from forelimbs to tip of tail; a median dorsal groove extends from occipital region onto base of tail; a median ventral groove on base of tail, becomes obscure on belly. Head broad, much flattened, widest across rostral bulges, greatest depth posteriorly, cranial and rostral dorsa in a plane sloping forward between eyes to internasal ridge; orbits prominent in the dorsal outline, moderately so in lateral outline; muzzle angular, abruptly truncate; canthus rostralis prominent; end of snout overhanging mouth; naso-labial grooves descend vertically from the postero-ventral edges of the nostrils along the antero-lateral corners of the muzzle to the upper lip, the edge of which is drawn down strongly at these two points in tab-like points extending across end of lower jaw at either side of snout; nostrils slightly oval, oblique; gape copious, slightly upturned at the corners; eyes large, prominent, orbital slit about equal to length of canthus rostralis, less than interorbital width; a prominent paratoid gland extends backward from between the postero-ventral rim of the orbit and the corner of the mouth onto the side of the neck, terminated posteriorly by a groove running up, and to a lesser extent back, from end of gular fold; a definite paratoid groove extends back from the eye through the upper part of the paratoid gland, turning down posteriorly to meet the end of the gular fold, and producing one fairly definite branch descending vertically behind, the end turn-



Fig. 1.



Fig. 2.



Fig. 3.

ing forward and ending under, the rictus. Mouth cavity large, extending well back of gape; choanae small, slightly elliptical, the long axis approximately postero-lateral; dentition of jaws moderate, extensive; vomerine teeth in two nearly straight, widely divergent, series almost united on median line between anterior edges of orbital depressions, and extending to points a choanal diameter behind and slightly external to the choanae; parasphenoid teeth in two patches fused along the median line but showing a tendency to separate into two lobes at the posterior end, the whole being rounded at either end, broadest posteriorly, much longer than wide, and extending forward to a point between the orbital depressions 2-3 choanal diameters from the vomerine series; tongue large, flat, thin-edged, ovate, broadest posterior to the middle, the posterior end obtusely pointed, attached along the median line, the lateral portions and posterior quarter free. Body somewhat depressed, broadest just posterior to middle, tapering evenly into neck and tail regions except for minor swellings at the insertions of the limbs; costal grooves 13, the 12th and 13th joined at the groin, ventrally less distinct, nos. 3-11 continuous across belly; cloaca a narrow slit, nearly flush with adjoining surfaces, the edges at the posterior end bearing slightly raised, flattened fleshy lips with posterior ends not reaching quite to the end of the cloacal slit and overlapping on the adjoining surfaces behind and to the side. Limbs strong and well-developed, the hind limbs noticeably the longer; hind feet large, webbed, broadly palmate, with five toes, in order of decreasing length, 3,4,2,5,1; fore feet with four toes, very slightly webbed the inner or first much reduced (scarcely evident on the right foot), in order of decreasing length 3,2,4,1, the second and fourth nearly equal; toes rather short and heavy, rounded and somewhat swollen at the ends with prominent subterminal pads; web of hind foot extending from near tip of first toe to first joint of second, from first joint of second to second of third, between the second joints of the third and fourth, and much reduced between the fourth and fifth. Tail about 4/5 length of head and body, slender, tapering, acutely tipped, somewhat depressed basally, moderately compressed in distal 2/3. Skin generally smooth, dotted with minute pores, coarsened on the muzzle and adjacent areas of the head, markedly coarsened and pitted in glandular areas covering the tail, sides of body, upper surfaces of limbs, and especially the paratoids.

Coloration from life (Ridgway designations are italicized): Principal elements two, the yellow dorsal band and the general black of the remaining surfaces. Dorsal band *aniline yellow* on tail, changing to *old gold* on head and body, darkened on head and towards end of tail with numerous *bone brown* specks; band broadest on head where upper

eyelids are included, narrowed on the neck, expanding again on body, and tapering almost to tip of tail, all in sympathy with contours of body; boundaries of band on head extend on either side from anterior edge of muzzle along canthus rostralis, orbital slit and upper surface of paratoid gland; boundaries of band on body rendered irregular by numerous minor invasions of both black and yellow elements, and occasional larger and more evenly rounded intrusions of the yellow. Black ground of remaining surfaces tinged with brownish in head region, on plantar and palmar surfaces, and bordering dorsal band on body, lightening to *fawn color* on mid-ventral area of lower jaw and to *dark vinaceous-drab* on lips, tips of toes and end of snout. Tiny specks of *pallid neutral gray* occur over most of the black or blackish areas, generally clustered in dense aggregations of varying extent, being most abundant on sides of head, body, base of tail and on the limbs (soles immaculate), fairly numerous on venter of head and neck, sides of belly, cloacal area and sparse elsewhere. Iris, russet brown with occasional gold or brassy flecks. Peritoneum blackish.

Notes on Allotype: College of Puget Sound No. 2711, female, collected by the senior author. Very similar to holotype with the following principal differences: head more elongate, the snout slightly less angular; axilla to groin measurement and lengths of fore and hind limbs less in proportion to total length; cloaca a simple slit. Dorsal band on body without "evenly rounded" projections of the borders; fawn colored area of underchin largely replaced by a patch of yellow surrounded and invaded heavily by the surrounding darker pigments; grayish-white specking much less extensive, aggregations occurring only locally in areas behind the hind limbs and on the ventral and lateral surfaces of the neck, being more widely scattered but fairly numerous on the ventral and post-rictal areas of the head, and on the limbs.

Comparisons: Distinguished from comparable forms except *Plethodon vandykii* by webbed toes, subterminal pads on digits, parasphenoids in fused patches, 12 (-13) costal folds, and paratoid glands.

Distinguished from *P. vandykii* to which it is closely related, by more elongate form, greater width of head, more angular shape of head, broader and more truncate snout (the end much wider), the greater amount of black in the coloration and blackish peritoneum.

The darker colored specimens of *vandykei* are less black than *idahoensis*, both in tone and extent of color. All such black specimens of *vandykei* which the authors have examined have the upper surfaces of the legs and the under surface of the same distinctly light-colored, a yellow similar to that of the dorsal band.

Diagnosis: A broad-headed, slender-tailed *Plethodon* of moderate size with prominent eyes and well-developed parotoid gland and limbs; toes moderately webbed, with prominent sub-terminal pads.

MEASUREMENTS OF THE HOLOTYPE, ALLOTYPE, AND PARATYPES
in millimeters of five specimens of

PLETHODON IDAHOENSIS

No. Sex	CPS	CPS	JWS	JWS	JWS
	2710 M.	2711 F.	39113c3 Juv.	39113c4 Juv.	39113c5 Juv.
Total Length	101.5	78.0	40.5	39.2	34.3
Head Length ¹	11.7	10.2	5.7	5.9	5.1
Tail Length ²	46.0	33.8	16.1	15.7	13.8
Head Width ³	8.0	6.4	4.1	4.3	3.9
Orbital Slit.....	2.3	2.0	1.2	1.3	1.3
Interorbital Space..	2.7	2.3	1.5	1.5	1.4
Foreleg and Hand....	13.4	9.6	5.2	5.0	4.7
Hand.....	4.8	3.9	1.7	1.9	1.6
Axilla to Groin.....	30.6	22.4	12.3	11.4	10.7
Hind Leg and Foot...	14.6	11.0	5.6	5.9	5.2
Hind Foot.....	6.5	5.0	2.8	3.0	2.7
Costal Grooves.....	13-13	14-13	13-13	13-14	13-13
Intercostal Spaces ⁴ .	2-2	2-1	2-2	1-1	2-2

Description of Juvenile: (based on 3 paratypes collected by the junior author, especially 39113c). Snout abruptly truncate, but narrow at end; supralabial tabs well developed. General form robust, neck not narrowed, sides of head parallel, eyes very prominent (broadest). Webs and pads developed fully. Costal grooves very evident, even to end of tail; not distinct on back, but slightly oblique. Cloaca a simple slit. Mid-ventral groove evident in pelvic. Parotoid prominent, post-ocular groove definite. No yellow chin patch, gray flecks noticeable on anterior surface of humerus and forward to gular fold and on ventral of head. Toes 3,4,2,5,1 right; left 4,3,2,5,1. Tongue slightly truncate. Protrusions of yellow numerous along back. Corners of mouth not turned up. Dentition evident; vomerines somewhat curved. Parasphenoids in one patch.

General Remarks: All five of the specimens were taken at the foot of a high cut bank above the road which follows the edge of Coeur d'Alene Lake (Fig. 3), the two adults from a rock and dirt talus and the three juveniles from the gravel floor at the entrance of a very wet mine .6 of a mile distant. The latter were drowned and fixed in formalin the day of capture, while the former were kept in a jar with a

¹snout to gular fold; ²from posterior edge of cloaca; ³at greatest width; ⁴between adpressed limbs, the figure for the right side given first.

little sphagnum until December, 1939. The forest in this vicinity has a humid aspect, containing much douglas fir and dwarf maple, while a few miles westward the yellow pine and the open plains of the arid transition predominate.

While in captivity a few notes were obtained on various phases of their behavior. When undisturbed they remained quiet for the most part, in or under the moss, but when taken in the hand for examination or posed for photographing, they were exasperatingly persistent in their efforts to get away. Walking was accomplished by taking quite long and energetic strides which allowed a rapid advance ordinarily. They were hardy, for several times when apparently overcome by warmth, dryness and handling they recovered quickly with moisture and a little rest. Both were in good condition when finally anaesthetized and preserved, the male eating a medium-sized, green-bodied "housefly" the day previous. The fly, which was crippled, was stalked and struck at 2 or 3 times before it was finally snapped up by the tongue at a distance of a quarter inch from the snout, held for a few seconds, and swallowed.

The discovery of this form is of particular interest as it seems to be the first record of a Plethodontid taken in the Rocky Mt. system, certainly the first of a strictly terrestrial nature. No members of this family have been recorded even for the eastern slope of the Cascade range in Washington as yet, and except for a few Texas species the above statement appears to us to be true.

Two specimens (Holotype CPS 2710 and JWS 39113C3) are to be deposited in the United States National Museum.

COLLEGE OF PUGET SOUND
TACOMA, WASHINGTON

SALAMANDER RECORDS FROM BRITISH COLUMBIA

James R. Slater

While on a sight-seeing trip in Capilano Creek canyon, north of North Vancouver, British Columbia, we visited a place called "salmon pool" about five or six miles up the canyon from the mouth of the stream on April 21, 1940. While climbing out of the canyon, I turned over some decaying bark and found an *Ensatina eschscholtzii* (CPS 2730) and a very few feet away, I found a *Plethodon vehiculum* (CPS 2731). The first specimen is 59 mm. in length, of typical coloration; and the second 82 mm. in length, with red dorsal stripe.

As far as I can discover from the literature, these species have not been reported from anywhere north of Burrard Inlet and Indian Arm before. Gertrude Smith Watney (Copeia 1938:89) last reported these species from the campus of the University of British Columbia and *P. vehiculum* from Burnaby but these stations are both south of Burrard Inlet. It is