

## ON A SMALL COLLECTION OF BATRACHIANS WITH DESCRIPTIONS OF TWO NEW SPECIES.

BY W. S. BLATCHLEY.

While collecting mollusca in southeastern Tennessee in the summer of 1900, Mr. L. E. Daniels of Laporte, Indiana, picked up six specimens of salamanders and placed them in a flask of alcohol which by chance he had with him. A few months after his return he kindly presented the specimens to me, and on examining them carefully I was agreeably surprised to find four species represented, of which two are evidently undescribed.

After sending specimens to Washington, D. C., for comparison with the known types represented in the Smithsonian Institute, and having my surmises as to the undescribed species verified, I have concluded to publish the descriptions in this connection. The species represented in the collection were as follows:

### **DESMOGNATHUS NIGRA (Green).**

One specimen of this large black salamander was taken and several others seen. According to Cope "it is abundant in the streams of the rocky ravines and cold springs in the remotest depths of the forests of the Alleghany Mountain ranges from Pennsylvania southwards. It seeks concealment with great activity under loose stones and slabs of slate and is not easily captured. Sometimes it snaps fiercely but harmlessly and throws its body into contortions." The specimen at hand has the ground color of bluish-black, broken on the lower surface in front of gular fold, and on sides from posterior border of eye to front limb, by numerous small dots and splotches of brownish yellow. Otherwise it agrees with Cope's description.\*

Its measurements are as follows: Total length, 143 mm; snout to posterior end of cloaca, 82 mm; snout to gular fold, 21.5 mm; width of head, 14 mm; distance from axil to groin, 53 mm.

\* *Batrachia of N. Am.*, p. 198.

**SPELERPES sp. ?**

A single specimen of a small *Spelerpes* which resembles *S. ruber* Daudin in form and in arrangement of vomero-palatine teeth, and *S. maculicaudus* Cope in color, was in the collection. The ground color is bright orange-yellow which, on the top and sides of the head, body and basal third of tail, is irregularly spotted with numerous small black dots.\* The margins of both jaws are also almost covered with elongated black spots. With this latter exception the color is the exact facsimile of that of *S. maculicaudus*. The tail, however, is strongly compressed throughout its full length and is much shorter proportionally than in *maculicaudus*.

Measurements: Total length, 78 mm; snout to cloaca, 49 mm; snout to gular fold, 10 mm; width of head, 8 mm; distance from axil to groin, 31 mm.

It is impossible to say just where this specimen belongs. It may be an immature form of *S. ruber*. If so the spots become larger and more numerous in the adult. It may be the young of the next species, but the position of the parasphenoid teeth which, in the specimen at hand, are nearly contiguous, would seem to disprove this. The ground color is also much lighter and the spots more numerous.

**SPELERPES DANIELSI sp. nov.**

Groups with *S. ruber* Daudin but differs from that species in the much greater distance separating the series of parasphenoid teeth; in the larger and more depressed head; in the presence of prominent subnarial processes, and in color; the entire dorsal surface to middle of sides being (after immersion in alcohol) a light chocolate brown with fewer and more widely scattered black spots than in *ruber*, the throat reticulate with black, the remainder of the under surface light brownish gray, immaculate.

Palatine teeth originating behind and extending outward beyond the inner nares; forming an abrupt rectangle and continuous with the parasphenoid series; the latter strictly parallel and separated throughout their full length by a space almost 2 mm in width, or more than twice the width of each patch of teeth. Head wider and more depressed than in *ruber*; the greatest width contained 1.36 times in distance from tip of lower jaw to gular fold. Anteorbital ridges prominent; the interorbital space dis-

\*These dots are much smaller and more widely scattered than in typical specimens of *S. ruber* Daudin.

tinctly wider and the snout longer and broader than in specimens of *ruber* of the same size. Upper jaw slightly overlapping the lower and bearing on its margin immediately below each nostril a tubercle which is connected with the nostril by a slit at right angles to the nasal opening.\*

Body subcylindrical, elongate, its length 4.3 times the distance from tip of snout to gular fold. Tail shorter than body, its distal two-thirds strongly compressed and bearing an acute membranous flap or keel along the median line of its dorsal surface. Limbs comparatively short, weak; when appressed lacking  $7\frac{1}{2}$  intercostal spaces of meeting. Digits unwebbed; the third finger half as long again as the second and fourth, which are of equal length; the third toe slightly longer than the fourth, and twice as long as the second and fifth, which are equal. Gular fold distinct; costal grooves 16, including the one in axil. Skin of back and lower surface smooth; that of the intercostal spaces, and sides and under part of head, thickly beset with shallow pits.

Ground color of dorsal surface of entire body a light chocolate brown, bearing widely scattered, irregular shaped dots of black, except on distal two-thirds of tail where they are lacking. On the middle of sides the chocolate brown gives way to a light grayish brown or putty color, which is immaculate except in front of the gular fold, where there are many spots and reticulations of black on the throat and margins of both jaws. In one of the specimens the ground color of the lower half of intercostal spaces is broken with many small yellowish points and dots.

Measurements of larger specimen: Total length, 160 mm; snout to posterior end of cloaca, 95 mm; snout to gular fold, 18 mm; width of head, 12.5 mm; length of fore limb, 17.5 mm; of hind limb, 19.5 mm; of tail, 65 mm; distance from axil to groin, 62 mm.

It was at first thought that this might be the *S. ruber montanus* of Baird, but Dr. L. Stejneger, of the Smithsonian Institute, to whom one of the specimens was sent for comparison with typical examples of that form, writes: "Your specimen is certainly not *S. montanus*, as one of the essential characters of that form is the excessively close approximation of the two rows of parasphenoid teeth on the median line; whereas your specimen has them more apart than any one in our large series."

\*These subnareal processes are wholly wanting in *S. ruber*, *S. longicaudus* (Green) and *S. bilineatus* (Green), but are quite prominent in the adults of *S. maculicaudus* (Cope).

Two specimens are in the writer's collection from Sevier County, Tennessee, collected by Mr. L. E. Daniels, to whom I dedicate the species.

**PLETHODON JORDANI sp. nov.**

Allied to *P. glutinosus* (Green) in form, size, and arrangement of palatine and parasphenoid teeth, but differing from that species by possessing longer and more slender digits, and in color; the bluish-white blotches and specks of *glutinosus* being wholly lacking, and an orange yellow bar being present on the sides of head and neck.

The series of palatine teeth extend slightly outward beyond the inner nares and are separated medially from each other by a short interspace and from the parasphenoid series by a little longer one; the parasphenoid patches contiguous along the median line. Head distinctly wider than body; proportionally shorter, broader and more depressed than in *glutinosus*; more distinct from the body than in that species; the greatest width, at angle of jaws, contained 1.3 times in distance from tip of lower jaw to gular fold. Snout short and blunt. Body sub-cylindrical, elongate, its length 3.8 times the distance from tip of snout to gular fold; more depressed anteriorly than in *glutinosus*. Tail slightly longer than head and body, the proximal third cylindrical, the distal two-thirds slightly compressed and tapering gradually to the pointed tip. Limbs relatively weak, when appressed lacking two intercostal spaces of meeting; the digits, when compared with those of *glutinosus*, notably long and slender; the third finger perceptibly longer than the second (4 mm in length); the third and fourth toes equal (almost 5 mm) in length, the webbing at base thinner and less evident than in *glutinosus*. Gular fold distinct; costal grooves 14. Mucous pores of back and sides less numerous and smaller than in *glutinosus*.

Color, after immersion in alcohol, bluish black, immaculate except on sides of head and neck where a brownish-red (in life, according to Mr. Daniels, orange yellow) band,  $3\frac{1}{2}$  to 4 mm in width, extends from posterior border of orbit to gular fold. Lower side of head paler, perhaps with a yellowish tinge in life.

Measurements of larger specimen: Total length, 124 mm; snout to posterior end of cloaca 67 mm; snout to gular fold, 14 mm; width of head, 10 mm; length of fore limb, 16.5 mm; of hind limb, 19.5 mm; of tail, 64 mm; distance from axil to groin, 37 mm.

Two specimens in the writer's collection, from Sevier County, Tennessee.

To Dr. David S. Jordan, President of Stanford University, California, who first guided my wandering footsteps into the highways and byways of scientific research, this handsome species of salamander is respectfully inscribed.

Since the above was in print I have learned from Mr. Daniels that the specimens mentioned were taken on the side of Mt. Collins and at Indian Pass, at an altitude of 3,000 to 5,000 feet. Both of the new species were observed a number of times on the way from Thunder-head Mountain, Blount County, to Indian Pass, and a dozen or more individuals of each could have been taken. They were found beneath old moss-covered logs, usually at some distance from water.