DESCRIPTION OF A NEW SALAMANDER FROM NORTH CAROLINA

By CHARLES F. WALKER

The salamander described below seems to have escaped the attention of any herpetologist until specimens were taken on Grandfather Mountain, in August of 1930, by Hamilton Weller in company with Mr. Ralph Dury. A study of the material during the following winter having convinced Weller that he had an undescribed species, a second trip was undertaken to the same locality in June, 1931, with the object of securing additional specimens and data. While descending the slopes of the mountain after a successful search for this salamander near the summit, Weller was instantly killed in a fall. The specimens of the peculiar salamander have been examined by the writer at the request of Mr. Ralph Dury, Director of the Cincinnati Society of Natural History. Since this salamander seems to differ markedly from any of the recognized forms, it is here described as a new species, dedicated to the memory of its discoverer, Worth Hamilton Weller, with many pleasant recollections of his friendly and stimulating companionship. Through his tragic death at the age of eighteen, herpetology has lost a student of extraordinary promise.

For this opportunity to honor the name of a friend, the writer is deeply indebted to Mr. Dury. The form and terms used in the following description are those employed by Dunn in *The Salamanders of the Family Plethodontidae.*

Plethodon welleri, sp. nov.

DIAGNOSIS. A small *Plethodon* with elongate body; costal grooves 15-17, usually 16; vomerine teeth 5-7 in row; venter dark, not mottled; dorsum in life with small, irregular greenish spots, not evident in preserved specimens.

RANGE. Known only from the type locality.

DESCRIPTION OF TYPE. (C. S. N. H. Herp. 776.1) Adult male collected on Grandfather Mountain, above 5,000 feet, near Linville, North Carolina, August 27, 1930, by W. H. Weller and Ralph Dury. 16 costal grooves; 6 intercostal spaces between appressed toes; head width 7.6 in length from snout to vent; head length 4.8 in length from snout to vent; eye slightly longer than distance from its anterior angle to nostril; snout swollen; a small tubercle at lower end of naso-labial groove; outline of upper jaw concave as seen from side; angle of jaw back of hind angle of eye; both eyelids fitting under a fold of skin behind; a groove from eye to gular fold; a groove from this down behind angle of jaw; limbs weak; fingers 3, 2, 4, 1 in order of length, slightly webbed at base; first finger very short, entirely in web; toes 3, 4, 2, 5, 1 in order of length, slightly webbed at base; vent papillate; tail slightly longer than body, terete; vomerine teeth 5-6 in series, beginning behind middle of nares, the two rows separated in midline by a distance equal to width of naris and from the parasphenoids by 1.5 width of naris; parasphenoids in a single patch beginning at middle of eye sockets; black above, with an irregular brownish dorsal stripe faintly indicated, beginning on head and extending to base of tail; a few small black spots in midline of this stripe; venter uniform dark slaty gray; total length 77 mm., length of head 9, width of head 5.5, body 33, tail 35.

VARIATIONS. An adult female collected in the same locality on June 22, 1931 (C. S. N. H. Herp. 1087) differs in having 4.5 intercostal spaces between the appressed toes; snout not swollen; no tubercle at lower end of naso-labial groove; lining of vent folded, not papillate; tail slightly shorter than body; vomerine teeth 7-6 in series, separated from parasphenoids by a distance equal to twice width of naris; a few unpigmented spots below, most numerous along the sides; total length 77.5, length of head 8.5, width of head 5.5, body 35, tail 34. In the smallest specimen examined (C. S. N. H. Herp. 1091), measuring 23 mm. from snout to vent, the toes of the appressed limbs meet.

In 28 of the 35 specimens there are 16 well defined costal grooves. In five specimens the most posterior two grooves are represented by a single forked groove, giving a count of 16 if both branches are counted. In the two remaining specimens this method of counting gives a total of

17. The number of vomerine teeth in a row varies from 5 to 7, with 5 occurring most frequently.

The most conspicuous feature of the coloration in the preserved material is the dark venter and in this character there is little variation. About one-third of the series show some small unpigmented areas ventrally when examined under a lens. These spots are best developed in the female described above. In none of the series are they sufficiently numerous to produce the mottled effect seen in *cinereus*.

According to Weller's field notes this *Plethodon* in life shows a conspicuous dorsal pattern of small, irregular, greenish-bronze spots, suggestive of *Aneides aeneus*. This color disappears in preservative and in many of the paratypes no dorsal markings are visible. Some, however, as the type and the paratype described above, have a faint, brownish dorsal band with small black spots in the midline, producing a pattern reminiscent of *Desmognathus*, but much obscured.

MATERIAL. Type and 34 paratypes, from the collection of the Cincinnati Society of Natural History, Nos. 776.1-29, taken August 27, 1930; Nos. 1087-1092, taken June 22, 1931. The type and two paratypes have been presented to the United States National Museum.

REMARKS. The mountain slopes at the high elevations where *welleri* occurs are rather sparsely wooded with spruce and fir and there is a dense undergrowth of ericaceous shrubs. Most of the specimens were taken from under logs and stones; some were found under the loose bark of logs. *Plethodon metcalfi* and *Desmognathus fuscus carolinensis* were the only other salamanders taken with *welleri*. Three other species of *Plethodon*, namely, *glutinosus*, *yonahlossee*, and *cinereus* were collected at lower altitudes in the same region. The new species seems to show no very close relationship to any of these, nor, indeed, to any known *Plethodon*. The small size, elongate form, and short vomerine series suggest relationship with the *cinereus* group of the genus, but the color is very different from any other small *Plethodon*. No specimens of Brimley's *Plethodon clemsonae* have been available for comparison. Judging from the description alone (Copeia, 1927, p. 73), *clemsonae* differs from *welleri* in the greater development of the limbs, larger size, fewer

costal grooves, and longer vomerine series. These same characters will also separate unspotted individuals of *glutinosus* from *welleri*. In identifying preserved material, the short limbs and uniform dark underparts of *welleri* will readily serve to distinguish it from small specimens of *metcalfi* and *yonahlossee* which occur in collections from the same region. The sexual maturity of the larger specimens of the series has been determined by dissection.

Dr. E. R. Dunn has kindly examined specimens and has expressed his belief that *welleri* is distinct from any *Plethodon* previously seen by him.

MEASUREMENTS.

Catalogue number	Sex	Total length	Head length	Head width	Body	Vomerine Teeth	Costal grooves	Costal folds between toes
776.2	m.	76	8.5	6	43	5-6	17	5
776.3	m.	79	9	6	43	5-5	16	5
776.4	m.	68	8	5.5	39	5-5	16	4
776.5	f.	78	8.5	6	42	5-5	16	6
1088	f.	66	7.5	5	36	7-7	16	3
1090	f.	63	7.5	5	35	5-5	16	3

Ohio State Museum.