

ART. XXIII.—*Revision of the North American Tailed-Batrachia, with descriptions of new genera and species.* By SPENCER F. BAIRD, Carlisle, Pennsylvania.

The following notes, introductory to a more detailed memoir on the same subject, will, it is hoped, throw some light upon this obscure portion of American zoology. To this we would refer for the descriptions of species, with their anatomical and physiological characters, giving only in this place brief outlines of the genera and the synonymy of the species. It is probable that reference to some, hitherto inaccessible, records will change the specific nomenclature to a certain extent; this, however, can affect only a few. No synonyms or references are quoted, but such as are based (as far as known) upon original descriptions, mere quotations from the previous descriptions of others being omitted.

BATRACHIA URODELA, DUM.

GROUP I. ATRETODERA, Dum. et Bib.

Branchial apertures obliterated at maturity.

Section 1. Sphenoidal teeth absent. Carpus and tarsus ossified in the adults.

AMBYSTOMA, *Tsch.* Vomerine teeth in an undulating transverse row, composed of several curves varying with the species. Tongue broad, fleshy, filling interspace of rami; entirely attached except at the lateral and anterior edges, where it is slightly free. Carpus, tarsus, and basi hyal ossified in extreme adults. Body very stout and clumsy. Skin in some species, with close set glands, secreting a milky fluid.

a. Tail sub-round. Toes rather long and slender, cylindrical or conical.

β. Tail compressed. Toes short, broad, sub-palmate.

NOTOPTHALMUS, *Raf.* Tongue rudimentary; the end of the hyoid apparatus appearing in the mouth as a simple knob. Vomerine teeth forming an acute V in the palate; the vertex between the posterior nares, the branches much prolonged backwards. A bony orbit above the eye, formed by the union of processes from the frontal and tympanic bones, enclosing a foramen through which pass flexor muscles of jaw. Similar in this respect to *Cynops*, *Tsch.*, *Pleurodeles*, *Waltl.*, and *Euproctus*,

Genè. Ossification extending to hyoid apparatus, carpus and tarsus. Vertebra much compressed, with high crests. Three apertures in the skin of the cheeks, behind the eye, not communicating with the cavity of the mouth. Hind feet much flattened; first and fifth hind toes nearly rudimentary.

Section 2. Sphenoidal teeth absent. Carpus and tarsus not ossified in the adults.

Sub-section 1. Tongue entirely attached as in Ambystoma.

PLETHODON, *Tsch.* Sphenoidal teeth on two tangent plates attached to the sphenoidal bone. Skin glandular, exuding a milky fluid. Tail cylindrical. Body more slender than in *Ambystoma*. Eggs deposited in packets under damp stones.

Sub-section 2. Tongue attached anteriorly, evertile as in the Raniformes.

DESMOGNATHUS, *Baird.* Sphenoidal teeth in two narrow patches, attached to the edges of the sphenoidal bone. Occipital condyles very peculiar in consisting of short cylinders projecting from the ex-occipitals, with their axes parallel to that of cranium, and their extremities forming a spherically convex articulating surface. Crest of first cervical vertebra transverse, with a strong ligament passing from each end, across the posterior corner of the cranium, to be inserted into the lower jaw. These ligaments prevent the opening of the jaws beyond a very slight amount. Eggs (in the second species) wrapped round the body of the female, who remains in a damp spot until they are hatched.

HEMIDACTYLIUM, *Tschudi.* Toes, four on the hind feet. Sphenoidal teeth in two broad short patches. Skin somewhat granular. Costal furrows more deeply impressed than common, extending to dorsal line. Tail narrower at the base than near the middle.

Sub-section 3. Tongue entirely protractile, capable of considerable protrusion, circular in shape, and supported on the tip of the constricted hyoid apparatus.

OEDIPUS, (*Tschudi.*) Body stouter than in *Plethodon glutinosus*. Sphenoidal teeth on two plates, not in contact; diverging behind. Toes dilated at the tips into sucker like disks as in *Hyla*.

PSEUDOTRITON, *Tsch.* Sphenoidal teeth much the same as in *Oedipus*, and the other genera of this sub-section. Body very stout, less so than in *Ambystoma punctata*. Tail equal to or less than the body. Breadth of skull about equal to the length.

SPELERPES, Raf. Body very slender. Tail as long or longer than the body. In some species a cirrhoid apparatus projecting from the edge of the upper lip, below the nostril.

BATRACHOSEPS, Bon. Characters much like the last. Toes four on the hind feet.

SYNONYMY OF THE GENERA AND SPECIES.

AMBYSTOMA, Tschudi. (1838.) Class. der Bat. *XIPHONURA*, Tsch.

A. PUNCTATA, Bd. 1767.

Lacerta punctata, (1767) L. Syst. Nat. ed. 13, 370, 45.

Salamandra p. (1802) Lacep. Hist. Quad. Ov. I. 245, 314, (ed. of 1819.)

L. maculata, (1802) Shaw. Gen. Zool. Amph., 304.

Salamandra venenosa, (1803?) Bart. in Daud. Hist. Rept. VIII. 229, (in let. from Raf.)

Lacerta subviolacea, (1809) Bart. Am. Phil. Trs. O. S. VI.—p. 108, Pl. 4, fig. 6.

S. subv. Dekay. (1842) N. Y. Rept. 74, Pl. 21, f. 36.

S. venenosa, (1838) Holb. Herp. 1st ed. III. 105, Pl. 24.; (1842) 2d ed. V. 67, Pl. 22.

Ambystoma subv., (1838) Tsch. Class. der Bat.

HAB. South Carolina, Catesby; Hol.—Carlisle, Pennsylvania, Baird.—Kennebec Co. Maine, Storer.—Meadville, Pennsylvania, Baird.

A. OPACA, Bd. 1807.

Sal. o., (1807) Gravenhorst. Uebers. Zool. Syst. p. 431.—(1829) Grav. Delic. Mus. Vrativ. fasc. i. p. 75, Pl. 10.

S. gravenhorstii, Leukart. fide Fitz. (1825) neue Class. der Rept.

S. fasciata, (Sept. 1818) Green. J. A. N. S., I. 350.—(1838) Hol. Herp. 1st ed. III. Pl. 25; (1842) 2d ed. V. p. 71, Pl. 23.—(1840) Storer. Mass. Rept. 247.—(1842) Dekay N. Y. Rept. 77. Pl. 17. fig. 40.

HAB. Georgia, Virginia, Maryland, Mississippi, Baird. Massachusetts, Storer.

A. JEFFERSONIANA, Bd. January, 1827.

Sal. j. (Jan. 1827) Green. Cont. Mac. Lyc. I. No. 1, p. 4, Pl. fig. 1.—(1842) Hol. Herp. 2d ed. V. 51, Pl. 14.

Triton niger, (1842) Dekay. N. Y. Rept. 85, Pl. 15, f. 35.

Xiphonura j. (1838) Tsch. Class. der Bat.

HAB. Canonsburg, Pennsylvania, Green.

A. MACRODACTYLA, Baird.

A. m. (Sept. 1849) Bd. J. A. N. S., N. S., I. p. 292.

HAB. Oregon.

A. TIGRINA, *Bd.* August, 1825.

Sal. t. (Aug. 1825) Green. J. A. N. S., V. 116.—(1838) Hol. Herp. 1st ed. III. 109, Pl. 25.

Triton t. (1842) Hol. Herp. 2d ed. V. 79, Pl. 26.—(1842) Dekay, N. Y. Rept. 83, Pl. 15, f. 32.

A. LURIDA, *Bd.* (July, 1839.)

Sal. l. (July, 1839) Sager. Sill. Jour. O. S. 36, p. 322.

HAB. Detroit, Michigan.

A. MAVORTIA, *Baird.*

A. m. (Sep. 1849) *Bd.* J. A. N. S., N. S., I. p. 292.

HAB. New Mexico.

A. EPISCOPUS, *Baird.*

A. e. (Sep. 1849) *Bd.* J. A. N. S., N. S., I. p. 292.

HAB. Kemper Co. Mississippi.

Gen. NOTOPHTHALMUS, *Rafinesque*, (March 1820.)

Annals of Nat., No. 24. = *Diemictylus*, Raf. Ib., Near *Cynops*, (1838) Tsch.

N. MINIATUS, *Raf.* March, 1820.

Triturus (N) *m.* (March 1820) Raf. Annals of Nat. No. 24.

Sal. symmetrica, (Nov. 1825) Harlan. J. A. N. S., V. 157.—(1838) Holb. Herp. 1st ed. II. 59, Pl. 11.—1842. Ib. 2d ed. V. p. 57, Pl. 17.—(1842) Dekay N. Y. Rept. 73, pl. 15, fig. 33.—(1840) Storer Mass. Rept. 246.

HAB. Lake Champlain and Northern New York, *Bd.* Massachusetts, Storer. Georgia, *Bd.* Meadville, Pennsylvania, *Bd.*

N. VIRIDESCENS, *Bd.* March, 1820.

Triturus (*Diemictylus*) *v.*, Raf. (March, 1840.) Annals of Nat. No. 22.

Sal. dorsalis, (Jan. 1828) Harlan. J. A. N. S., V. 101.—(1838) Holb. Herp. 1st ed. II. 57, Pl. 10.—(1840) Storer Mass. Rept. 249.

Triton d. (1842) Holb. Herp. 2d ed. V. p. 77, Pl. 25.

Sal. millepunctata, (1838) Storer. Bost. J. N. H., II. p. 60.

Triton m. (1842) Dekay. N. Y. Rept. 84, pl. 15, fig. 34.

HAB. Massachusetts, St. Lake Champlain and Northern New York, Carlisle, Pennsylvania; Cleveland, Ohio; Georgia; Baird.

N. TOROSUS, *Bd.* 1833.

Triton t. (1833) Eschschotlz. Zool. At. Pt. v. Pl. 21, fig. 15, (Scull.)

T. ermanni, (1835) Wiegman. "Erman Reise um die Erde."—1836 Wiegman Archiv.

T. granulatus, (March, 1849) Skilton. Sill. Jour. N. S. VII. 202.

HAB. Oregon City ; Monterey ; San Francisco ; Baird.

Gen. PLETHODON, *Tschudi*, (1838) Class. der Bat. = *Phatnomotorhinus*, Bibron.
() fide Bonap. Fn. it.

P. GLUTINOSUS, *Tschudi*. Sept. 1818.

Sal. g., (Sept. 1818) Green. J. A. N. S. I, 357.—(1838) Hol. Herp. 1st ed. II. 129, Pl. 30 ;—(1842) 2d ed. V. 39, Pl. 10—?? (1840) Storer Mass. Rept. 252 (an *A. jeffersoniana*.)—? (1842) Dekay N. Y. Rept. 81, Pl. 17, f. 42, (very young.)

Sal. variolata, (Dec. 1818) Gilliams. J. A. N. S., I. 460, Pl. 18, fig. 1.

Sal. cylindracea, (Nov. 1825) Harl. J. A. N. S., V. 156.

Triton porphyriticus, (1842) Dekay. N. Y. Rept. 85, Pl. 16, f. 37.

P. g., (1838) *Tschudi*. Class. der Bat.

HAB. New York, Dekay. Carlisle, Pittsburg, Pennsylvania ; Columbus, Mississippi ; Florida, Baird.

P. CINEREUS, *Tsch.* Sept. 1818.

Sal. c., (Sept. 1818) Green. J. A. N. S., I. 356.

P. c., (1838) *Tsch.* Class. der Bat.

HAB. Southern Pennsylvania, Bd.

P. ERYTHRONOTA, *Bd.* Sept. 1818.

Sal. e. (Sept. 1818) Green. J. A. N. S., I. 356.—(1838) Holb. Herp. III. 13, pl. 27 ; —(1842) 2d ed. V. 43, Pl. 11.—(1840) Storer Mass. Rept. 245.—(1842) Dekay N. Y. Rept. 75, Pl. 16, f. 38.

N. B. Green quotes this species from Raf., whose description I cannot find.

HAB. Northern New York, Carlisle, West Pennsylvania, Baird. Massachusetts, Storer. Lake Superior, Agassiz.

Gen. DESMOGNATHUS, *Baird*.

D. NIGER, *Bd.* Sept. 1818.

Sal. n., (Sept. 1818) Green. J. A. N. S., I. 352.

Triton n. (1842) Holb. Herp. V. 81, Pl. 27.

N. B. The only specimen seen is one in the collection of the Academy of Natural Sciences, Philadelphia, perhaps Dr. Green's original specimen.

D. FUSCUS, *Bd.* (March, 1820.)

Triturus f., (March 1, 1820) Raf. Annals of Nature.

Sal. intermixta, (Aug. 1825) Green. Hall's Portfolio, Vol. 20, p. 159.—(Jan. 1827) Green, Cont. Mac. Lyc. No. 1, Vol. I.

Sal. picta, (Nov. 1825) Harlan. J. A. N. S., V. 136.—(1840) Storer Mass. Rept. 251.

Sal. quadramaculata, (1842.) Hol. Herp. 2d ed. V. 49, Pl. 13.

HAB. Northern New York; Carlisle, Pennsylvania; West Pennsylvania. Baird.

D. AURICULATUS, *Bd.* (1838.)

Sal. a. (1838) Hol. Herp. 1st ed. III. 115, Pl. 28 :—(1842) 2d ed. V. 47, Pl. 12.

HAB. Liberty County, Georgia.

Gen. HEMIDACTYLIUM, *Tsch.* (1838) Class. der Bat.

H. SCUTATUM, *Tsch.* 1837.

Sal. scutata, (1837) Schlegel. Abb. neuer Amph. Pl. 40, f. 4, 5, 6.—Fn. Japonica.

?*Sal. fusca*, (Sept. 1818) Green. J. A. N. S., I. 357.

Sal. melanosticta, (Sept. 1844) Gibbes. Pr. B. N. H. Soc. I. 195,—(1845) Journal B. N. H. Soc. V. 89, pl. 10.

H. s., *Tschudi.* 1838. Class. der Bat.

HAB. Nashville, Troost. Charleston, Gibbes. Washington, D. C., Carlisle, Pennsylvania, Baird. New York City, Le Conte. Meadville, Pennsylvania, Baird.

Section C.

Gen. OEDIPUS, *Tsch.* (1838.) Class. der Bat.

O. PLATYDACTYLUS.

Sal. pl. () “Cuv. Mem. du Mus.”

O. p. *Tsch.* (1838) Class. der Bat.

HAB. Xalapa.

Gen. PSEUDOTRITON, *Tsch.* (1838) = *Mycetoglossus*, Bibron. fide Bon. Fn. Italica.

P. RUBER, *Tsch.* (1803.)

Sal. rubra, (1803) Daud. Hist. Rept. VIII. 227, Pl. 97, f. 2.—(1842) Holb. Herp. 2d ed. V. 35, Pl. 9.—(1842) Dekay N. Y. Rept. 80, Pl. 17, f. 43.

Sal. rubriventris, (Sept. 1818) Green. J. A. N. S., I. 353, (ad. living?)

Sal. maculata, (Sept. 1818) Green. J. A. N. S., I. 350, (bleached in spirits?)

Sal. subfusca, (Sept. 1818) Green. J. A. N. S., I. 351, (ad. in spirits?)

Pseudotriton subfuscus, (1838) *Tsch.* Class.

Mycetoglossus ruber. Bibron fide Bon. Fn. italica.

Siren operculata, (1796) Pal. de Beauv. Am. Phil. Trans. iv. 279, Pl. f. 3, (larva.)

Proteus neocaesariensis, (Sept. 1818) Green. J. A. N. S., I. 358, (larva bleached in spirits.)

HAB. Massachusetts, Storer. New York, Dekay. All Pennsylvania, Baird.

P. MONTANUS, *Bd.* Sept. 1849.

P. m., Baird. J. A. N. S., New Series, I. p,

HAB. South Mountain, near Carlisle, Pennsylvania.

P. SALMONEUS, *Bd.* 1838.

Sal. salmonea, (1838) Storer in Hol. Herp. 1st ed. III. Pl. 22—(1842) Hol. Herp. 2d ed. V. 33, Pl. 8.—(1840) Storer Mass. Rep. 248.—Dekay N. Y. Rept. 76, Pl. 16, f. 39.

HAB. Massachusetts, Vermont; Storer. Northern New York, Carlisle, Pennsylvania, Western Pennsylvania; Baird.

This species will very probably turn out to be the same with *Salamandra porphyritica* of Green.

Gen. SPELERPES, *Raf.* (1832) = *Cylindrosoma*, Tsch. 1838.

S. LONGICAUDA, *Bd.* Sept. 1818.

Sal. l., (Sept. 1818) Green. J. A. N. S., I. 351.—(1838) Hol. Herp. 1st ed. III. 111, Pl. 26; (1842) 2d ed. V. 61, Pl. 19.—(1842) Dekay N. Y. Rept. 78, Pl. 17, f. 41.

Spelerpes lucifuga, (1832) Raf. Atlantic Journal, No. 1, p. 22.

Cylindrosoma longicauda, (1838) Tsch. Class. der Bat.

HAB. New York; Dekay. All Pennsylvania; Baird. Kentucky, Raf.

S. GUTTCLINEATA, *Bd.* 1838.

Sal. g., (1838) Hol. Herp. 1st ed. II. 61, pl. 12; (1842) 2d ed. V. 29; Pl. 7.

HAB. Mountains of Carolina; Hol.

S. BILINEATA, *Bd.* Sept. 1818.

Sal. b., (Sept. 1818) Green. J. A. N. S., I. 352.—(1838) Hol. Herp. 1st ed. II. 127, Pl. 29; 2d ed. (1842) V. 55, Pl. 16.

Sal. flavissima, (Feb. 1826) Harl. Sill. Jour. X. p. 286.

HAB. Northern New York; Pennsylvania, East and West; Georgia; Baird.

S. CIRRIGERA, *Bd.* March, 1831.

Sal. c., (March 1831) Green. J. A. N. S., VI. 253.—(1842) Hol. Herp. 2d ed. V. 53, Pl. 15.

HAB. Near New Orleans, Green.

Gen. BATRACHOSEPS, *C. Bonap.* (1841.) Fn. Italica.

B. QUADRIDIGITATA, *Bd.* 1842.

Sal. q., (1842) Hol. Herp. 2d ed. V. 65, Pl. 21.

HAB. Georgia; Hol. Baird.

B. ATTENUATA, Bon. 1833.*Sal. a.*, (1833) Eschscholtz. Zool. At. Pt. V. Pl. 21, figs. 1-14.*B. a.*, (1841) Bon. Fauna Italica, Vol. II.

HAB. San Francisco, Esch.

The following species are only known to the author by their descriptions. Some of them are quite doubtful, those most so are preceded by a note of interrogation. The first four probably belong to, or near, *Ambystoma*.

SALAMANDRA TALPOIDEA, Hol. 1838.*S. t.*, (1838) Hol. Herp. 1st ed. III. 117, Pl. 29; 2d ed. (1842) V. 73, Pl. 24.

HAB. Sea islands of Georgia, Hol.

SALAMANDRA PORPHYRITICA, Green. 1827.*S. p.*, (Jan. 1827) Green. Cont. Mac. Lyc. Vol. I. pt. 1; Pl. f. 2.—(1842) Hol. Herp. 2d ed. V. 83, Pl. 28.

HAB. Meadville, Pennsylvania; Green.

SALAMANDRA INGENS, Green. 1831.*S. i.*, (March 1831) Green. J. A. N. S., VI. 254.—(1842) Hol. Herp. 2d ed. V. 85, pl. 29.

HAB. New Orleans, Green.

TRITON ENSATUS, Eschsch. 1833.*T. e.*, (1833) Eschscholtz. Zool. At. Pt. V. Pl. 22, figs. 1-12.

HAB. San Francisco, California, Esch.

SALAMANDRA GRANULATA, Dekay. 1842.*S. g.*, (1842) Dekay. N. Y. Rept. 78, Pl. 23, f. 66.—(1842) Hol. Herp. 2d ed.

HAB. Essex County, New York, Dekay.

?SALAMANDRA COCCINEA, Dekay. 1842. An. *N. miniatus*, Raf.*S. c.*, (1842) Dekay. N. Y. Rept. 81, Pl. 21, f. 54.

HAB. Hamilton County, New York.

SALAMANDRA TERETICAUDA, Eschsch. 1833.*S. t.*, (1833) Eschscholtz. Zool. Atlas, Pt. V. p. 14.

HAB. San Francisco, California, Esch.

"SALAMANDRA OCELLATUS, Fitz."*S. c.*, Fitzinger, as quoted in Fitz. neue Class. Rept. (1825).**"SALAMANDRA SIMILIS, Fitz."***S. s.*, Fitz. Same as last.

SALAMANDRA BEECHEYI, *Gray*. 1839.

S. b., (1839) *Zool. of Blossom*, Pl. 31, fig. 3. Catalogued in Griffith's Cuvier.

SALAMANDRA GREENI, *Gray*.

S. g., *Gray*. Catalogued in *Griff. Cuv.*, probably only a catalogue name.

SALAMANDRA SINCIPUT ALBIDA, *Green*. 1818.

S. s., (Sept. 1818.) *Green*. *J. A. N. S.*, I. 352.

?SALAMANDRA PUNCTATISSIMA, *Wood*. 1825.

S. p., (March 1825) *Wood*. *J. A. N. S.*, IV. 306.

HAB. Locality unknown. Probably European.

SALAMANDRA AGILIS, *Sager*. 1839.

S. a., (July 1839) *Sager*. *Sill. Jour.* XXXVI. p. 322.

HAB. Detroit, Michigan, *Sager*.

TRITURUS HYPOXANTHUS, *Raf*. 1820.

T. h., (1820) *Raf*. *Annals of Nature*, No. 20,

HAB. Kentucky, *Raf*.

TRITURUS NEBULOSUS, *Raf*. 1820.

T. n., (1820) *Raf*. *Annals of Nature*, No. 23.

HAB. Long Island, *Raf*.

?TRITURUS LUTESCENS, *Raf*. 1832.

T. l., (1832) *Raf*. *Atlantic Jour.* No. 3, p. 121.

HAB. Kentucky, *Raf*.

?SAL. LURIDA, *Raf*. 1832.

S. l., (1832) *Raf*. *Atlantic Jour.* No. 2, p. 63.

HAB. Cumberland County, Kentucky, *Raf*.

PSEUDOTRITON NIGRA, *Tsch*.

P. n., *Tschudi*. *Class. der Bat.* Quoted from *Mus. Lug*.

GROUP II. TREMADOTERA, Dum. et Bib.

Branchial apertures persistent.

α. Branchiæ caducous.

Gen. MENOPOMA, *Harlan*. (1825) = *Abranchus*, *Harl.*, 1825. = *Salamandrops*,
Wagler, () = *Eurycea*, *Raf.* (1832).

MENOPOMA ALLEGHANIENSIS, *Harl.* 1803.

Salamandra alleghaniensis, (1803) *Daud*. *Hist. Rept.* Vol. 8, p. 231.

Salamandre des monts alleghanis, (1802) Sonnini et Latreille, Suites a Buffon II. 253.

Leverian Water Newt, (1802) Shaw. Gen. Zool. Amph. p. 363.

Cryptobranchus salamandroides*, (1821) Leukart. Isis, 1821, p. 257. (Shaw and Leukart describe the same specimen.)

Abranchus a.*, (1825) Harlan. An. N. Y. Lyc., I. 221.

Menopoma a.*, (1825) Harlan. An. N. Y. Lyc., I. 270.—1842, Hol. Herp. 2d ed. V.—(1842) Dekay N. Y. Rept. 89, pl. 18, f. 44.

Eurycea mucronata*, (1832) Raf. Atlantic Jour. No. 3, 121.

Cryptobranchus a., (1838) Van der Hoeven. Tydsch. van Nat. Gesch. Pl. f. 3, 4, (Scull.)

HAB. Tributaries of Ohio river, not of the Great Lakes. Susquehanna river, below Columbia, Pennsylvania.

M. FUSCA, *Holb.* 1842.

M. f., (1842) Hol. Herp. 2d ed. V. 99, Pl. 33.

HAB. Western part of South Carolina, Hol.

Gen. AMPHIUMA, *Garden.* (1821) Corr. with Linnæus. *Chrysodonta*, Mitch. (1822.)

A. MEANS, *L.* 1821.

A. m., *L.* (1821)—(1842) Hol. Herp. 2d ed. V. 89, Pl. 30.—(1823) Harlan. J. A. N. S., III. 55, (Anatomy.)

A. didactylum, (1828) Cuv. "Mem. du Mus. XIV. p. 4, figs. 1, 2, 3."—(1833) Wagler. Desc. et icon Amph. Pl. 19, fig. 1.

Chrysodonta larvaeformis*, (1822) Mitch. "Med. Recorder, No. 19, July 1822."

HAB. Southern States.

A. TRIDACTYLUM, *Cuv.* 1828.

A. t., (1828) Cuv. "Mem. du Mus. 14, " (1833) Wagler. Desc. et icon Amph. Pl. 19, f. 2.—1842, Hol. Herp. 2d ed. V. 93, Pl. 31.

HAB. South Western States.

. Branchiæ persistent.

Gen. NECTURUS, *Raf.* 1819. = *Sirena* *Raf.* 1818. = *Menobranchus*, *Harl.* 1825. *Phanerabronchus*, *Fitz.* (1826).

N. LATERALIS. 1823

Triton l., (1823) Say. Long's exped. I. p. 5.

Sirena maculosa, (Nov. 1818) *Raf.* Am. Monthly Mag. IV. 41.

Necturus maculatus* (June 1819) Raf. in de Blainville Jour. de Phys. 88, p. 417,

N. maculosus, luteus, fuscus, (March 1820) Raf. Annals of Nature.

Menobranchnus lateralis*, (1825) Harl. An. N. Y. Lyc., I. 221; —(1838) Hol. Herp. 1st ed. III. 119, Pl. 30; —(1842) 2d ed. V. 115, Pl. 38; —(1842) Dekay N. Y. Rept. 87, Pl. 18, f. 48.

Protee tetradactyle, (1807) Lac. Ann. du Mus. 10, p. 330, Pl. 17.

Phanerobranchnus cepedii, (1826) Fitz. Neue Class. Rept. (a prior description.)

HAB. Lake Erie, Ohio and Alleghany Rivers, Baird.

N. MACULATUS, *Bd.* 1827.

Proteus m., (Oct. 1827) Barnes. Sill. Jour. XIII. p. 68.

Menobranchnus m., (1842) Hol. Herp. 2d ed. V. 111. Pl. 37.

HAB. Lake Champlain, Baird.

N. ———, *Gibbes*. This species recently found in Santee river, S. C., by Dr. Lewis R. Gibbes of Charleston, has not yet been published by its discoverer.

Gen. SIREN, *L.* (1769) "Amoen. Acad."

S. LACERTINA, (1769) *L.* "Amoen. Acad. VII. 311."—(1811) Cuv. Rept. dout. 98, Pl. 2. f. 1-7.—() Cuv. "Oss. foss. V. 2, Pl. 27, f. 1."—(1842) Hol. Herp. V. 101, Pl. 24.

HAB. Southern States.

S. INTERMEDIA, *Leconte.* 1828.

S. i., (1828) Ann. N. Y. Lyc. II. 133. (Read Aug. 21, 1826.)—(1837) Rusconi. Obs. sur la Sirene, &c., Pl. 6.—(1842) Hol. Herp. 2d ed. V. 107, Pl. 37.

Pseudobranchnus i., Gray.

HAB. Southern States.

S. STRIATA, *Leconte.* 1824.

S. s., (1824) Leconte. Ann. N. Y. Lyc. I., 52, Pl. 4;—1842, Hol. Herp. 2d ed. V. 109, Pl. 36.

Pseudobranchnus s., Gray.

HAB. Southern States.

Gen. SIREDON, *Wagler.* 1830.

S. MEXICANUS, *Shaw.* 1800?

Gyrinus m., (1800?) Shaw and Nodder Nat. Misc. pl. 342, 343.

Siren pisciformis, (1802) Shaw. Gen. Zool. Amph. p. 612.

Siredon axolotl, (1833) Wagler. Icones Amph. Pl. 20.

Axolotl (1811) Cuv. Rept. dout. in Humb. Obs. Zool. 104, Pl. 14.

Hypocthon pisciformis, (1829) Gravenhorst. Del. Mus. Vratislav. p. 89.

Acholotes guttatus, (July 1844) R. Owen. Ann. and Mag. Nat. Hist. XIV. p. 23.

HAB. Lakes near City of Mexico, Baird.

S. MACULATUS, *Bd.* 1844.

Acholotes m., (July 1844) R. Owen. Ann. and Mag. Nat. Hist. 14, p. 23.

HAB. Rio Grande, Owen.

It is only because there is no positive proof to the contrary, that I retain the genus *Siredon* as real, placing it at the bottom of the series. It so much resembles the larva of *Ambystoma punctata*, in both external form and internal structure, that I cannot but believe it to be the larva of some gigantic species of this genus. It differs from all known perennibranchiates in possessing the larval character of the gular or opercular flap, this being unattached to the subjacent integument and free to the extremity of the chin. The non-discovery of the adult is no argument against its existence; I had caught hundreds of the very remarkable larva of *Pseudotriton salmoneus* near Carlisle before I found an adult. Until then I knew not where to refer the animal, supposing this species to exist no nearer to me than the mountains of northern New York and Vermont.

Descriptions of four new species of North American Salamanders, and one new species of Scink.

AMBYSTOMA MACRODACTYLA, *Baird.* Skull longer than broad. Toes long, unwebbed. A broad dorsal reddish brown stripe. Beneath dark brown, unspotted.

Specimens in the Academy of Natural Sciences of Philadelphia. Brought from Astoria, Oregon, by J. K. Townsend, M. D.

Body rather more slender than in the other species of *Ambystoma*; the proportions nearly those of *Desmognathus fuscus*, (Raf.) The colors somewhat like those of a badly preserved *Plethodon erythronotus*, (Green.) Ground color dark brown. A broad dorsal stripe, originally, it is probable, of a chestnut brown color, now very obscure. Sides sprinkled with greyish. The brown of the sides becomes more concentrated towards the vertebral line. Tail sub-round, not compressed. Largest specimen about $2\frac{3}{4}$ inches. From the snout to the insertion of the hind legs $1\frac{1}{2}$ inches.

AMBYSTOMA MAVORTIA, *Baird.* Skull broader than long. Toes short and broad.

Tail much compressed. Color dark brown, with several large yellowish blotches beneath, and transverse bands of the same on sides of body and tail.

One specimen procured in New Mexico by Dr. Wislizenus while attached to Col. Doniphan's expedition.

Body thick and clumsy, more so than in *Ambystoma punctata*. Feet short; toes broad. Tail slightly ensiform; longer than the head and body.

General color (as preserved in spirits) a dull black or dark brown, with two or three yellowish blotches occupying the greater part of the belly. About nine broad transverse bands of yellowish on the sides of the body, confluent to a certain extent with that on the belly. Similar markings on the tail, forming nearly complete ellipses, and about twelve in number. The back is not crossed by the yellowish, but is rather darker than the ground color. The interspaces of the transverse yellowish markings are confluent with the dark brown on the back. Extremities blotched like the body. Total length eight inches.

This species comes nearest to *Triton ensatus*, Esch., it differs from it in color, and in the arrangement of the palatine teeth.

AMBYSTOMA EPISCOPUS, Baird. Head wedge shaped. Skull longer than broad. Tail much compressed, shorter than the body. Body yellowish with dark mottlings and darker spots.

One specimen sent by Clinton Lloyd, Esq., from Kemper County, Mississippi.

Proportions of body nearly those of *Ambystoma opaca*, Grav. The specimen much corrugated, and its colors obscured by alcohol. The general color appears to have been a shade of yellowish over the whole body, obscured on the back by very minute dusky mottlings. This mottling less evident on the feet and tail; abdomen and tail beneath almost entirely free from it. Head, back, and sides of the tail with numerous spots of a darker mottling than that just described. These are sub-circular distributed rather uniformly on the head and body; they are larger, and more irregular on the sides of the tail; their average size is that of the iris. On the sides, between the fore and hind legs, the dark mottling is concentrated into an obscure broad dark band. Length about five inches.

PSEUDOTRITON MONTANUS, Baird. Similar to *P. ruber*, (Daud.) Tail as long as the body. Iris dark, without the longitudinal bar.

Two specimens obtained in the South Mountain, near Carlisle, Pennsylvania.

Ground color of all the upper parts reddish brown, with sparse circular spots of well defined black or dark brown. Beneath deep salmon color: spots few on the sides and the outside of the limbs.

Iris dark chestnut brown almost black, with faint mottlings of bronze on the inner border, and without the dark bar of *P. ruber*. In this latter species the iris is brassy yellow with a dark longitudinal bar.

Proportions of body most like those of *P. salmonea*, (Storer) The insertion of the hind legs is just half way between the snout and tip of tail. In *P. ruber* it is considerably nearer the tail, which thus becomes shorter than the head and body. The crown of the head is more elevated, and the occiput more convex in *P. montanus* than in *P. ruber*, the skull also is more elongated.

The spots on *P. ruber* are more numerous, and generally not so well defined. When also the ground color in *P. ruber* is darker than the usual rich salmon color, the spots are very much crowded, indistinct, and confluent with the ground tint.

Costal furrows in *P. montanus* 17; but 16 in *P. ruber*.

Of the two specimens obtained, one was six inches long, the other three. The latter was even more characteristically marked than the former. Both were described when living.

PLESTIODON ANTHRACINUS, Baird. Size between *Lygosoma lateralis* and *Plestiodon fasciatus*, without any indication of a vertebral line. Four narrow longitudinal yellow lines, and on each side a broad stripe of anthracite black.

Upper parts dark bronze; each scale has a faint border of this color, with a central cloud of the same. Small blotches on the plates of the head. The lateral band of black begins at the nostril in a sharp point, passes back including the eyelids and widening to the ear; after this it continues parallel to beyond the vent, when it tapers to the end of the tail. The tint of the black is that of highly polished anthracite coal. On each side of this lateral anthracite band is a narrow stripe of pale yellow, the upper passing through the middle of one row of scales, the lower including the contiguous edges of the rows. The remainder of the row of scales above the upper yellow stripe is also anthracite, with which color the sides immediately below the lower stripe are also tinged. Beneath yellowish white. Under the microscope each lower scale exhibits a finely dotted reticulation. Tail dark blue above, beneath lighter. Outside of legs and feet black like the sides, inside lighter. Iris black.

In a single very old specimen the whole head to behind fore legs was tinged with the red color found in almost all of the *Plestiodontes*.

Measurements of a specimen of medium size. Total length $5\frac{1}{4}$ inches; tail from vent $3\frac{1}{4}$; head to ear $\frac{3}{8}$; breadth of head $\frac{1}{4}$; greatest breadth of dorsal band $\frac{3}{16}$; of lateral band $\frac{1}{8}$.

Found quite abundantly about old logs, in the North Mountain near Carlisle, Pennsylvania. More plentiful than either *Plestiodon fasciatus*, or *P. quinquelineatus*.