

PROCEEDINGS
OF THE
UNITED STATES NATIONAL MUSEUM.
1879.

NOTES ON THE NESTS AND EGGS OF THE EIGHT NORTH AMERICAN
SPECIES OF EMPIDONACES.

By T. M. BREWER.

In the following paper are given the measurements of all the eggs of the eight species of *Empidonax* that are in the collections of the Smithsonian Institution, and also those in my own, and also a few others. Three of these species, *E. minimus*, *obscurus*, and *hammondi*, so far as is known, have eggs that are uniformly of an unspotted white. If ever spotted, they are so very rarely and so very slightly as hardly to constitute really an exception. In another species, *flaviventris*, of which, so far as I am aware, only five or six well-identified sets have been secured, at least two well-identified sets have been taken that are entirely of an unspotted white color, the others being all more or less spotted and marked. All the remaining four species, *traillii*, *acadiensis*, *pusillus*, and *difficilis*, have eggs strongly marked, though, among them all, eggs are occasionally found that are of an unspotted white, or marked with very minute spottings. In the following brief mention I chiefly confine myself to the size of each egg, its locality, and the authority for its identification, if the record has been preserved.

Empidonax hammondi, Baird.

Four eggs in Museum of Comparative Zoölogy, Cambridge (No. 1681), from Blue River, Colo., Edwin Carter, measure .62 x .52; .60 x .54; .62 x .52; .64 x .53, averaging about .62 x .53.*

T. M. B.'s cabinet No. 1921. Anderson River. MacFarlane. .67 x .52; .68 x .51.

The first set is smaller and more rounded than average eggs of *E. minimus*, but they are otherwise indistinguishable. None are spotted.

Empidonax obscurus, Baird.

Smithsonian No. 15875. Utah. Ridgway. .71 x .55. Ground-color an immaculate dead white.

Smithsonian No. 13592. Austin, Nev. Ridgway. .72 x .55; .74 x .55.

Smithsonian No. 2335. Dodge Valley, Utah. McCarty. .70 x .55; .72 x .54.

* I am indebted for these measurements to Mr. J. A. Allen.

T. M. B. No. 999. Arizona. Dr. Palmer. .76 x .58; .77 x .54.

T. M. B. No. 1760. Utah. Ridgway. .75 x .58; .70 x .54.

Greatest length .77, least .70; greatest breadth .58, least .54. General average of all the examples .73 x .55.

Empidonax difficilis, Baird.

Smithsonian No. 17593. San Francisco, Cal. Samuel Hubbard. .70 x .52; .65 x .50; .68 x .50; average .68 x .51. The ground-color of these three examples is a creamy white, almost a dead white, and they are chiefly spotted around the larger end with markings of a brownish red and a few faint spots of lavender. The color of the markings of this set has no resemblance whatever to those of 13440 (*E. flaviventris*) when carefully compared.

T. M. B. No. 665. Monterey, Cal. Dr. Canfield. .76 x .59; .74 x .59. Spotted with light-brown markings, on a creamy ground, the markings being exclusively around the larger end.

T. M. B. No. 2960. Santa Cruz, Cal. William A. Cooper. The female parent was shot by Mr. Cooper, and was sent to Washington for identification. The nest was in a hollow in a bank, covered with roots and bushes. Incubation just begun, May 4, 1878. .69 x .50; .69 x .51; .70 x .52; .69 x .52. These four eggs, as indeed nearly all of the eggs of this species that I have ever seen, are conspicuously marked with vivid light reddish-brown spots. In three of this set they are chiefly on the larger end; in one the markings are distributed over the whole egg. Ground-color a creamy white.

T. M. B. No. 2959. Nicasio, Marin County, Cal. C. A. Allen. The female parent was shot by Mr. Allen and identified by Mr. Ridgway. .70 x .53; .70 x .54; .65 x .54; .70 x .55. Marked with large bright reddish-brown spots, chiefly about the larger end. This nest was also built in a cavity.

T. M. B. No. 2728. Santa Cruz, Cal. Geo. H. Ready. Sent me as *E. pusillus*, but evidently a wrong identification. The nest was on a horizontal sycamore limb, ten feet from the ground. .68 x .55; .70 x .57; .70 x .57; .68 x .58.

T. M. B. No. 2890. Haywood, Cal. Dr. J. G. Cooper. May 25, 1877. .70 x .55; .70 x .55; .66 x .55; .68 x .52. The last-mentioned egg is of a very nearly unspotted white.

T. M. B. No. 3053. Santa Cruz, Cal. Geo. H. Ready. April 22, 1877. Nest on the lower limb, at the extremity, of a sycamore, ten feet above the ground. .66 x .52; .65 x .53; .67 x .53. These eggs are, with hardly a doubt, those of *E. difficilis*, though mistaken by Mr. R. for *pusillus*. Their ground-color is pure creamy white. The spots are few, small, and of a more than usually faint brown, disposed in rings around the larger end, the residue of the egg being unspotted.

In 24 examples, the greatest length is .76, least .65, average .69; greatest breadth .59, least .50, average .54.

Empidonax pusillus, Cabanis.

Smithsonian No. 16305. Snake River. Merriam. .76 x .52; .75 x .50.

Smithsonian No. 15210. Parley's Park, Utah. Robt. Ridgway. .77 x .55; .76 x .55; .78 x .57.

Smithsonian No. 15207. From the same. .64 x .49; .70 x .51; .64 x .52.

Smithsonian No. 12982. Sacramento, Cal. Ridgway. .70 x .52; .74 x .55; .70 x .54; .70 x .52.

Smithsonian No. 8543. Vancouver Island. Hepburn. .74 x .55.

T. M. B. No. 960. Northern California. Hepburn. .72 x .58; .73 x .58; .73 x .59.

T. M. B. No. 2119. Lake Koskonong, Wis. Thure Kumlien. Both parents secured. .68 x .52; .71 x .54.

By the kindness of Mr. H. W. Henshaw I am enabled to give the measurements of two sets of eggs taken by him near Honey Lake, Cal., in the summer of 1878, June 25. The first set of three eggs has an unusually pinkish tinge to the cream-colored ground, and around the larger end is a beautiful wreath of markings of a light lilac-brown blending with others of reddish brown. These eggs measure .75 x .55; .74 x .58; .78 x .59.

The other set of four eggs have a nearly pure white ground, and are marked around the wider portion of the egg with small red-brown and a few lilac-brown spottings of a rounded shape. The rest of each egg, including the larger end, has an unspotted surface. One egg has only a very few very fine dottings, and is very nearly pure white. Their measurements are .69 x .55; .68 x .54; .70 x .55; .71 x .58.

All the eggs of this species have a certain family resemblance, which it is easy to recognize at sight, but very difficult to describe distinguishingly. They are all more or less marked with small, rounded spots, rarely blotched, and the markings are, some of them, much more minute than is usual in any other species. The spots are also scattered more about the entire egg, or, if confined, are chiefly on the larger portion of the circumference, and never, or certainly rarely, confluent.

Mr. Henshaw informs me that he has examined at least twenty-five nests of this species (*pusillus*), and that with only one exception they have all been built in willows. The nest before me, taken by Mr. H. near Honey Lake, June 25, 1877, is a well-woven structure, made of thin strips of the inner bark of deciduous trees, broken bits of dry grasses, lichens, &c., and is lined with fine grasses and hair. It is pyramidal in shape, tapering to a point at the base, and is $4\frac{1}{2}$ in external height and $3\frac{1}{4}$ in external breadth. The cavity is two inches deep. It contained the set of four eggs referred to above.

The exception referred to by Mr. Henshaw was a nearly completed nest of this species, found June 17, that was placed in a crotch of a swinging grape-vine. Its structure is said to have been unusually neat and firm for a Flycatcher's. (Wheeler's Report, 1876, p. 255.)

Empidonax traillii, Baird.

Smithsonian No. 4036. East Bethel, Vt. C. Paine. .74 x .52; .74 x .52; .70 x .53; .73 x .52.

Smithsonian No. 7330. Fort Resolution. Lockhart. .80 x .57; .75 x .55; .73 x .55; .72 x .55.

Smithsonian No. 8859. The same. .80 x .55; .80 x .55.

Smithsonian No. 4052. Three Rivers, Canada. Reikoff. .79 x .57.

Smithsonian No. 4395. Great Slave Lake. Lockhart. .79 x .57; .74 x .55.

Smithsonian No. 1229. Williamstown, Mass. Hopkins. .70 x .53; .70 x .55; .72 x .54.

Smithsonian No. 1819. Winnebago, Ill. .70 x .55; .68 x .55. This set is an almost unspotted white.

T. M. B. No. 412. Gorham, N. H. T. M. B. .73 x .49.

T. M. B. No. 413. E. Bethel, Vt. Paine. .76 x .50; .72 x .49.

T. M. B. No. 438. Coventry, Vt. Knight. .70 x .52.

T. M. B. No. 1978. Catskill Mountains, N. Y. Dr. James C. Merrill. .72 x .53; .70 x .52. One of these is very nearly an unspotted white.

T. M. B. No. 1006. Coventry, Vt. .75 x .57.

T. M. B. No. 2632. Milan, N. H. Welch. .79 x .60; .79 x .60.

T. M. B. No. 3054. Randolph, Vt. Prince. .75 x .58; .72 x .55; .73 x .57.

Empidonax flaviventris, Baird.

Smithsonian No. 13219. Halifax, N. S. Downes. Received with parent. .74 x .53. Of a uniform dead chalky white. The other eggs of this set measured .73 x .55 and .75 x .54.

Smithsonian No. 13440. St. Stephen, N. B. Geo. A. Boardman. Parent secured and identification perfect. The nest is small; had been built in a low bush; its breadth internally is 1.90 inches, depth 1.25; external diameter 3 inches, depth 1.75. It is constructed of flax-like fibres, fine shreds of the inner bark of deciduous trees, a few fine grasses mingled with feathers, and lined with horse-hair, downy feathers, and fine grasses. The eggs measure .75 x .54; .75 x .53; .76 x .55. Their original number was four. They have a ground-color of a pure white, with blotch-like spots on the larger end, of purplish drab and umber-brown, mixed with scattered black markings, but without a tinge of red, and are unlike any other eggs of this genus that I have ever seen.

T. M. B. No. 416. Centre Harbor, N. H. T. M. B. .70 x .56; .74 x .58; .67 x .55. One of these unspotted; two of them marked with small spots of purple drab.

T. M. B. No. 418. Halifax, N. S. Downes. .69 x .55. This egg and the two others in this set were of a nearly pure chalky white, with a few faint spots, so slight as, at first, to be overlooked. The parent secured and sent with the eggs. I exclude from this list the set secured by me in Grand Menan, referred to below, as, although the identifica-

tion was apparently satisfactory, it was not placed beyond doubt by securing the parent. The eggs averaged .68 x .53. Neither in size, shape, nor in the shade of ground-color, did they at all resemble any fresh eggs of *E. minimus* that I have ever seen.

In these ten specimens, the greatest length is .76, the least .67, average .73; the greatest breadth is .58, the least .53, average .55.

Since the above was written, my friend Mr. Wm. A. Jeffries has procured for me, through the courtesy of Mr. Deane, the measurements of the four eggs procured by the latter in Maine, and described by Mr. Purdie. These measure .70 x .55; .70 x .55; .65 x .52; .70 x .55, and reduce the average to .72 x .55. The eggs are described by Mr. Jeffries as of pure white ground, with markings in two eggs of fine dots; in the others, small irregular blotches, of a light red-brown, not so deep or so bright as in *difficilis*; mingled with these are a few markings of lilac. The ground-color appears to have lost the rosy tint mentioned by Mr. P. in the first description, in which, too, no mention is made of the lilac-colored spots.

Through the kindness of Mr. Osborne I have also been enabled to examine one of the eggs contained in the nest of this species found by him in Grand Menan. It measures .70 x .56, and agrees exactly with the description given by him, except that there is a slight roseate tinge in the white ground. The spots are a light reddish brown, and the egg is undistinguishable from several eggs in my collection of *E. difficilis*. It is very different from the eggs identified by Mr. Boardman.

Mr. Osborne writes me that none of this set differ more than $\frac{2}{100}$ in their measurements, and that in their color the only points in which any differ from the one described are the lighter shade of the ground-color and the larger size of the blotches.

Empidonax acadicus, Baird.

Smithsonian No. 10039. Maryland. Slack. .77 x .57.

Smithsonian No. 3430. Marion County, W. Va. Morgan. .67 x .57; .68 x .52; .68 x .55; .75 x .53; .74 x .56; .70 x .56; .67 x .57; .68 x .52; .68 x .55; .75 x .53; .74 x .56; .70 x .56.

Smithsonian No. 2018. Philadelphia. Mellvaine. .76 x .58; .71 x .56.

Smithsonian No. 1959. Locality not given. .75 x .55; .72 x .57.

Smithsonian No. 2128. Northern Georgia. Dr. Gerhardt. .77 x .57; .77 x .59.

Smithsonian No. 13470. Locality not given. .76 x .55.

Smithsonian No. 17607. Washington, D. C. H. W. Henshaw. .74 x .54; .70 x .55; .72 x .55.

Smithsonian No. 1681. Halifax, Va. .82 x .55.

T. M. B. No. 2735. Staten Island, N. Y. S. D. Osborne. June 5, 1875. .81 x .60; (nearly unspotted) .80 x .59; .79 x .59.

T. M. B. No. 1010. Indiana. Geo. Welch. .78 x .58; .78 x .60; .77 x .59; .75 x .58.

In these 31 examples the greatest length is .82, the least .67, the mean

.74; the greatest breadth .60, least .52, average .56. The eggs of this species uniformly have a ground-color of a creamy white, or a deep cream-color, and when fresh have a slight roseate tinge. In a few instances the markings are almost, though never wholly, wanting. The eggs of this species so closely resemble those of *traillii* as to be indistinguishable; but they may be readily told from those of *pusillus*.

Empidonax minimus, Baird.

The ground-color of the eggs of this species, as a general rule, is a uniform unspotted white, a creamy white when fresh, fading into a dead white when long exposed to the light and air. In one set of two eggs, both examples are faintly marked with dark or blackish-brown spots. In all the other instances I have seen where eggs of this species seemed to be spotted, the markings have had rather the appearance of stains than genuine natural characters.

Smithsonian No. 3771. Lynn, Mass. Welch. .65 x .48; .66 x .50.

Smithsonian No. 12770. E. Windsor Hill, Conn. Dr. Wood. .64 x .48; .65 x .50; .64 x .50; .65 x .50.

Smithsonian No. 8715. The same. .66 x .51; .65 x .50; .67 x .50; .65 x .50; .66 x .53.

Smithsonian No. 16677. Pembina. D. Gunn. .67 x .49; .65 x .50; .66 x .48.

Smithsonian No. 10485. Fort Resolution. Lockhart. .63 x .47; .65 x .50; .65 x .48.

Smithsonian No. 8861. The same. .69 x .50; .69 x .49; .68 x .48.

Smithsonian No. 2193. Randolph, Vt. Paine. .67 x .52.

Smithsonian No. 15030. Racine, Wis. Dr. Hoy. .60 x .50; .61 x .51. Both of these examples are slightly spotted with a very dark or blackish brown.

Smithsonian No. 6212. Fort Resolution. Lockhart. .70 x .52; .65 x .51; .63 x .52; .67 x .52; .67 x .52.

Smithsonian No. —. Pembina. D. Gunn. .60 x .52; .65 x .51; .63 x .52; .64 x .50.

Smithsonian No. 14562. Lynn. Welch. .62 x .50; .64 x .51; .65 x .49; .65 x .49.

Smithsonian No. 1854. The same. .62 x .52; .65 x .52; .60 x .52.

Smithsonian No. 2985. Sing Sing, N. Y. .64 x .52.

Smithsonian No. 13447. Calais, Me. Boardman. .64 x .52; .65 x .49; .64 x .51; .65 x .48.

Smithsonian No. 1973. Connecticut. Dr. Wood. .62 x .49; .70 x .50; .57 x .48.

Smithsonian No. 4097. Great Slave Lake. Lockhart. .63 x .51; .63 x .50; .65 x .50; .62 x .51.

T. M. B. No. 240. New Britain, Conn. Moore. .60 x .49; .62 x .52.

T. M. B. No. 1262. Lynn. Welch. .64 x .50; .66 x .50.

T. M. B. No. 226. The same. .66 x .52; .65 x .50; .64 x .50; .64 x .50.

T. M. B. No. 3055. E. Bethel, Vt. Prince. .63 x .49; .60 x .50; .59 x .50; .61 x .50; .61 x .50; .65 x .50.

In these 61 examples the extreme length, in two instances, is .70, the least .57, and the mean .64; extreme breadth .52, least .47, mean .50.

RECAPITULATION.

	Extreme length.	Least length.	Mean length.	Extreme breadth.	Least breadth.	Mean breadth.	No. of examples.
<i>Emp. hammondi</i> .....	.68	.60	.64	.54	.51	.52	6
<i>E. obscurus</i> .....	.77	.70	.73	.58	.54	.55	9
<i>E. difficilis</i> .....	.76	.65	.69	.59	.50	.54	24
<i>E. pusillus</i> .....	.78	.64	.72	.59	.49	.55	25
<i>E. trailli</i> .....	.80	.68	.74	.60	.49	.54	31
<i>E. flaviventris</i> .....	.76	.65	.72	.58	.52	.55	15
<i>E. acadicus</i> .....	.82	.67	.74	.60	.52	.56	31
<i>E. minimus</i> .....	.70	.57	.64	.52	.47	.50	61

Mr. S. D. Osborne (B. N. O. C. iii, 187) describes the nest and eggs found in a hummock of moss on the island of Grand Menan, the parent of which was procured, and was by him identified as *E. flaviventris*. "The cavity extended in about two inches, was about four inches in depth, and was lined with a very few fine grasses, black hair-like roots, and skins of berries. The eggs, four in number, are white, with a very delicate creamy tint, which differs in its intensity in the different specimens, and are spotted, mostly at the larger end, with a few dots and blotches of a light reddish shade."

Eight days later than Mr. Osborne's discovery, and in a different locality, Messrs. Deane and Purdie secured another nest and set of eggs, identified as of the same species, in Houlton, Me. This, too, was "in a ball of green moss." "The lining was mainly of fine black rootlets, with a few pine needles and grass stems." "The eggs, four in number, were perfectly fresh, rounded oval in shape, and of a beautiful rosy-white tint, well spotted with a light reddish shade of brown." (B. N. O. C. iii, 166.)

Mr. Osborne remarks that "there are several nests of this bird in different collections, the identities of most, if not all, of which are disputed"; and he adds, "the descriptions given by Baird, Brewer and Ridgway, agree very well with the nests of the Traill's Flycatcher," &c. The first clause is so vague as to make it doubtful to what nests he may refer. So far as I am aware, prior to 1878 only four or five nests of this bird had been procured, and of these three at least are as well and as completely identified as are those of either Mr. Osborne's or Mr. Purdie's. Their authenticity is as indisputable.

Mr. Purdie also assumes, "so great is the variation," "that there was some error of identification"; and finally refers the eggs to the Least Flycatcher, and cites Mr. Ridgway as authority. But Mr. Ridgway, on

the contrary, accepts them as genuine eggs of *flaviventris* in his recent report (p. 544), whatever may be their resemblance to those of *E. minima*; and he so accepts them still.* In fact, there is no more reason why we should reject the identification of these nests and eggs, than for our refusing to credit the statements of Messrs. Osborne, Purdie, and Deane. In either case the identification was complete, and the differences in the nest, if of any real moment, tell as much against the one as the other. Mr. Boardman's and Mr. Downes's birds were submitted to Prof. Baird, and have had his verification in addition.

In June, 1850, I met with a nest which I then had no doubt belonged to this species. It was in a low bush on Grand Menan, near the water. My nephew H. R. Storer, then a lad of sixteen, was with me. Both parents were seen, and the male was carefully observed through a good glass; the female, when first seen, was on the nest; a male, apparently its mate, was near by. Unfortunately, in the attempt to secure one of the parents, it was missed, and the birds became so wild that neither could be secured. We were obliged to leave the island and to take the nest without further identification, but we had no doubt as to the identity. The eggs were white, not cream-color, more oblong and larger than the average eggs of *E. minima*.

A few weeks later, the same year, I received, among other nests and eggs, collected near Halifax by Mr. Andrew Downes, two nests and two sets of eggs, with the parent of each, of *flaviventris*. The parents were sent to Prof. Baird, and by him identified as *E. flaviventris*. There were no notes as to the position of these nests; they were mere collections of broken grasses, and it is not improbable they had been built in hollow places. There was, at least, nothing to show to the contrary. Their authenticity there is no reason to question. The following summer a nest with three eggs and its parent were taken in Centre Harbor, two of the eggs being spotted. The same summer Mr. Boardman procured the nest, four eggs, and the parent bird referred to above as now in the Smithsonian collection. These eggs do not at all correspond, in the color of their markings, to the descriptions given of the sets found in 1878.

Entire reliance cannot be placed upon mere differences in the construction of nests to prove difference of species. However remarkable this may be, it is anything but conclusive. It will be seen that just the same differences are noted in the descriptions of the nesting of *E. difficilis*. While two are noted as built in holes in banks, corresponding with those of the recent examples of *flaviventris*, others were built near the extremities of sycamore limbs ten feet from the ground. Mr. J. A. Allen (B. N. O. C. iii, p. 25) speaks of the *E. acadicus* building a much ruder nest than *E. minimus*, and most probably the specimens before him justified his conclusions; but my experience would lead me to reverse their relative positions. In fact, both of these species vary greatly in their architecture, the Acadian most of all, and no one, but

* But see these Proceedings for 1878, p. 425, footnote.—R. R.

for his positive knowledge of their specific identity, could suppose that a certain flat platform-nest of one pair; the deeply-hollowed nest, with its remarkable border of *chevaux de fris*, of another; and, again, the beautiful pensile nest, like a Vireo's, of a third, were all nests of this same species *acadicus*.

The differences in the color of the eggs identified as those of *flaviventris* are, perhaps, more unusual and remarkable, certainly to their extent. Here are two well-identified sets, those from Halifax, of an unspotted white; another set, but slightly spotted; then Mr. Boardman's set, strongly marked, but very differently from the eggs belonging to the two most recently identified nests. The eggs of *hammondi* and *obscurus* are plain white, and no record exists of any spotted example of either. The same is almost equally true of *minusus*. In sixty-one eggs, only two are found with even faint spots; but this exception may show the possibility of there being more variations than we are now aware of. Among the eggs of *difficilis* a single specimen occurs of very nearly unspotted white. The same is true of one egg of *E. pusillus*. Among the eggs of *E. traillii* unspotted eggs are comparatively more common. Among my eggs of *E. acadicus* there is also one very nearly an unspotted white. So that these variations in nests and in color of eggs cannot be received as necessarily conclusive as against such positive identifications as those of Mr. Boardman's and Mr. Downes's examples.

If we take the product of the average length multiplied by its average breadth at the point of the largest diameter as a proximate test of the relative size of the eggs of each species, we find the following result:

<i>Acadicus</i>	4144
<i>Obscurus</i>	4015
<i>Traillii</i>	3996
<i>Flaviventris</i>	3960
<i>Pusillus</i>	3930
<i>Difficilis</i>	3726
<i>Hammondi</i>	3328
<i>Minusus</i>	3200

Since the above was in type, Mr. Charles A. Allen of Nicasio, California, has furnished me with some very interesting and apposite notes on the nidification of *Empidonax difficilis*, demonstrating the remarkable variations that may exist in regard to the position and structure of the nests of one and the same species of birds. After mentioning that he has taken and identified some forty or fifty nests of this species, he adds:

"I find *E. difficilis* breeding in all situations. Sometimes I find them on the curled root of a tree on the banks of a stream or brook, not over six inches above the water; again I find them in the jagged end of some half-submerged log in mid-stream; again within the loose bark of a tree, no matter what kind, nine or more feet up; again I find them in a

cavity in some decayed tree or limb, or in any kind of depression that gives a base to begin to work on. I also find them in out-houses, or buildings removed from dwellings, on the rafters, or on any spot where they can stick their nest. They are also very common under bridges, and I have found four built in the forks of small trees, some four or five feet up. These were all the same veritable *E. difficilis*."

A LIST OF EUROPEAN FISHES IN THE COLLECTION OF THE
UNITED STATES NATIONAL MUSEUM.

By TABLETON H. BEAN.

About 350 nominal species are mentioned. Since the list is intended simply to facilitate the exchanges between the United States National Museum and museums in Europe, no attempt has been made to distribute the names in accordance with the latest knowledge concerning the classification and specific identity of the species in question. The names given to them by those who presented them are, with few exceptions, retained.

One species (*Gasterosteus Blanchardi*, Sauvage), which was described from specimens sent to Paris from Boston, United States, is referred to *Gasterosteus pungitius*, Linn. (= *Pygosteus occidentalis*, (C. & V.) Brevort), with which it is identical.

The numbers at the left are those of the National Museum Catalogue; those at the right were attached to the fishes when they were received.

Class, PISCES.

Order, PLECTOGNATHI.

Family, TETRODONTIDÆ.

Tetrodon marmoratus, Ranzani.

10208. Canaries. Vienna Museum. (14.)

Family, BALISTIDÆ.

Monacanthus filamentosus, Val.

10217. Canaries. Vienna Museum. (34.)

Order, LOPHOBRANCHII.

Family, HIPPOCAMPIDÆ.

Hippocampus brevirostris, Cuv.

21122. La Rochelle. Mus. d'Hist. Nat. Paris. (22.)

Hippocampus comes, Cantor.

21163. Madagascar. Mus. d'Hist. Nat. Paris. (63.)