

RECORDS OF THE ALLEGHENY BROOK LAMPREY
ICHTHYOMYZON GREELEYI HUBBS AND TRAUTMAN,
 FROM WEST VIRGINIA, WITH COMMENTS ON ITS
 OCCURRENCE WITH *LAMPETRA AEPTYPERA* (ABBOTT)

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The upper Ohio River system of New York, Pennsylvania, and Ohio has generally been cited as the range of the Allegheny Brook Lamprey *Ichthyomyzon greeleyi* Hubbs and Trautman (Blair et al. 1957; Hubbs and Trautman, 1937; Raney, 1939a; Trautman, 1957). Recently, Clay and Lachner (1955) reported the existence of *Ichthyomyzon greeleyi* in Russel Creek, a tributary of the Green

TABLE 1*

Measurements of male and female Ichthyomyzon greeleyi in thousandths of the total length from two localities within the Ohio River drainage, West Virginia

Locality and Specimen No.	Sex	Total length	Tail length	Body depth	Eye length	Snout length	Disk length	Gill length overall
Meathouse Fork USNM 170972	♂	161.5	242	79	14	69	53	109
Little Kanawha River USNM 171992								
Ammocoete	—	125.3	274	65	—	—	—	113
1	♂	130.0	292	81	14	83	63	88
2	♂	129.7	292	83	12	89	62	110
3	♂	129.6	299	81	13	89	56	99
4	♂	127.5	308	72	13	89	63	114
5	♂	126.0	286	81	15	75	55	99
6	♂	123.9	281	76	13	78	61	98
7	♂	120.5	283	84	16	84	63	107
8	♂	118.8	287	80	12	87	63	98
9	♂	116.5	303	70	13	82	55	99
10	♂	114.1	304	84	11	82	53	104
11	♂	113.8	294	69	13	80	55	110
12	♂	113.5	273	65	12	84	58	115
13	♂	112.7	289	83	17	89	66	11
14	♂	111.6	283	73	13	84	58	101
15	♂	109.2	302	75	16	87	60	105
16	♂	108.7	290	82	17	78	60	107
17	♂	106.0	269	74	14	89	61	118
Averages		118.4	290	77	14	84	60	105
18	♀	129.6	287	75	11	80	52	110
19	♀	127.9	270	70	15	81	52	108
20	♀	124.6	258	70	10	76	51	106
21	♀	121.8	278	71	11	90	52	100
22	♀	121.0	285	68	12	74	59	104
23	♀	117.8	267	69	13	70	54	107
24	♀	114.9	280	70	14	79	55	103
25	♀	114.3	262	70	14	68	52	103
26	♀	109.6	283	67	14	75	57	107
27	♀	109.2	268	82	15	75	60	115
Averages		119.1	272	71	13	77	54	106
Grand Averages		118.9	283	75	13	81	58	106

*All values, except total length, are rounded off.

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River, Adair County, Kentucky. The later record of 4 specimens extended the known range of this lamprey some 400 mi southwest from that of the upper Ohio River to the Green River drainage of the lower Ohio River system.

A male lamprey, *Ichthyomyzon greeleyi*, 161.5 mm long, USNM 170972, was captured on March 20, 1957, in Meathouse Fork of Middle Island Creek, one and one-half mi downstream from New Milton, Doodridge County, West Virginia.

TABLE 2
Myomere and tooth counts for male and female Ichthyomyzon greeleyi from two localities within the Ohio River drainage, West Virginia

Locality and Specimen No.	Sex	Myomeres	Superorals	Infraorals	Circumorals	Anterior row	Lateral row	Biscuspid circumorals
Meathouse Fork USNM 170972	♂	58	3	8	21	4	7	10
Little Kanawha River USNM 171992								
Ammocoete	—	56	—	—	—	—	—	—
1	♂	58	3	10	21	4	7	9
2	♂	59	2	8	20	4	7	10
3	♂	58	2	7	21	4	7	9
4	♂	56	3	9	22	3	7	8
5	♂	57	3	6	20	4	6	8
6	♂	58	3	9	21	3	7	9
7	♂	60	3	9	21	4	7	8
8	♂	60	3	9	23	3	6	8
9	♂	55	3	9	22	4	7	8
10	♂	59	2	9	20	3	7	8
11	♂	57	2	6	18	4	6	7
12	♂	57	3	8	20	3	7	8
13	♂	56	3	8	22	4	7	8
14	♂	59	3	8	20	3	6	8
15	♂	60	3	10	20	4	7	8
16	♂	58	2	6	20	4	7	8
17	♂	56	2	8	21	3	7	10
Averages		57.8	2.6	8.2	20.1	3.6	6.7	8.4
18	♀	60	2	8	20	3	6	8
19	♀	60	2	8	22	3	6	8
20	♀	58	2	10	20	4	5	8
21	♀	60	3	9	20	4	7	8
22	♀	59	3	9	22	3	7	9
23	♀	58	3	8	21	4	7	10
24	♀	59	3	9	22	3	6	10
25	♀	58	3	8	20	3	7	8
26	♀	57	3	8	21	3	6	8
27	♀	58	3	8	22	4	7	8
Averages		58.7	2.7	8.8	21.0	3.4	6.4	8.5
Grand Averages		58.1	2.7	8.3	20.8	3.5	6.6	8.4

In addition, the author collected one ammocoete and 27 spawning *greeleyi*, USNM 171992, on May 16, 1958, from the Little Kanawha River at and for a distance 0.3 mi south of Falls Mills, Braxton County, West Virginia. The capture of these specimens extends the range some 300 mi northeast of Russel Creek, Kentucky, (Clay and Lachner 1955) and supports the distribution rounded out by Trautman (1957, Map 4) as extending along western West Virginia north to Pennsylvania and south to Kentucky.

The single specimen from Meathouse Fork was difficult to identify because of its large body size, certain meristic counts and body proportions intermediate between *I. greeleyi* and the parasitic form *I. bdellium* (tables 3 and 4). Counts and measurements, expressed in thousandths of the total length, of the 28 specimens captured in the Little Kanawha River (tables 1 and 2) readily fell (tables

TABLE 3

Summary comparison of measurements of *Ichthyomyzon greeleyi*. Range of variation and averages with those of *Ichthyomyzon bdellium*†

	Locality	No. of specimens	Total length (in mm)	Tail length§	Body depth§	Eye length§	Snout length§	Disk length§	Gill openings length overall§
<i>Ichthyomyzon greeleyi</i>	Pennsylvania (Total)	109	128.0 105-161	297 245-325	76 59-90	13 10-16	73 51-88	53 43-65	98 88-110
	Kentucky	4	122	—	—	—	—	47.6 41-52	—
	West Virginia Meathouse Fork	1	161.5	242	79	14	69	53	109
	Little Kanawha River	28	118.9 106-130	283 258-308	75 65-84	13* 10-17	81* 68-90	58* 51-66	106 88-118
<i>Ichthyomyzon bdellium</i>	Illinois to N. Carolina	27	189 124-259	274 214-311	73 62-92	11 6-15	86 29-91	69 35-77	89 84-107

†Information on *Ichthyomyzon greeleyi* from Hubbs & Trautman, 1937 and Clay and Lachner, 1955 and *I. bdellium* from Hubbs & Trautman, 1937.

§Measurements in thousandths of total length.

*27 specimens.

TABLE 4

Summary comparison of myomere and tooth counts of *Ichthyomyzon greeleyi*; range of variation and averages with those of *Ichthyomyzon bdellium*†

	Locality	No. of specimens	Myomeres	Superorals	Infrorals	Circumorals	Anterior row	Lateral row	Bicuspid circumorals
<i>I. greeleyi</i>	Pennsylvania (Total)	109	57.9 55-61	2.8 2-4	9.4 7-12	21.5 19-24	4.1 3-5	7.2 5-9	8.4 7-11
	Kentucky	4	57.5 56-58	3 —	9.3 7-10	— —	— —	— —	7.8 7-8
	West Virginia Meathouse Fork	1	58	3	8	21	4	7	10
	Little Kanawha R.	27	58.1* 56-60	2.7 2-3	8.3 6-10	20.8 18-23	3.5 3-4	6.6 5-7	8.4 7-10
<i>I. bdellium</i>	Illinois to N. C.	27	56.9 53-62	2.6 2-3	8.4 7-10	20.8 19-21	4.3 4-5	8.3 7-10	7.8 5-10

†Information on *Ichthyomyzon greeleyi* from Hubbs & Trautman, 1937 and Clay and Lachner, 1955 and *I. bdellium* from Hubbs & Trautman, 1937.

*28 specimens.

3 and 4) within the known variation of *greeleyi* (Hubbs and Trautman, 1937; Clay and Lachner 1944). Males generally had longer tails, snouts, oral disks, shorter gill lengths and wider bodies than females.

I. greeleyi was taken at both localities in streams with gentle gradients of approximately 50 to 75 ft in width. Where riffles occur the bottoms are composed of boulders, gravel and sand while interspaced pools have bottoms of shifting sand. Riffle boulders ranged in size from 6 to 24 in. in diameter and often 12 in. in thickness.

Raney (1939b) observed and breeding of *greeleyi* in the Little Neshannock Creek, Pennsylvania, between May 19 and 26. He noted also that spawning was most intense at 3 PM and that it occurred on or at the crest of riffles. Trautman (1957) comments that spawning occurs about May 10 and 11. The spawning period of *greeleyi* in the Little Kanawha River occurred within the period noted above. Spawning was most intense between 2 and 5 PM, but did not occur on or at the crest of riffles; instead the middle and lower portions of the riffles were utilized.

An interesting point of association exists in that *Ichthyomyzon greeleyi* and *Lampetra aepyptera* occur in the same stream systems. Both species were collected together in Meathouse Fork, whereas in the Little Kanawha, these two species occupy different parts of the same stream system. Hubbs and Trautman (1936: 46) speculated that if these two species should be found in the same stream system, they would avoid each other, as both adults and ammocoetes of *aepyptera* would inhabit smaller brooks while *greeleyi* would occur in the larger creeks and smaller rivers. This situation was observed in the Little Kanawha River where *aepyptera* is found in the smaller tributaries such as Sand Fork, one-fourth mi north of Sand Fork, West Virginia, and in the narrower portion of the Little Kanawha River downstream from Falls Mills at Burnsville, West Virginia. The Little Kanawha River, at this point, is peculiar in that its middle section is a constricted, deep-pooled, high banked, slow meandering stream 20 to 50 ft wide, sporadically possessing riffles. Above this area, as the stream flows out of the mountains, it is a fast flowing shallow stream. Below the constricted area, beginning at Grantsville, West Virginia, and for some 50 mi until its junction with the Ohio River at Parkersburg, West Virginia, the meandering river is wide, slow and deep. It is peculiar that *I. greeleyi* occupies the stream system above this constricted area where *L. aepyptera* has been found to occupy the constricted zone of the river. *L. aepyptera* is further isolated from *greeleyi* as it spawns at the crest of riffles and earlier, spawning April 3 to 6, 1958.

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