
November 2014

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ABSTRACT

This field journal by Charles M. Breder, Jr. was written during his fieldwork in New Hampshire and New Jersey, as well as, some entries pertaining to New York and Prince Edward Island from 1935 through 1959. This diary covers Dr. Breder's observations and experiments of various fishes although focus on *Lepomis auritus; Castostomus* and *Micropterus dolomieu* is evident. Throughout the journal Dr. Breder records the conditions of the lakes, rivers or ponds along with the behavior, spawning, and fish populations. Additionally, the journal contains Dr. Breder's observations of birds and terrestrial animals. Dr. Breder includes entries of financial and personal discussion.

INTRODUCTION by Gail Donovan

This publication is a collection of transcribed field journals of the ichthyologist Charles M. Breder Jr. The journals are part of Mote Marine Laboratory's Arthur Vining Davis Library and Archives' special collections. The collection and its digitization are intended to preserve Dr. Breder's work, as well as, make it more accessible.

The following journal covers Dr. Breder's research at locations, such as, Kensico Lake, New York; Camp Kildare, Prince Edward Island and Sandy Hook Bay, New Jersey from 1935 through 1959. Dr. Breder’s detailed accounts of his experiments and findings provide an invaluable resource to ichthyology and environmental science. Additionally, Dr. Breder's personal descriptions present an illuminating window into Dr. Breder himself.
DIARY AND TRANSCRIPTION

The handwritten diaries of Dr. Breder's field activities in Florida were written in eight bound black and brown notebooks in ink. The diary was transcribed by hand. Indecipherable entries were noted with "[?]". Numbers outside the margin of the transcribed text are the page numbers of the original notebook. Any misspellings or grammatical errors are Breder's own. The scientific names used in the diary are sometimes different from currently accepted ones. Current accepted names are provided in the footnotes.

REFERENCES


ACKNOWLEDGEMENTS

The editor wishes to thank the Breder Family and the staff of the Mote Marine Laboratory for their assistance. This projected was funded by the Arthur Vining Davis Foundations.
1935 Blaisdell Lake, N. H.

July 25 Guests of Herman Forster. Arrived 8:45 P. M. by ca. _R. catishina_ calling.

July 26 Turned out 700. Many 1, 2 and 3 year _Lepomis auritus_ about dock. Old _Micropterus dolomieu_ nests still evident. Presumably many have been subsequently used by _Lepomis, Perca flavescens_ and same this year. _M. dolomieu_ (about 1") also evident. Visited Sutten Brook and collected a variety of _Cyprinids, Rhinichthys cataractae_ most abundant. Preserved a sample for identification. A small celuloid trap very successful with corn meal for bait. This brook is dark brown (vegetation stain). Above and below this section sunfish and suckers are reported to be common. Some _Catostomus commersonii_ seen, but not taken, with the minnows. Temp 69° H²O.

In the P. M. visited Blanerst’s Cove and examined sunfish and bass nests. Two of the former _L. auritus_ were still in their nests and the rest recently deserted. Mr. F. stated that a week ago all nests were occupied. Only those on the westly side of the cove, ie receiving the early morning sun looked clear as though recently occupied and here were the two remaining occupants. On the easterly shore the nests looked dirty and silt filled. Presumably this shore is used only at the height of the season. More hours of daylight. Certainly the temperature could be scarcely different. Temp 81° H²O. Also in this cover were last years _M. dolomieu, Perca flavescens, Lepomis auritus_, and some _Natripis_ sp.

In the evening Mr. F. tried some plug fishing for bass- no strikes Crawfish numerous in cove. Turned in 1200.

July 27 Turned out 800 Visited _Leponius_ nests in Blanert's Cove. Measured the only ones in sufficient repairs to be worthwhile- as follows.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Inside Dia</th>
<th>Outside Dia</th>
</tr>
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<tbody>
<tr>
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<td>21&quot;</td>
<td>301/2&quot;</td>
</tr>
<tr>
<td>21</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>24</td>
<td>20</td>
<td>24</td>
</tr>
</tbody>
</table>

Only one fish in nest (the first above)

Had a malarial attack and rested in the afternoon and evening. Mr. F. caught 4 _Americus nebulosus_ off the dock.

July 28 Turned out 800. Visited Mr. Kimbelle trout pond at Hopkinton. This is a large artificial pond stocked with _Salvelinus fontinalis_ and _Salmo irideus_. This in its third summer and many fish are dying. Last year at this time the same thing happened. The most of the dead fish are the _Salmo_. The pond is brown bog water, spring fed and with one artesian well. It is grown up with pond weeds, _Utricularia major, Myrophyllum_ etc and harbors much small life, _Gammarus, [?]_ red water mites etc. It has a typical frog pond appearance and is actually full of frogs (_R. catishiana_ and _clamatons_) and tadpoles. The surface temperatures so far as taken
are uniformly 80 ° except immediately over the artesian well where it is 78°. Below (3') it is uniformly 76 ° or brought up on a non-reading thermometer. This is too warm and may be the cause of death. No evidence of disease could be noted on the dead fishes as they were too far decomposed. There may be much cooler spots in the lake. It is strange that only a few die each year if suffocation is the cause of death.

Collected some young cyprinids near the bathing beach in Blaisdell Lake in the afternoon. (see page 4) Non-breeding sunfish hang about the camp dock continually- the past spring symphonia. The water is still and there is no school but a definite aggregation.

July 29

Rain intermittently all day. In the morning visited Concord and talked with the Dept. of Conservation. Mr. Stokie, the Commissioner however was away. Collected some more minnows in Sutton Brook of the same species as before.

In the afternoon- Mr. F. angled in Blaisdell Lake. He got five Micropterus dolomieu. The smallest was preserved for museum purposes. The others all had spawned recently and were each well filled with Cambria [?] remains only. All had much visceral fat and one contained a large lump of pinkish nematodes.

The four Americus caught the day before yesterday continued one developed gonads so had apparently spawned recently. Took a short walk on the hill in back of the camp and saw two red- [?] stages of the newt (Trichiurus miticus). And a single large red and black banded millepede.

The fish viscera thrown overboard at the dock attracted a large number of Cambarus. The aggregation of Leponius breaks up at dark at the dock and usually more are to be seen but tonight a single fish, resting quietly near a rock was noted. Apparently they do not travel far but simply drift away when fading light fails to give the "landmarks".

July 30

Visited Concord in another attempt to see the Fish Commissioner, Mr. R.H.Stokie. Neither he nor Mr. Halliran were available. Most of the day was spent at an auction of antiques that interested Mr. F. Species of Cypinidae collected on July 28.

Rhinoschthys cataratae many
Notropis [?] many
Nocomus [?] (1)
Aug 15
Kensico Lake, N.Y.

Afternoon with R. Nigrelli, H. Foster and Brown

*Pomolobus* pseudoharengus in Horseshoe bend stemming the inflowing current. All seen were of the smaller size, presumably last years fish since the collection taken from the outlet screens in the winter showed two year classes. Took a few feet of picture film of the fish. Due to the extreme turbulence of the water made it impossible to catch any by means available to us. The behavior of the fish aided in this as the sought deep water on the slightest approach. Dip nets from both bank and boat were tried as well as a 100' seine used as a dipping cloth. Ordinary sling was tried agail and yielded a single *Micropterus dolomieu* about 11/2' long. This years fish. Large specimens of the same species as well as *Cephalus* (?) were seen feeding on the herring. Kingfishes also were about for the same purpose.

Mr. Foster tells that several *Cristanaria* (?) were taken in the 'Rye Lake' arm of Kensico. Both also said these small herring were "in" for about two weeks. Those seen on June 30 were definitely of the larger size- two year fish according to last winter calculation.

The (?) were reported to be crammed with Pomolobus which indicates they were in that lake below the thermoline. A short stop at Waterbury Cove showed that *Lepomis* and *Eupomatus* were definitely off their nests at that place for some time. The nearest nest ages of the depression well silted once could be made out.

Aug 17
Drove to Water Vista to visit Mrs. Snyder. A nice place of 9 rooms close to Mahwah Station. Ethel.

Aug 18
Examined the creek running in back of the house, Mahwah Creek. It contained numbers of *Cephalus* (?) *Castostomus commersonii* (?) and apparently *Exoglossum moxillingud* and *Notropis* (?).The first two spines were all small, this or last years fish. Two very dense clusters of whirligig beetles were seen.- same special aggregation- none were seen in their usual dashing about. The beetles were nearly in contact.

This creek drains out of a pond across the road, Ramapo Ave., known as Winter's Pond.

In it were seen *Cephalus* (?) and in the spilling of the dam great numbers of small *Abramis* (?) These were of two sizes about 3/4" and 11/2". The former were schooled near the surface and the latter a little deeper.
Numerous (?) were about as well as same *Rona*.
Returned about 6\(^\text{th}\)

[blank]

1935

Pines Lakes, N. J.

Sept 7

Visited Hartshorn at his country place. A few sunfish are along the shore but apparently most have moved off to deeper water.
Rain most of last week with generally lower temperature.
Saw a large fish splash (Bass?) and chase a school of *Abramis (?)* which broke water. An angler had a *Esox (?)*.

Sept 8

Took a hike and had a lunch in the open. A great number of 'doodlebugs' (out laws) had their pits in the shelter of an outdoor table.
Bitter-sweet is just starting to 'pop'.
The temp reach 60\(^\circ\) F last night.
Kingfisher still rattling and catching fish.

Sept 9

Left for N. Y. early in the A. M. A low mist over everything.

[blank]

Kensico Lake

Sept 14

Examined the Sawmill River at Woodlands, (below Elmsford).
Numerous small fish were seen that almost surely were *Rhodeus amarus*.
Some years ago they were common at Elmsford but then disappeared.
With Coates and Nigrelli.
*Pomolobus pseudoharengus* are still to be found at the inlet to Kensico (Horseshoe Bend) but are not numerous. Managed to catch 2 fish one the smaller size and the other a still smaller fish not over 20 mm long. Schools of their size could be seen in the strong current. These without question are this years spawning. The fish are apparently beginning to drop down the lake with the first sign of fall.
Visited a spring (not seen before) beyond the Horseshoe and found it full of *Desmanatus (?)*. Never saw so many in one place before.
1935

Kensico Lake

Oct 12

Visited the Kensico inlet. *Pomolobus* are still abundant there, all of them small, this years size. The water is high and turbulent and it is remarkable that these small fish can stem its flow and indeed "play" in it. They have not yet appeared at the outlet screens according to Mr. Brown. Only two of the Mallard ducks bred in the "horse-shoe" remain.

Also visited Wampus pond where they are getting ready to drain it.

- Probably this cannot happen before freezing.

The trees are in full color- probably the height of it right now.

Drove around Byran Lake also. With Ethel.

1936

Kensico Lake

May 8

Visited a variety of spots with Mr. Forester and John Greely. Had lunch at the new CCC camp. Water still very turbid from heavy floods this spring visibility poor. Some bass seen at Waterbury cove. Some fairly large carp seen at Croton Lake.

Visited a private pond on the property of Mrs. G. MacDonald-Reed Box 69 Ossining. This is adjacent to the property of Gerard Swope. It contains a large number of (?) started in a manner similar to the *Eupomatus* of Pines Lake, N. J. and Central Park N Y. City. These fish were in the throws of some epidemic of an external infection (?) and remotely resembled *Castia* but the white spots were raised and flakey. Specimens were taken for study. The only other fish known from the lake by the (?) were small-mouthed Black Bass and Yellow Perch, neither of which were infected. The water temperature at the shore line was 75° F!

Water snakes and turtles were much in evidence in the water supply waters. (?) were being caught freely in several places, *Castostomus commersonii* were reported spawning May 2 at the Croton Falls outlet by Mr. Forster.

1937

Croton Lake

June 10

Visited Croton River with Mr. Forster. Under the new 'Cornell" dam there was a considerable concentration of Fishes, as follows:
Further down stream the sunfishes were still nesting. The stream is slow and the water low. Temp 70°.

Saw a disabled *S. fario* that was inclined to capsize. When this occurred the fish would wedge itself between a couple of rocks to remain somewhat upright. This went on intermittently for about 1/2 hour. Look a photo of it. The fish was about 11” long.

Examined the "stream improvement" work carried on last year by the C.C.C. under the direction of the State Dept. Conservation. The dams looked good enough but none held. All had been indirect during the past winter. Bad design!

Sandy Hook Bay

July 20  
Left the Battery on the "Seahorse" 10:00 a.m.  
Made two sets of a 1/2 meter #4 holding cloth tow net as follows.  
#1 N.W. Owl's head Park about 1000 yards.  
   11:05 daylight time 1/2 ebb tide  
#2 W of West Bank light about 1 mile.  
   12:15 ebb tide.

July 21  
#3 Off Sandy Hook point 12:00 ebb tide  
The Pound nets are getting very little  
Sometimes less than a half bushel of everything.
Collected some *Menidia* for study. They were allowed to suffocate in the pail until some had died. Results follow.

<table>
<thead>
<tr>
<th>Exp #1 Alive</th>
<th>Dead</th>
<th>(measurement [?]. s.l.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>94 ♀</td>
<td>89 ♂</td>
<td>75 ♀</td>
</tr>
<tr>
<td>71 ♀</td>
<td>111 ♂</td>
<td>80 ?</td>
</tr>
<tr>
<td>69 ♀</td>
<td>87 ♂</td>
<td>75 ♀</td>
</tr>
<tr>
<td>49 [?]</td>
<td>79 ♂</td>
<td>66 ♀</td>
</tr>
</tbody>
</table>

Exp #2 Due to difficulty in sexing as all were recently spent the second catch, much larger, was preserved for study in the laboratory.

July 22

Returned to Battery 11⁰⁰ - Aty, Blair, and Ruge [?] on board.

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Camp Kildare- Jordan Lake

Oct 15

Took 8:¹⁵ from Grand Central for Tupper Lake Junction. Ralph Friedman, Charles Friedman and friend.

Oct 16

Arrived Tupper Lake 5:¹⁵. Drove to Camp Kildare. Walked entirely around Jordan Lake inspecting inlets, outlet and shoreline. The water is quite clean with a slight amber tint. There is little vegetation. The inlets are small, only two large enough (one from Little Jordan Lake) to permit entrance of even modestly sized trout. The outlet, on the other hand is inside and shallow but easily navigable by the largest trout.

The largest inlet (not the one from Little Jordan) was photographed. Temp air 37.5 ° water of largest inlet 36 ° at 10:¹⁵ a.m. This is the third inlet moving from the camp in a counterclockwise direction. Took a photo of the head of the Lake. Here some rushes grow in the water and there are some lilly pods. The shore is all fine sand. A good place for pickerel and sunfish or bass. The slope is very gradual. Otherwise most of the shoreline is mixed sand and gravel with some rocks, loose and in outcrops. Between the outlet and the camp one cove is somewhat checked with the brush of fallen trees. There is not enough [?] to give much shelter to forage minnows. Took photos of outlet of lake. Not a fish seen all around the pond.

It would seem that this lake is most suitable for pond fishes. There seems to be no reason to suppose that brook trout would stay in the lake
if planted. Since they cannot occupy the tributary streams because of
their small size, the only other source of escape is through the outlet.
Fishing is fair in Jordan River. Five years ago some 6" fish were planted.
Last year fishing in the river was very good in the [...]

Visited Amber Lake in the p.m. This is similar to but smaller than
Jordan Lake. More muddy and brushy etc along shore lines. Offers
places for fish to hide. Lilly pods near very reedy outlet. Inlet small, not as
large as the Jordan Lake largest in [...]. Took photo of a Doe at inlet. Saw
a 2nd year Herring Gull on lake. Found a dead *Catostomus* *catostomus*
in lake near inlet. This lake might support more trout per unit than Jordan.
There are no perch reported from here.

Returned by trail called the "long spring trail. Crossed the outlet of
Little Jordan Lake. These inlets could be improved by trout improvement
work- but this would not help the Lake population but might encourage
breeding. Saw Arctic three-toed woodpecker and some Canada Jays in
the morning. Blue Jays also present, as well as Chickadees, [...].

Saw a red squirrel in the P.M.

Last summer a snapping turtle made its nest in the tennis court.
This was not discovered until the eggs hatched.

Saw two separate trees in the deep woods that have been struck
by lightning. There is considerable evidence of spiral growth in the timber
counter clockwise. There is much [...] of the soil and the roots of large
trees are frequently in the exposed position. Large rotted logs frequently
appear solid but are fully hollow. Some large enough to crawl through. All
are well moss grown. There is considerable sphagm [...] about as well
as grand pine and similar floor cover.

Turned 1100

Oct 17

Turned out 615

Visited Jordan River in the A. M. This stream a little sluggish in
spots has good cover and numerous fast places. It looks to be a good
place for trout. There is no reason to favor stream improvement work in
the stretches examined. Got an excellent view of a Pileated Woodpecker
and heard another. Their call is same similar to that of the Flicker but
louder and more liquid. Saw another Arctic 3-toed woodpecker. Took
photos of various regions of Jordan River and some of Jordan lake.

In the P. M. visited Otter Pond. This is a small but shallow pond.
Fish have been

planted here but no one has tried fishing for four years there. It might be
good. There is plenty of litter along the shore. It was not far from here that
a bear was shot last night.

Went on to visit Potter Brook. This is on State land. It looks like a
good trout stream. Saw what may have been trout breaking water. Took 2
photos of a doe on the way back. Also several of Otter pond and
Otter brook. Visited Potter brook where it crosses the road. This about concludes an inspection of most of the more important waters on Kildare. The weather has been excellent the entire time.

Turned in 11:00

Oct 18 Turned out 7:30 Took a long walk alone around Jordan Lake. Saw five deer near the head of the lake. Examined all streams entering Jordan Lake for evidence of fish life. Only in the stream from Little Jordan Lake was anything to be seen. Here at the bridge under the wagon road were three Salvelinus fontinalis about 10", 9" and 6" They looked poor.-slinky and with heads large. One was actually rooting in the mud for food!

Examined also the outlet from Amber Lake. Nothing could be found at all. Apparently there is a considerable dearth of brook minnows.

There was much evidence of deer markings at the head of the lake.

Water strides were seen on the Amber lake outlet. They were too cold to move normally and succeeded in doing little more than jumping up and down when disturbed. No other aquatic invertebrates, such as snails, crayfish etc could be found. Along the lake shore there were innumerable heaps of mussel shells- the work of Coons.

Mostly rested in the P.M.; took a short walk with Ralph Friedman in later part. Cloudy and starting to rain. Left for N. Y. in the late evening. Heavy rain. Almost ran a deer down on the road to the station Caught the 11:00 P.M. sleepover for N. Y.

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[blank]

1938- Kensico

May 20- Collected various wild plants on hill in back of Wampuh [?] Pond. (See Home notes for species). S. Denton [?] took photos of a blue jay in a nest of 3 eggs. This was on a steep slope in a pine. Actually the nest was not more than 6 feet from the ground.

In another place Mr. Forster collected two young long-eared owls that had just left the nest.
Saw very large and abundantly diseased Abramis [?] in Bear [?].

Cloudy with showers all day.

28

<table>
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<th>Mileage.</th>
<th>Speedometer</th>
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<td>0</td>
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<tr>
<td>Kildare</td>
<td>6,150.1</td>
<td>318.6</td>
<td>3186</td>
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<tr>
<td>Mahwah</td>
<td>6,458.2</td>
<td>308.1</td>
<td>626.7</td>
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</table>
Kildare- 1959

Aug 31  Drove in Rambler with Ethel from Mahwah via the N. Y. thruway to Amsterdam, rout 30, 8 and 10Left at 8:45 and through driving rain and road construction arrived Tupper Lake 3:30.
Got established and talked with Ralph about Museum and Cape Haze matters.
A great many Flickers were on the road in. Some tame deer came about the lodge for bread hand outs.
Turned in 11:30

Sept  1  Turned out 7:30 Clear and rather warm.
Took a walk with all, Ethel, Ruth, Mrs. Hunt and Ralph. At least 3 loons on Jordan Lake. Small sunfish (*Eupomatus*) about the shore.
Cloudy and with some rain. Talked out plans with Ralph Friedman for his work at Cape Haze. and looked about at things near the lodge.
Turned in 12:30

Sept  2  Overcast and warm.
There is some wood boring beetle larval (?) that makes so much noise that it can be heard in our bedroom from a woodpile 30’ away as a clear and distinct grating sound. None present had ever noted it before, although one log in the fire place made considerable racket last evening.

Expenses

<table>
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<th>Date</th>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Aug 31</td>
<td>N.Y. Thruway tolls (Suffern to Amsterdam)</td>
<td>2.30</td>
</tr>
<tr>
<td></td>
<td>Lunch at Speculator (92 and tip)</td>
<td>1.65</td>
</tr>
<tr>
<td>Sept 6</td>
<td>(?) to help for the last five days</td>
<td>20.00</td>
</tr>
<tr>
<td>Sept 7</td>
<td>N.Y. Thruway tolls (Amsterdam to Suffern)</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Mileage @ 7 [cents symbol] for 626.7 miles 43.63

Total 69.88

Because of threat of rain worked on paper matters (oscilloscope operation) in the morning.
In the afternoon walked to the brook running from little Jordan to Jordan Lake. There is an operation to provide this, the largest feeder of Jordan Lake with suitable spawning places for brook trout. It looks like a reasonable operation, undertaken by someone from the State Conservation Service.
Read and talked in the evening- light rain.
Sept. 3  
Turned out 7 45. Clear and cooler.  
Worked around the place on small matters and an oscilloscope study in the A. M.  
Went to Tupper Lake on errands in the p.m. and stopped at various spots to look at deer and streams. Took a photo of the old Kildare R. R. station and several including Lake Hunter [?].

Sept 4  
Turned out 7 45 Clear and considerably cooler. Oscillograph study and swimming in the A. M.  
Walk and discussions in the p. m. with Ralph.  
Rested in the evening.  
Turned in 12 50