

Tuesday June 27, 1944 #1

WJK44-06-27-01

Weather: Clear, warm in afternoon. Heavy frost last night. Windy off and on, especially in morning.

Rio La Santa - Max-min. therm. 57-41 ° F. at 9 AM, 42 ° F.

9:40 Below Palcaripio creek A 13 1/2 ° C W 6 1/2 ° C.

9:45 - Some trout are on the rdds but relatively few.

As the day progressed more became interested in spawning. The stream was clear of all effects of the rains and the trout were feeding freely at the surface. They gobbled ants that I threw in. Ants are "flying" now.

Scanned for a while but several little pools were too deep and current too swift for me to manipulate successfully. Caught 3 trout.

9:45 AM	156 mm T.L.	Wt. 302-8	from deep hole beneath ^{spring} n.
9:50	164	39.5	do.
9:55	171	40.0	same pool as above but under snag.

10:30 AM Set up cameras & myself at redd.

10:55 AM They have made several attempts to enter redd. Pip frightened them three times. They are now back and appear to be acting normally. The whole region is in dense shade and will be for several hours. I am very close to the redd but am not silhouetted because of trees behind me. Two males seem interested.

Tuesday June 27, 1944 #2.

11:00 AM ♀ on redd, ♂ on right (pool) side of ♀ slightly back.

11:01- ♂ quivered; chased intruder, quivered; ♀ dug.

11:02 ♂ took something from surface; chased intruder; ♀ dug; ♂ quivered.
(in order)

11:03 ♂ went to ♀'s left and quivered, chased intruder.

11:04 ♀ dug, left side; ♂ chased intruder; quivered.

11:05 ♀ dug, left side; ♂ quivered.

11:06 ♂ chased intruder; setts.

11:07 ♀ dug, left side; setts.

11:08 ♂ quivered on ♀'s left. Ventral side always aimed toward ♀. ♂ x-mut

11:09 ♂ quivered on ♀'s left, touched ♀ ~~near~~ near vent and back anteriorly to mid-abdominal region.

11:10 ♀ dug, right side; ♂ chased intruder; ♀ dug, right side.

11:11 ♀ dug, left side; felt bottom with abdomen.

11:12 ♀ dug, left side; ♂ absent. I can not see well in the pool beyond the redd but I believe him to be arguing with a larger ♂ that has been coming around lately.

11:13 ♀ dug, left side.

11:15 3 fish returned, ♀ excited one away.
3 on nest.

— — — — —
All mixed up - more fish.

11:17 No fish on redd for some time.

A male, attempting to enter redd. He ~~stuck~~ protruded his entire head out of water twice. During the day other fish were observed to to a similar action. Insects did not seem to be the cause. On a number of occasions, in the afternoon, both ♂ & ♀ took occasional gulps of air which they passed over their gills.
Left redd.

Tues day June 27, 1984 #3

11:19 - back again; left to chase intruder.

11:20 ditto. A trout in the pool just took a surface fly very handily.

11:21 original ♀ back; ♂ quivered and chased intruder

11:22 ♀ dug; left side; tested bottom; original ♂ back, left with another ♂.

11:23 Another ♀ is starting a redd 18 inches back and to the side of original redd.

11:25 original pair just returned; ♂ drove ♀ out, attempted to bite.

11:26 one ♂ hit another near redd.

11:30 no one on redd since 11:26. General chasing about in pool, some biting going on. Visibility in pool improving.

11:44 original pair have been on redd for 2-3 minutes. ♂ quivers frequently, ♀ has dug several times.

There is more activity on main riffle now than earlier.

11:45 ♀ dug, right side; ♂ quivered right side; ditto.

11:46 ♀ dug, left side; ♀ tested pit & ♂ approached; ♀ tested pit; dug, left side.

11:47 a large fish came, drove the others off, then left.

11:48 original pair back.

11:49 ♀ tested pit, ♂ quivered as she did so; ♀ dug, right side.

11:50 ♂ left to chase 2 other males that appear to be rying each other up.

11:51 ♂ quivered, left side; ♀ dug, right side
♂ quivered, ♀ dug.

11:52 ♂ quivered, right side; ♀ dug right side; ♂ chased intruder

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11:53 ♂ gurneed, right side; ♀ dug, left side.

11:54 ♀ dug, left side.

11:55 ♀ dug, right side, ♂ gurneed right, then left, then right.

11:56 ♀ dug, right side, ditto.

11:57 ♂ gurneed, left side.

11:58 ♂ gurneed, right side then left side.

12:00 several digs and gurneers not recorded as I was
check possibility of taking pictures now.

12:01 ♀ dug left side, ♂ gurneed left side.

12:02 ♀ dug right side

12:03 ♂ gurneed, left side.

12:04 ♂ gurneed, left side; chased intruder.

12:05 ♀ dug left, ~~then~~ ^{dug} right.

12:06 ♂ gurneed while ♀ rested

12:07 ♀ dug left

— Much activity on main ripple now, some
have their backs protruding out of the water.

12:08 ♂ gurneed left side over back.

12:10 ♀ dug, left side

12:11 ♀ dug right side

12:12 ♂ gurneed, left side; ditto; ditto.

12:13 ♀ dug right side

12:14 ♂ chased intruder; gurneed, left side; ♀ dug right side

12:15 ♂ gurneed, left side; ditto; ♀ dug right side.

12:16 ♂ chased intruder for a longer distance than usual,
all of six or ~~seven~~ feet.

12:17 ♂ chased a surface feeding fish; ♀ dug, left side.

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12:19 ♂ quivered, left side; chased intruder

12:20 ♂ hit intruder, then hit ♀. No one on redd,
lots of chasing going on.

12:25 original pair back; ♀ dug, right side.

3:10 Have been watching and photoing. On 3 or 4 occasions when the ♂ was chased by a larger ♂, he chased the ♀ away, after he attempted to hit. It seemed to deprive the victor of the "spoils" and he left the redd shortly after in each case.

The ♀ has not returned from last chase. ♂ was on redd and took a large ant floating at the surface without hesitation.

3:25 Both sexes fed while on redd. Observed both do it, then turned in ants and took morsels of it feeding.

5:30 A $27\frac{1}{2}^{\circ}\text{C}$ W 14.5°C .

The preceding descriptions apply pretty well to the activities of the day from 12:25 to about 5 P.M. when they resumed.

The ♂ did lots of quivering. During the afternoon he occasionally opened his mouth wide while doing so, especially when he was testing the pit. He chased lots of intruders, ~~the~~ including fish feeding at the surface three feet from redd. When he was chased by a larger ♂, he sometimes (usually) drove off his own ♀. After the intruder stayed more than a moment he

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(the original ♂) would attempt to enter one of the
redds on the main riffle but was promptly pursued.
At no time were there real fights, although one ♂
often hit another. It was never mutual. Neither
was there a rigid ceremonial as in the herring case. Evidently
matched pairs would swim about together for a while.

The ♀ dug at fairly frequent intervals. As the
spawning time approached, she tested the pit with
increasing frequency. Occasionally she drove fish away.

The spawning act was simple. The ♂ went through
one of his quivers with his mouth open. The ♀ opened
her mouth. The eggs and a cloud of milt surrounding
them appeared in the deepest part of the redd. The ♂ left to
chase intruders. The ♀ dug ~~very~~ so much more
vigorously around the three upper sides of the redd
and quickly covered the eggs. The ground was nearly
level in about 15 minutes. (Time not noted - was
changing film and camera jammed)

After the act, other ♂s came up and quivered about
the ♀, especially 1 little fellow about 4 inches long. Probably
a precocious 2 yr. old. For a few minutes the original ♂
tolerated other males, but he soon took to
chasing them again.

The pair were probably 3 yr. olds, about 5-6 inches long.
The ♂ did not show the typical coloration as he retained
the juvenile pair marks. Many of the fish were in this
condition & made sex recognition difficult.