

Sept 5, 1950 #1

WJK50-09-05-01

Arrived of Agassia rudds at 700.

A 61 006 is cloudy. light rain last night.

58 rudds in the lower area, and 12 or 13 in the upper.

718 one ♂ is cleaning. Some kicking & chasing.

722 Cruising ~~radius~~ circle of ♂ should be radius, not diameter, as stated earlier.

The diameter of the fenced rudds is 3-4 x L of ovum.

726 A spawning may be taking place; at least a lot of circling involving several ♂s is going on.

730 3 ♂ followed a ♀ over several rudds. One finally spawned with her. ♂ in a U over back of female.

731 Spawning in another rudd. No chasing followed.

733 cleaning

736 ♀ followed by a ♂ went from rudd to rudd; finally lost because of interference.

Most rudds are unoccupied as is the usual case when I am here.

At 730 & now it seemed that the ♀ was testing the bottom by close inspection with the mouth & P fins.


Had impression they were grazing bottom at other times.

Wiggling & circling of ♂ & ♀ are the same.

♀ goes about rudd, sometimes slowly, sometimes fairly rapidly. ♂ may touch her anywhere between mouth and vent or not at all — may follow a short distance behind & toward the center of the rudd, his head about opposite her vent or anal fin. ↘

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745 Circling of  $\sigma$ 's going on. No grapples as yet but one near miss.

746 Two males followed a  $\phi$  about. One <sup>at last</sup> finally spawned with her, apparently in a ridd that belonged to a somewhat smaller male. The  $\phi$ 's back was arched back ; her mouth was open. The  $\sigma$  was in a U over her back.

747 Near miss on spawning. The  $\sigma$  was in a U over the back of the  $\phi$  - seemingly behind the D - but the act was not completed.

755 A small battle. 30+ seconds

Wonder what part chemical sense plays.

800 468 062 1. cloudy.

A running (hove?) at 200± feet caused them to leave temporarily.

812 Just the usual bickering

813 Another tussle; same pair as at 755

821 a  $\sigma$  &  $\phi$  circled in the ridd  $\sigma$  was not touching the  $\phi$ . The  $\phi$  was touching the bottom with the P. - almost seemed palpating and mouthing. The  $\phi$  left to enter other ridds several times returned ~~was~~. Two other  $\sigma$ 's came in and circled rapidly, while the  $\phi$  was on the sidelines. The pair,  $\sigma$  &  $\phi$ , circled after the fight but other males prevented mating.

830 Male just described has been busy cleaning.

841 Circle fight on another ridd.

844 ditto

September 6, 1950 #3

~~847~~ 847 Three Pantosteus have settled in a redd near the rim of the most active ♂ (821) He finally erected them by rapid circling just below them and by nudging them. I believe they finally left during the fight of 2 ♂s since I was recording the preceding when most of the action occurred.

900 A 73 W 63 .9 cloudy.

Little but the usual hickering going on

907 Another Pantosteus moved into the same redd and took a beating before it moved quietly out of the redd.

910 The active ♂ has just had a good fight & is now driving out two Pantosteus - Out at 911

922 Another Pantosteus. Same redd.

There is no mad scramble for eggs as in Rhinichthys. The moving in of others seems more like venturing to find a ♀.

938 Suckers of both species are swarming over the reds and are being chased off. It is getting lighter. Shadows are now apparent.

1000 A 77 W 69 .4 Cloudy

No ♀ has been about for a long time

1017 I believe that I earlier questioned nuzzling between males. It happens. Also with Calostomus.

1025 An Agosia turned on his side and repeatedly ~~to~~ went back & forth across ~~the~~ a redd then bounced off upstream on his side. Scratching. Came back to the same redd again and

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left.

1026 Scratching again in a different redd. I have seen a little scratching like this before but not like this. He must have a bad itch!

1035 Scratching across 5 redds.

1036 Calocrotomus is more likely to circle when nudged than Pantoclerus.

1047 The active male just swept (dug) twice. Otherwise things are quiet.

1048 The active male just had a circle fight. The most activity for a long time.

1050 One individual scratched himself repeatedly on four redds. ~~The scratching is the same type of motions employed by a ♀ of CT in covering~~

Outside of the area of redds is usually a mixed school of suckers and also some Agonia, including the ♀s.

1100 A 87 073 .3 cloudy

Left to make a collection. Before doing so I moved the equipment closer to the upper end of the area where the most action is. Also ate lunch and returned at

1310 A 87 079 .7 cloudy

Thunderstorm to S.E.

1315 The active ♂ is back to fighting.

1400 A 87 079 .5 Cloudy.

Thunderstorm about. Few fish on redds. These mostly not guarding.

left.

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1900-2000.

No activity.

Ridds have not been worked since I left earlier. They are all dumped with holes or pits such as a *Citostomus* makes.

6.64 (air therm).

Sept. 14, 1950 #2

N.M. Catron Co. Rio San Francisco 2 miles  
above Frijoles Hot Springs.

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WVK.

Agoria a. chrysozoster G.

719 large yg - ad in breeding condition

± 21-69 m S.H.

Tiaroga cahitis G.

49 juv - ad. 24-54 m S.H.

Some in breeding condition.

Mada fulgida G.

2 ads. 45 m S.H.

Rhinichthys oculus yarrovi VKE

1 ad 58 m. Breeding color.

Pantostes clarkii, Calostomus insignis

Not scored. Very many released in field.