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The *Cynolebias whitei*

This is a rather new species to aquarists. The first stock arrived at "Aquarium Hamburg" 1956/57 (?) from Rio de Janeiro, caught by Griem near Capo Frio, which is the cape east of Rio de Janeiro. Later, new stocks from the same place came into the USA, but in my opinion the first USA stock were raised in Hamburg. The species was discovered by General Th. D. White (US Air Force) also near Capo Frio. It was described by G. S. Myers in 1942 and named for the finder. My stock came in as eggs from Jack (Scheidnass) summer 1958. This species was also described by Dr. W. Ladiges as "*Pterolebias elegans*" 1958 and this name is still in use among aquarists.

The first look shows us a Cynolebias which looks like a Betta splendens in the high development of the dorsal and in particular the anal fin. Male grows up to 7 cm., but females always are shorter, normally not above 5 cm. The ground coloring in lighted tanks is a pale olive with reddish tint in the male, in particular in the dorsal and anal fin. Sometimes you may find some irregular dark areas distributed over the body, more rarely the fins, of the male. In darker tanks the male is much darker and the ground color changes to blackish green, but still with that reddish tint. The sides of the males do not shine as in the "nigripinnis" and in particular the "bellottii." Only the caudal fin has many brilliant bluish green spots. Males have no markings or vertical bars on body, only at the lower edge of the anal fin there may be a handsome, broad orange in most males. The photos in "Tropical Fish Hobbyist" Sep. 58 show a young male which has not already got the full development of anal and dorsal fins. The picture in DATZ Mar. 58 shows a bigger male, but also this male possibly has not finished the development of the fins. The female has one or more big and very conspicuous blackish spots in the sideline just above the ventral fins and one or more blackish spots at the root of caudal. She also has some faint greenish crossbars on the sides.

The species is only caught in the coastal lowlands near Capo Frio in the State of Rio de Janeiro. In the "TFH Sep. 58" the Brazilian zoologist Antenor L. de Carvalho (Rio de Janeiro) gives a very interesting picture of the place where he collected the "whitei". He also gives some important facts about the breeding etc. "During the months of October 1955 he searched along the Amaral Peizoto Highway for the pool in which General Thomas D. White found the fish Myers named in his honor, Cynolebias whitei. It was difficult to find the particular pool because there are hundreds of pools along this highway, each fitting the description for the habitat of Cynolebias whitei. Finally he found the few pools that contain *Cynolebias whitei* (at the end of the month of October) located close to Sao Pedro da Aldeia,

State of Rio de Janeiro. At this time of the year the particular pool from which I selected the specimens of *Cynolebias whitei* was about 25 feet in diameter and about 2 feet deep in the center. The shape of the pool was almost circular and the water was muddy brown in color. By taste I could notice a trace of salt, so I assume that the water was slightly brackish. On the bottom of the pool was 10 inches of fine black mud, with a texture as soft as body powder. There was no vegetation in the pool at all except for a few water lilies in the center and some grass about the edges of the pool. We were able to use a seine in this pool and we captured *Cynolebias whitei*, *Callichthys callichthys* and some *Poecilia vivipara*... Many more females, than males in the pool. All females were filled with eggs and all specimens were adults. The Jan. 59 issue of the same magazine gives (Axelrod) further information: ...majority of tank raised "whitei" are females...

The mean annual temperature in this area is 23 C, the coldest month is July which was only 20 C and the warmest months are January-February with the mean temperature of 25 C. The extremes are 10 C and 37 C. The shallow water and the shadeless surroundings may give rise to high temperatures in the pools at midday and much lower temperatures during night. The annual rainfall is 1100 mm, with most rain in the months from Nov. to May. Driest month is Sept. with "only" 45 mm.

My stock of "whitei" were very quickly growing at temperatures about 22 C and after only 1 to 1.5 months they mature if plenty of food is offered. Compared with "nigripinnis" they are rather peaceful fishes. Males establish something like the usual "pecking order" among killies and the smaller ones avoid the bigger ones that do not chase the smaller ones. My big males, which were kept with each 4-5 females were also very peaceful to the females and no fish had bitten fins. My males were much shyer than my females, which never hid themselves. The stock took all food offered, also lots of dry food, even when there were plenty of daphnia in their tanks. They eat lots of food and the spawnings are plentiful. There were no disease problems and not a single one died. They were kept in the normal killie water (300 ppm of NaCl, peat on bottom, slightly acid to neutral reaction).

Carvalho described the spawning act in tanks. "First the male swims close to the bottom, inspecting it carefully. The female follows closely behind him. From time to time the male stops suddenly and makes a peculiar rapid up-and-down movement with his body just as though he was shaking his head. Then he proceeds with the inspection. The female follows closely by during all this time. Sometimes she is on his left and at other times on his right side. I have even seen her take a nip at his anal fin. When they find the right spot, the male puts his head in an oblique position, about 30 degrees from vertical, head down. Then a very interesting thing happens: the female comes close to the male and puts her head between his body and pectoral fins, resting her mouth against the base of his pectoral fin. Then, with a rapid synchronized movement, the male flicks his tail and the pair penetrated deep into the sediment. Immediately after diving both laid down in the interior of the sediment, and with a rotating motion the male pushes the female completely into the mud so that she disappears from view. This position is maintained for 3 or 4 seconds after which they return to a normal position and begin to look for a place to deposit another egg. As the pair emerges from their spawning site, the gravel falls back over the hole in which they spawned and completely covers the egg which was pushed deep into the sand...

The egg is a little smaller than the eggs of "nigripinnis" and "bellottii" (Carvalho measured 1.25 mm) and 1.25 - 1.35 mm in diameter. They resemble "nigripinnis" and "bellotttii" in the surface pattern of the

membrane. Carvalho described this pattern like this: The membrane is covered with tubercles of two distinct sizes. The smaller tubercles are located evenly between the larger ones. Carvalho also found that the male would not dive unless the female assumed the position with her head between the pectoral fin and the body of the male. The pectoral fins of the males have certain peculiarities on the inside face. Counting from top to bottom, the first 8 rays of the pectoral fin of the male are provided with special tactile papillae which indicate to the male that the female is in position and he can begin his dive. The membrane of the egg adheres pieces of peat, but when you wash out eggs from coarse peat you always will find eggs with very little peat on the membrane. This is possibly because the adhering power decreases soon after spawning. On shallow water without any peat, the eggs show big embryos with pigmentation and blood-circulation after 3-4 weeks at 23-26 C. Only very few "resting eggs," in some broods there are none.

Here are the data of the eggs I got from Jack. He had the pair end of June 58.

- First spawning from 25 June to 07 July, arrived here 14 Aug. After 24 hours I lifted out 8-9 fry. No belly-slides. A few more hatched the next day.
- On 29 Aug. I thought I was able to sex them. Later on they matured to 5 males and 15 females. The peat was re-dried on 16 Aug.
- Second watering on 16 Sep. gave another 5 fry.
- On 12 Oct. I took out my first spawning of the young fishes.