WHITESBOG

by Bruce Gebhardt, Philadelphia, Pa.

The best areas in which to collect are those with a large variety of waters close together. In fall of 1982, John Eccleston and I found an area unusually blessed, in Burlington County, N.J. Its name is Whitesbog. There's a dot on some road maps with that name. The place has significance in agriculture; that's where the modern commercial blueberry was developed. In the right season, in fact, the place abounds in blueberries or huckleberries; collecting them might be even more satisfying than collecting fish.

As one approaches Whitesbog from the west, there is a sign pointing to a nature-study center of some kind, and there is such a building. According to some signs, occasionally posted but usually absent, some or all of the property may be a state forest. No matter which or what, nothing excludes the collector. The entrance to the site is on County Rte. 530 about ½ mile west of its intersection with NJ Route 70. If that doesn't help to locate it on the map, find Browns Mills, then go east a couple of miles. If that town isn't on the map either, Rte. 530 parallels the southern border of Ft. Dix; in fact, the collecting site borders the fort, as we shall see.

Coming west on 530 from the Rte. 70 intersection, one crosses a bridge over a stream. Just past it, turn off the road to the right--i.e., to the north side of the road. There's a roughly cleared parking area.

The northbound creek crossing the road meets a southbound one head-on in the parking area; at the confluence, the water spills west over a dam. Fifty yards downstream, there is an auto bridge. Under it, on its downstream side, there is yet another dam, below which the water courses off west through deeply cut banks. The unusual collision of streams was engineered during the site's days as a berry plantation.

Below the Confluence

In visits by John and me, we began collecting at the auto bridge 50 yards downstream from the confluence, working upstream for maybe 25 yards, above which the water is too deep and the bottom too muddy. At my usual point of entry into the stream, just above the auto bridge, the water is generally about a foot deep, at least in fall. In spring flood, the water isn't that much deeper--just a lot faster. The bottom is muddy sand when flow is slow; there's no mud in flood. As the stream pours down from the dam, there are many floating plants near the banks. These include one or more species of Foxtail (*Myriophyllum*) and Bladderwort (*Utricularia*). There can be no doubt that the water is quite acid and soft.

The area just above the bridge has often been a good place to catch Swamp Darters (Etheostoma fusiforme). They average larger here than in most of South Jersey--2". This may reflect geography less than it does the fact that the fast water encourages only large members of several species. Smaller specimens are uncommon. An attractive feature of these darters is that many have red-orange fins. (On this point, see "Fishes of Southeastern Massacusetts," AC, Summer, 1980) Swamp Darters are on my "To Spawn" list, but I may not get to them for some time; anyone who wants to beat me to it now knows where to find breeders. (See Addendum.) Swamp Darters should be easier to spawn than many other darters, which come from cold, fast water; Swamp Darters are frequently found in stagnant water.

John and I both use one-man seines--¼" mesh, 4'x4', with poles at the sides. The way to catch these darters here is to observe some scudding along the bottom, then sweep the seine along the bottom in their general direction, making sure that the seine's bottom is on the creek's bottom, as it always should be. Swamp Darters must be removed quickly from a seine; they're so skinny that they easily slip through the mesh if given any time.

After catching darters from bank to bank, John and I shifted to a new system as we moved upstream. Nothing has ever been found in the middle above where the darters hang out. We each took a bank, then worked upstream, netwidth by netwidth. We would thrust the seines low into the water plants, then up into the overhanging plants.

Darters become less common as one ascends the stream. A few good-sized (to 4") Pirate Perch (Aphredoderus sayanus), of the migrating anus, can be taken in the plants in any series of passes. Present in larger numbers are Eastern Mudminnow (Umbra pygmaea), 2½-3". The dominant species in the species, numerically, is the Yellow Bullhead (Ictalurus natalis). Yellow Bullheads--and probably other bullheads too--can look yellowish in certain conditions--e.g., frequently in aquaria. In nature, at least in dark water, they are gray or brown, no more yellow than Black or Brown Bullheads (I. melas & I. nebulosus). They are distinguished from the other two species by their white chin whiskers; the other two species have dark ones. The Atlas indicates that Browns can be found in South Jersey, but not Blacks; Yellows are all I have found. The bullheads here are 3-5", with a few "giants" reaching 7" or more. As noted, the water becomes deeper as one moves upstream, and it seems that larger bullheads are found as one moves up as well. That seems logical, and it is my recollection, but I have kept no exact statistics. The first netful of bullheads may warrant some interest, but that interest soon fades. Each netful brings up three or four bullheads and usually little else. The reason for sticking to the methodical upstream seining is that one finds jewels here now and then.

Centrarchids

The Banded Sunfish (Enneacanthus obesus) are few. My first visit produced only one, a male, but it was the most

beautiful of 1982, and yielded some of my all-time best photos of the species. Let me describe that fish. The head is brilliantly streaked with metallic aquamarine. There are vertical bands of metallic gold- and green-spotted scales, each band two or three scales wide, against a rich brown background. There are also spots throughout the caudal peduncle, the dorsal fin, and a few other areas. Flaws in the photographed fish: splits in the dorsal and caudal fins. A flaw in the photographs is that the fish is resting on the bottom like a sunken galleon; thus, the anal fin--often spectacularly streaked in male obesus--is obscured. Because of the darkness of the water and the slowness of the film, the shutter speed was about 1/8 second. That's very slow; moving, off-the-bottom photos didn't come out. (I kept dozens of "almost" slides; if you'd like to see what this fish can look like, write for one.)

Dazzling as the fish is, the water in the photos, which were taken at streamside, may be even more interesting. It is actually orange, an extreme variation on the amber color common to the region's water. The fish's color doubtless evolved to make the brightest, contrastiest display in just that water. In fall , the water at this site is often rather dirty; in spring flood it is clear. I've hauled back gallons of it to Philadelphia, where the tapwater is hard, alkaline, and certainly un-orange.

The only other centrarchids yielded by the spillway have been some prodigious Mud Sunfish (Acantharchus pomotis)--big enough to eat, but probably as tasty as their name indicates. We didn't eat any, but they made me eat some of my May 1982 Lateral Line cover story. In my initial visit to the site, I caught one M.S., but it was my all-time champ, a good 7½"; my May article, based on several published sources, allowed 6". Probably even bigger specimens can be found in southern parts of the species' range. I let The Champ go--to my subsequent regret, since I later caught my second-biggest specimen--a probable female, whereas The Champ was a probable male--at another site about 30 miles southwest.

How to sex them? This is all speculative, but some normally show sharply defined horizontal stripes (black on brown or brown on yellowish brown); others show few, dim, or no stripes. The catch to this theory: at times, an individual specimen can go from stripes to unicolor or vice versa. The theory rests on the usual color of individuals.

When John visited the site, he caught two five-to-six-inchers in the same netful, though we caught only one or two others in the spillway. One was well-striped, the other was not. A breeding pair? Again, I regret releasing them, which we did.

Besides underestimating their potential size in the 1982 article, perhaps I unduly demeaned their color. The big "males" (the striped ones) bore their dark brown horizontal stripes on a mustard-colored background. The stripes wind interesting

patterns on the top of the head and in front of the dorsal, actually reminding me of Cichlasoma salvini (far-fetched comparison, to be sure).

I have found smaller specimens of this species in the past to be less aggressive than the bass which they resemble. Larger specimens than usual, however, kept temporarily, have exhibited downright nasty dispositions.

On each of my visits, after my collecting around the area, I've returned to the clearing near the road for photography. I've been beset by inquisitive, vaguely sinister locals who park there to drink. It's also disconcerting to have a 200-lb. dog moseying around when you have delicately balanced photo tanks set up all over the place.

More than Meets the Eye

While photographing after my first collecting trip, I'd noticed a number of vehicles continuing down the road crossing the auto bridge. They disappeared into the woods north of the spillway, to re-emerge some time later. I resolved to do likewise on a subsequent visit. I was on to something.

Back in the bush is the rest of the former cranberry and blueberry plantation. (Some parts seem still to be cultivated in blueberries.) The state-forest part, perhaps due for "development" as some sort of park, consists of a gridwork of dikes enclosing huge, roughly quadrangular cranberry bogs. On each dike is a one-lane sand road. Each quadrangle contains a different type of biotope. In some, there are lakes, too deep for either wading or cranberries. Others are still productive cranberry bogs. In yet others, there is little if any water; or predominantly sphagnum; or half sphagnum, half water; or 2-6" of clear water and few plants; or sandy bottom, even sandy beach. Moreover, outside the "paddies," canals, streams, and untamed bogs sprawl through the surrounding woods. It would be hard to devise a greater diversity of bog-area biotopes.

When one has driven the dikes often enough, certain features are remembered. For a while, though, it is a confusing labyrinth. It once took me about a half-hour to find my way out. I was worried because there are other hazards, principally sand traps. The roads are so sandy that bogging down is easy, especially in intersections and in remote areas. Pulling off on the side of the road to collect is perilous; the shoulders are invariably very soft, even when overgrown with grass, and firm-looking.

Early on a weekday morning, one can simply leave the car in the middle of a road to collect or explore; there is little chance of other cars wanting to pass. Actually, in the remoter areas, there's never much traffic. On the other hand, there's nobody out there to help push your car out of a sand trap.

The other major drawback of the site is auditory. The further you go north--away from 530--the nearer you approach Ft. Dix. One of the roads out of the labyrinth comes out

across the street from the M-16 firing range. Thus, it's sometimes noisy out on the bogs; it makes the seiner uneasy. The "quality of the wilderness experience" is surely diminished. When the guns are still, being out on the bogs with no one else around is exhilarating.

Back in the Bogs

In the quadrangles so far sampled, the most common fish species is the Banded Sunfish (Enneacanthus obesus). John and I have caught only a handful of Blackbanded Sunfish (E. chaetodon), one of which had beautifully red ventral rays. No Bluespotted Sunfish (E. gloriosus) have turned up.

The Bandeds in the bog ponds have dark, often dark green backgrounds, matching the color of the sphagnum that chokes much of the water. (Trying to raise a seineful of the moss, which holds as much water as a sponge, is not easy, requiring the kind of isometrics that cause heart attacks. Besides the sphagnum, plants include pond lilies, bladderwort, foxtail, and in the shallower parts normally terrestrial grasses.)

In the most thoroughly fished "quad," we have found both regional species of pickerel--the Redfin (Esox americanus americanus) and the Chain (E. niger). The Chain is South Jersey's main indigenous game fish; in fact, a world record for either length or weight once came from a little west of Whitesbog. People fish the various quadrangles for Chains, known locally as Jackpike or Pike (there are no Northern Pike, E. lucius, in the region). In 1982 and 1983, I've spent a dozen days on South Jersey's lakes, ponds, and streams. Often there have been anglers. I've yet to see one get a nibble.

Small Chains (4-8") have amorphous coloration, vaguely greenish or tan with lighter and darker markings. As they grow, they develop chainmail patterns--dark green links enclosing yellowish areas. There is often red or orange in the fins. Redfins about 8" long seem to be adults. They too can be very attractive, with dark, sharply defined U's, C's, and side-by-side vertical blotches on a lighter background, and red or orange in the fins. Redfins' snouts are neither as proportionately long nor as pointed as the Chains'.

As to other species, Mudminnows and Pirate Perch are also found back in the bogs. Aside from Bluespotted Sunfish, the only expected species we have not yet found back there --or at Whitesbog generally--is the Tadpole Madtom (Noturus gyrinus).

At a site like this, focusing purely on fish is tunnel vision. Herons, egrets, and kingfishers ply the same trade as John and I did. Back at the falls, while photographing

in 1982 and 1983, John and I have seen lizards along the spillway banks. They are the first I've ever seen so far north. They are too wary and nimble to approach closely, but a few marginal photos at least document the sighting. They have bright blue patches on their throats. Other reptiles sighted include Painted and Musk Turtles and water snakes.

A botanist as well as a zoologist could go bananas here. Most interesting flora to me are floating islands of sphagnum supporting established plant communities, including little red carnivorous sundews and plants with yellow-centered, bright pink flowers. Many of the quads contain ponds abloom with white and pinkish white water lilies. When I first visited this site, early in the fall of 1982, I naturally didn't have my camera with me to record all of this flowering. The next week I brought one down, but the pink flowers I wanted to photograph had withered. By that time, the dominant flower was a pale purple aster. Each blossom was the goal of two or three jostling bees, fighting frantically to collect what they had to collect before winter came. I knew just how they felt.

ADDENDUM: In 1983 visits, John Eccleston and I found virtually nothing in the spillway below the confluence, even the darters which had so reliably appeared near the bridge in 1982. This may be because spring floods flushed out the stream. Therefore, no guarantees in that part of Whitesbog.