Then there's the issue of shad as a school. It has been my experience that shad are unlikely to hit lures when they are in small bunches, but much more likely to do so when in large congregations. On occasion, I've put a side scanning sonar on a tripod and found that the shad hit well until the pods of fish thin as midday progresses. I asked John whether this feeding behavior mimics that of shad in the ocean.

'Shad captured in a trawl net often all have a single type of food, indicating that they have been feeding on a concentration of a single prev source. This indicates that they are likely feeding as a school. They can feed in one of two ways: either as filter feeders, passively straining food with the gill rakers, or as particulate feeders, actively snapping at larger, visible prev. In the ocean shad feed from the bottom to the surface, depending on the distribution of prey. They probably do not feed, as they have been observed to in rivers and as young, on insects above or immediately on the surface of the water because there are no 'hatches' of insects in the open ocean. Insects exist in the open ocean, but mostly as strays from terrestrial sources."

All of this begs the question of whether migrating shad actually benefit from eating, and whether those that eat even a little bit along the route have improved



chances of survival and a return to the ocean.

"I think the most interesting question of shad feeding during the spawning migration is whether this represents true 'feeding' from which shad derive energy. or whether it is solely an instinctual response as it is in Pacific salmon. After following fish during the entire course of the spawning migration from the ocean to freshwater. I found that shad fed in the coastal ocean, and throughout the brackish estuary. Though the intensity of feeding did not appear as high as in the natural oceanic feeding environment, the feeding appeared directed and of a higher level than would be observed if they were just passively filtering water or instinctually reacting to prey. Unlike salmon, shad retain the ability digest and assimilate food during the anadromous migration, and I believe that this limited feeding may serve to mitigate the tremendous energy expenditures experienced during the spawning migration."

Much of this discussion, while based on field data and observation, is still just speculation. But there is enough evidence of all kinds to indicate that shad aren't an unsolvable puzzle, and that they may indeed be selective, targeted feeders, more like trout than Pacific Salmon. There's likely a reason shad don't like eyes, that the shad dart shape is effective, that big tails can be a turn off, and that certain colors work when others won't. Fly tyers in particular should consider making flies that are more prey specific to improve their catch and entice the all-too-common "fish that won't hit" into taking your fly. I have been tying prev specific flies so for several years, with mixed but generally positive results. Some flies — like the simple pink, roundheaded Zsa Zsa — were devised in ignorance, but worked so effectively and often, and to the exclusion much else, that there had to be a reason. And as it turns out, the resemblance of the Zsa Zsa to a copepod is quite close. So there's room for experimentation and discovery in shad fishing. Take the initiative and try tying up some plankton patterns!

Brian M. Wiprud is a New York City angler, fly tyer and author of the novels Sleep with the Fishes and Pipsqueak. Many of his past fishing articles and fly patterns are available on his website, www.wiprud.com.