

Couch  
1995

## MUSSEL COLLECTING IN KANSAS — Welcome to the Real World

by Karen Couch

Set Dorothy and Toto aside for a while and consider Kansas anew. Stand waist-deep in the middle of a wheat field on a hot, sunny afternoon. Or watch massive combines work meticulously back and forth over a sea of gold, and then play in the straw left behind — finding an occasional box turtle. See cows winding their way down narrow, well-traveled paths to the watering pond. Experience these pleasures and you will know a different Kansas, a vast natural playground for a child.

Growing up in Kansas, I spent half my childhood in this outdoor wonderland and for a few years my family lived where there was a pond right in the back yard. We were also a mile or less from the Neosho River. Seldom did I go to the river, and never alone. Mom and Dad felt it was too dangerous a place for children. The pond was easily accessible, and there was always something interesting to see and do. Fish, turtles, frogs, tadpoles, snakes, all sorts of insects and snails. I'd find a few mussels in the river and one or two in the pond when the water level dropped. (Who knows what ever became of the shells — certainly they spent a few years in a box under the bed — now, I wish I'd saved them. But from the age of eight on, my interest was in SEA shells. I really thought the river mussels were all alike.) Once I spent 20 minutes watching a brilliant green dragonfly emerge from its nymph wrapping, spread its crumpled wings to dry into transparent lace, and flit away, only to be devoured by a swooping hungry bird within 50 feet. Now THAT was a lesson in the reality of life and death. And once I left a bucket of 3" bluegills together with several 1" baby crayfish. Two hours later the crayfish were nowhere to be found — the fish had enjoyed a crustacean feast. Things never seemed the same after those shocking disappointments. And yet it was a real privilege to witness firsthand some fascinating things others only get to view on the Discovery Channel.

With the passage of time, some things change and others remain the same. The kid who played in the pond is 20 years older now. Endless days of innocent exploration are gone. This story is about the present, and, given my background, it is with a real feeling of loss that I must describe the current situation, particularly with regard to the mussel population of Kansas.

It is well-established that wildlife has been in trouble for decades, but the children of 20 or 30 years ago were not aware of the danger. Even now, with all the publicity about the

devastation of the rainforest, we may not think about what is silently happening in our own back yard — that it is much closer to home. Take notice, the trouble is upon us.

My closer examination began when I met a man at the Kansas State Fair who is not an environmentalist or a biologist, but a TV News anchor from Wichita. He does weekly 3-minute stories of Kansas people with unusual interests. He wants to know what makes us tick — what compels us to do or like certain things. He decided he wanted to do a story about me as one of the few serious shell collectors in landlocked Kansas. Knowing how he did other stories, I guessed he would not be interested in devoting the whole piece to marine shells, but that he would want to include something local. It had been a very long time since I had been out looking for mussels anywhere. Thoughts of doing something with them would occasionally come to me, but somehow any mussel project got put on the back burner. Now seemed like an excellent opportunity.

My husband and I know two families who live in the Flint Hills, and have a creek on their property. I asked if they ever saw any mussels. Yes, they said, three or four different kinds, but not as numerous as 40 years ago. (I wondered why.) They said we could go out any time we wanted. It sounded like fun, a different kind of diversion.

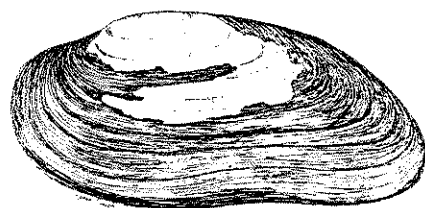
The famous Flint Hills of Kansas once supported one of the healthiest mussel populations in the state. This 40-mile wide strip of beautiful hills stretches from Nebraska to the Oklahoma border, and is characterized by open grasslands with few trees, numerous limestone outcrops, and slopes of flint fragments. West of the Flint Hills, particularly to the southwest, Kansas becomes notably flat — Wizard of Oz country. Our trip was to Chase County, almost exactly in the center of the Flint Hills. Cattle ranches are typical of this area, with only a few pockets of farming. (Later I learned that this is why the mussels are faring slightly better here than in other parts of the state.)

With the 45-minute drive behind us, we walked the short distance to Cedar Creek. This creek eventually empties into the Cottonwood River, one of three main rivers which drain the Flint Hills. It is fed by several springs, one of which we visited on a later trip. The creek has some areas with so little bank that it can be driven over (or through). Other spots had banks cut so deep one had to follow the cow path down, not walking but sliding, feet first, rear dragging — as much as 20 feet down to water's edge!

October/November is an excellent time to go collecting. The water is usually low, noxious weeds are at a minimum, flying insects are scarce, and raccoons have had all summer to dine on mussels and scatter the cleaned shells on the banks and riffles. Filling two grocery bags half-full took little effort — but of course mud on the shells added to the weight of the bags. I picked up the mud-covered shells, thinking all the time that there were only three or four species. My husband walked along pointing out shells — he was not about to spoil my fun by assisting me in collecting. We found all sizes of shells, some with pink and purple nacre. We had a rewarding and fun day, and hardly even got wet. Worn out and in need of a bath, I hauled my treasures home for soaking and scrubbing.

The several authorities on cleaning shells all agree that a long, unrushed soak and a good, stiff brush help immensely. They did. And the shells were all dead, so little or no flesh remained to be removed. Now that all the shells were cleaned, it became obvious that I had more than four species. Eleven. And no books on freshwater mussels in the home library. Nor in the public library.

12 Ventura Lane, Olathe, Kansas 66061-3057

*Elliptio dilatata* (Rafinesque, 1820)

SHELL LENGTH: 127mm

*Fusconaia flava* (Rafinesque, 1820)

SHELL LENGTH: 113mm

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## MUSSEL COLLECTING IN KANSAS

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Around the first part of November, the nice news man from Wichita called me to do the TV piece. Sure enough, we went to the creek. He was such an easy person to talk to — I wondered later if he learned more than he wanted to about shells. It was enormous fun. This series airs all over the state, so everyone who watched saw me collecting mussels. And you know what is often said about hindsight. I'll explain shortly.

My full attention now on mussels, I decided I needed to get my finds identified. Instead of blundering, I called upon a good friend in Missouri for help, which she excitedly gave. Not only was she able to ID everything, but she also pointed out to me the extraordinary size of some of the shells, as well as other interesting and unusual characteristics. Well, that really got me going. We had to go back out to the creek. (Who needs a beach?) The weather allowed for one or two more trips in which I found an additional three species — a total of 14 in a half-mile of creek. If at this point you are thinking this is mussel-collecting heaven and are packing your gear, read on. You are in for a surprise.

My friend in Missouri sent me a couple of books and put me on the track of other useful publications. Before long, I was accumulating and reading everything I could lay my hands on about freshwater mussels. I was able to identify my three "new" species myself. Wondering if there might be some recent publications on Kansas mussels, I called the Kansas Department of Wildlife and Parks Operations Office in Pratt, Kansas. They kindly sent me some very interesting and informative survey reports done in 1992. I read that some of the 40 or so mussel species in Kansas are considered endangered, threatened, or in need of conservation. I also learned why this list exists in a state where, I innocently believed, "It can't happen here." Four of my Cedar Creek shells were on the "Species in Need of Conservation" list, or SINC for short. Hmmm... The 1962 Murray and Leonard *Handbook of Unionid Mussels in Kansas*, still available from the University of Kansas in Lawrence, also proved useful, even though the nomenclature is outdated.

In the meantime, thinking I had gleaned all the pertinent stuff from the KDWP literature. I looked at the names of people who had helped with surveys. One was a Dr. Don Distler from Wichita State University, only 30 minutes away. I called the university and, sure enough, he was still there, in the Department of Biological Sciences. Dr. Distler was super nice on the phone. I told him that I was interested in mussels, that I had some, and I inquired if he would like to see them. Definitely, he would. A week later I was at the lab with my box full of shells, and we talked about mussels for three hours. He liked my shells. What I learned was most profound. He impressed upon me that mussels are indeed in trouble — we'd better enjoy them while they yet remain. Enjoy and study, not exploit and kill. At least I knew my conscience was clear on that one — I never did kill a mussel, not even to look for pearls. It saddened me to know that these unique creatures were having serious problems in what appeared to be a relatively unpolluted area. The 8" *Lasmigona complanata* and 6" *Lampsilis cardium* may become rare finds indeed. Doc, as I later came to call him, had been working on an idea for writing a specific piece on Kansas mussels. He needed illustrations for it. What great timing! We've been busy with it ever since. Doc told me when checking out the mussels in the creeks to pay special attention for evidence of recruitment, that is, juveniles, and not just adults.

But backtracking a little, let's have another look at those Department of Wildlife and Parks survey reports. I have the unfortunate ability to unwittingly open the proverbial "can of worms," no matter what. When I reread the survey reports I

noticed mention of a scientific collecting permit. Permit? For KANSAS? I called the KDWP office in Pratt again. Yes, you certainly do need a permit. Even for dead shells? Yes. Okay, no problem, send me the application. Received. The completed application must be signed by the conservation officer of the county of residence. Aware of our impending move to a different county, I waited until after we were moved and settled. (Doc was upset about the move, but we decided we could still do the work. He encouraged me to make records of what I find where — he wanted to know.)

The only information I was given regarding the conservation officer of my new county of residence was his name and telephone number. No address, but they said he was good. It turned out to be his home phone number. That really helps a person get off on the wrong foot like nothing else can! No way you can redeem yourself from that one. Anyway, the officer gave me the details on filling out the application and provided an office address to send it to. I told him I had already collected mussels the previous year, not aware of the need for a permit. He asked me if they were all identified, and said to send him a list of them along with the application. At this point, most of you might be thinking it was stupid to say anything about having the shells. To that I say, anyone can sneak — it's far more noble to be honest. In this instance, it certainly helped to be honest.

The application required specific information: who I am working for, what counties I plan to collect in, what I will collect (common names only), where the shells are to be housed. In other words, you have to know where you will be in the coming year and what you will find. I filled out the application to the best of my ability. The conservation officer also sent me a list of all the endangered and threatened species and those in need of conservation. The list was composed of common names which I had to translate into scientific nomenclature. Six of the Kansan mussels are endangered, four are threatened, and another twelve are on the SINC list. I guessed I should leave any of those off my application. Correct. I made it perfectly clear that I would only collect dead shells.

After he received my application and list of Chase County shells collected last year, the conservation officer called me. Among other things, he asked me if I knew that four of the species on my shells-collected list were on the Kansas SINC list. I told him that at the time I collected them, the answer was no. He informed me that it is a violation of the law to collect these. Ignorance is no excuse. Something about possession. He said he would have to talk to his supervisor as to what would be done about it. Okay, I said, let me know.

Two or three weeks later, he called me again. He said I had to turn those shells over to him. Today. With directions on how to get to his office, I packed my shoe box with the offending pieces of biodegradable calcium carbonate and took them to the KDWP District Office in Lenexa, just up the road. The conservation officer was waiting for me — uniform, badge, gun, the whole thing. Intimidated? Not exactly — I was still too numb from having just moved, too grief-stricken over leaving my friends behind, and too overwhelmed with the culture shock of leaving a town of 16,000 and moving to a city with a population of 120,000 to be too upset by this.

The officer looked over the shells, but I had only the Latin names of the shells on their labels. I showed him which was which. (It would be unfair to expect law enforcement personnel to use anything but common names, although it might help bridge any gap between them and the biologists/researchers if they could learn to make use of the Latin.) He wrote me a ticket. Misdemeanor violation. Just a warning — no court appearance. He took my specimens of *Fusconaia flava*, *Lampsilis teres*, *Strophitus undulatus*, and *Truncilla donaciformis*. They would be

used in an upcoming ID clinic. I said good, they better not end up in the trash. He said he wouldn't let that happen. He also stated that because I was being so up-front, honest and cooperative, he would approve and sign my permit application. His supervisor had seen the TV thing earlier and wondered if I was the same person. They could have come after me any time they wanted.

That part about possession bugged me. What about the shells Doc wanted to loan me from the university's museum for the illustrations? The conservation officer had already called Doc's secretary to see if he really knew me. Doc had to write a letter explaining what we were doing and that T, E and SINC species would be included in the work. A letter came back from the operations office in Pratt giving us their approval and blessing. My permit arrived at the same time, allowing me to collect legally. A report form of what was collected and where must be mailed in at the end of the year. We conchologists already excel at keeping good records (let's hope!), so this is not too burdensome a requirement.

The conservation officer had also made sure I understood that in order to collect only the species allowed on my permit, I would have to do field identification. That makes sense. A difficult task, but not impossible. From their standpoint, it's narrowed down to twenty species. Not really. Remember, Doc wants to know what I see, to assess range and status. The biggest problem with not being able to collect any species on the Endangered, Threatened or SINC list, even of dead shells, is that biologists will have no voucher specimens. Past instances of lacking voucher specimens have left scientific data and reports subject to question; you can say you saw such-and-such, but without the actual shell to back you up, credibility becomes hazy. Even the experts can make a mistake. With as much study and research as I could muster, I mentally prepared myself for the challenge. Easier said than done. Leaning on the tailgate of a pickup truck with books and shells makes for a humbling experience. But I asked for it.

We went to a creek in Franklin County. The farmer was nearby burning some brush. I told him what I was doing; not only did he grant permission to collect, but he pointed out where the riffles were. Middle Creek, as it is called, runs into the Marais des Cygnes River (The name means "Marsh of the Swans." Did not see any swans.) The creek contained a few species not found in Cedar Creek. Notably distressing was the fact that only very dead, worn shells of *Elliptio dilatata*, *Fusconaia flava*, and *Lampsilis siliquoides* could be seen. All three of these species are on the Kansas SINC list. This particular area is extensively farmed and field run-off is blamed as one of the major causes of declining numbers of mussels.

In fact, recent news reports concerning the Kaw and Missouri Rivers (and others) in northeastern Kansas strongly suggest these rivers are dying. Significant quantities of the chemicals atrazine (from farming) and chlordane (from residual termite spraying) are being found. Warnings are issued not to eat any bottom-feeding fish from these two rivers more than once a week, or at all. How sad. You know it's getting serious when you hear things like this. The mussels in those rivers may well be gone now. Because they are so sensitive to water quality, mussels are considered very important bioassayers of the environment. They're in trouble, we're in trouble. People like me are hardly a danger to these animals. It becomes increasingly apparent things are not like they used to be.

Now I'm in the process of trying to undo any damage or wrong impressions about mussels the TV piece might have caused. I have found that people in Kansas are either totally oblivious of the existence of these seemingly insignificant creatures, or they think they should be shucked for pearls. At least I didn't encourage that. Who knows how many are lying around in someone's yard, carried home from a fishing trip and

admired for their beauty. Or how many occupy a shoe box under a child's bed. There have to be some that became a convenient soapdish in a few bathrooms.

Having experience in making decent shell exhibits, I am in the position to put together a top-notch educational exhibit for the Kansas State Fair. What better place to educate the people of Kansas? The Kansas Department of Wildlife and Parks already has a wonderful exhibit with other wildlife there. Aquariums containing live native fish, and turtles and snakes, another section with mammals and birds (taxidermy). Quite interesting. Mussels are ignored. Of course, in order to equally represent every species of wildlife in Kansas, a museum is obviously the more appropriate place, and there are a few good museums at some of the universities.

However, people who attend the State Fair are not necessarily inclined to bother with museums. If the general public is to comprehend the fact that the mussels are in trouble and are protected by law, then there is a definite advantage in mussels being exhibited under the auspices of the Department of Wildlife and Parks, rather than sitting in an isolated museum case with no explanation. Unfortunately, not only are they not seen at the fair, but you never find them mentioned in the literature or brochures produced for public information on fishing and boating regulations. At least I haven't seen them mentioned. How is a person to know that these animals are protected by Kansas law?

Actually, a commendable amount of work has been done in Kansas on behalf of the mussel. Reports have been published for years; they just aren't made available to the general public unless requested. Other states have information published specifically on mussels, but there again, I have it because I knew of it and requested it. A while back I was standing in line at a local lumberyard. The lady in front of me had on a shirt with words on the back that I will never forget. It said, "In the end, we save what we love, we love what we understand, we understand only what we have knowledge of." Along with stream dewatering, impoundments, siltation, pollution, and intense commercial harvest (yes, that's done here too), ignorance has to be counted as another of the mussels' enemies. At one time, I too was one of the ignorant.

Back to the State Fair exhibit. As much as I think it would be a worthwhile project, and I seriously considered it, the obstacles which would have to be overcome would make it a major hassle. How so? In my contact with the conservation officer, I was made aware that there are strict laws and regulations regarding the transport of mussels. In making inquiry about the specifics, I found that transportation is possible with permission from KDWP. Requesting permission involves writing a letter stating the purpose, quantity, and species, and details on the destination, etc. That doesn't sound too difficult, does it? Here's the problem: If the request is approved, permission to transport is granted only for the shells collected in the same year as the permit allowing for their collection. In addition, the transport must take place in that same year as well. Ridiculous, you say? Maybe so, but not to them, because it's the law.

Imagine trying to do any sort of worthy educational exhibit just with mussel shells collected legally in one year. All the really cool stuff is off limits and almost gone anyway. For a State Fair exhibit, I could borrow shells I don't have, but there again, more paperwork. I don't have time for it right now. Maybe later. These animals are almost smothered in silt and paperwork. Please don't get the impression I'm picking on the Department of Wildlife and Parks in Kansas or any other state. I have the utmost respect for them. If it were not for them and the laws they enforce, wildlife could be in much worse trouble than it is now. Remember the rainforest.

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## MUSSEL COLLECTING IN KANSAS

(Continued from page 27)

On the subject of permits, I must make mention of the other collecting permit required in the state of Kansas, and that is the commercial harvesting permit. Commercial harvesting is done in Kansas, as well as in other states, not for pearls *per se* as some might think, but rather for the shell material for use in the cultured pearl industry. Shells are shipped to Japan where beads are made from them. These beads are placed inside marine oysters to cause them to form pearls. Such commercial collecting of mussels in Kansas is restricted to four species of Unionids, *Quadrula quadrula*, *Amblema plicata*, *Quadrula metanевра*, and *Potamilus purpuratus*. Harvesting is limited to certain southeastern watersheds. Fees for the commercial harvesting permit are considerably higher than for the scientific collecting permit, and there is also a separate buyer's permit. In 1995, Kansas issued 28 resident, 24 non-resident, and 5 buyer's permits. Proposals have been made to change fees and size limits to match those of other states that are more restrictive. Because of the reduction in numbers of mussels, it is the opinion of the biologists here that mussel harvesting cannot continue indefinitely.

Mussel refuges have been established in some areas to help reduce the pressure from harvesting, and to preserve some of the precious mussel population so they can reproduce. Studies show that the refuges currently in place in Kansas have been effective in accomplishing this.

Are you thoroughly discouraged from coming to Kansas to collect mussels? You are supposed to be. Most of you are accustomed to reading here articles on exotic shell collecting trips to isolated Pacific islands and envying the finds. Sorry to disappoint you — this started out that way, but somehow it turned out to be more of an editorial than entertainment. But hopefully it left you all better informed.

In summary, I can conclude that the researchers and biologists are doing what they can and the law enforcement people are just doing their jobs. I'll try to stay out of their way as best I can. No, I take part of that back. I like the biologists too much, and am so much like them, I cannot stay out of their way. Even with all the regulations, I persist in learning more about these fascinating life forms, in having fun exploring the creeks, and I am truly enjoying my work.

There's no place like home.

### SOME REFERENCES I HAVE FOUND USEFUL:

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Species of mussels (Family Unionidae) found in two Kansas counties (Names given follow the current listing given in **Freshwater Mussels of Kansas — Register of Taxa, Synonyms, and Assumed Misidentifications** by Mark E. Eberle. Sternberg Museum of Natural History, Fort Hays State University, Hays, Kansas. Report No. 63, November 28, 1994.)

<b>Cedar Creek, Chase County</b>	<b>Middle Creek, Franklin County</b>
<i>Amblema plicata</i>	<i>Amblema plicata</i>
<i>Fusconaia flava</i>	<i>Elliptio dilatata</i>
<i>Lampsilis cardium</i>	<i>Fusconaia flava</i>
<i>Lampsilis teres</i>	<i>Lampsilis siliquoidea</i>
<i>Lasmigona complanata</i>	<i>Lasmigona complanata</i>
<i>Leptodea fragilis</i>	<i>Leptodea fragilis</i>
<i>Ligumia subrostrata</i>	<i>Ligumia subrostrata</i>
<i>Potamilus purpuratus</i>	<i>Pyganodon grandis</i>
<i>Pyganodon grandis</i>	<i>Quadrula quadrula</i>
<i>Quadrula pustulosa</i>	<i>Toxolasma parvus</i>
<i>Quadrula quadrula</i>	<i>Unio merus tetralasmus</i>
<i>Sitrophitus undulatus</i>	<i>Utterbackia imbecillis</i>
<i>Tritogonia verrucosa</i>	
<i>Truncilla donaciformis</i>	

Also seen in both localities were the Fingernail Clams of the family Sphaeriidae, species not identified. Not seen at either of the above localities but also found in Kansas is the Asian Clam, *Corbicula fluminea* (Family Corbiculidae), which has been introduced.

## BOARDTALK. . . .

From **BOBBIE HOUCHIN, COA Membership Chairman**, 2664 Kings Highway, Louisville, KY 40205-2649:

*It is that time of year for paying your 1996 COA dues.*

A member sent COA some monetary incentive to design an easier way to pay dues. Inserted in this issue, you will find a new way to pay, a pre-addressed envelope. It's pre-addressed to Mary Owen, the new COA Treasurer, and is your 1996 Dues Renewal Notice. You will not see the familiar gold renewal form we've used for years.

Please check it over before filling it out. It was requested at the 1995 Convention Board Meeting that we add members' phone numbers in the Membership Directory. If you fill in your phone number on the back flap of the envelope, below your name and address, that phone number will be used in the Membership Directory. If you don't want your phone number listed but will make it available to me, so that I can contact you if necessary, please enter your phone number on the bottom half of the back of the envelope, in the space allowed for it.

If you have a change of address at this time, check the appropriate box; if you have a change of address at another time during the year, send it to me (see my address above).

I am still having a problem with some members (in the United States only) not knowing that **American Conchologist** is mailed by Bulk Mail which is **NOT** forwarded. **If you are away from your regular address for more than a few weeks, especially during months when American Conchologist is being mailed, please let me know the address of where you will be for that time, and when you will return.** This way you will not miss an issue. Back issues are \$3.00 each, including postage.

Many of you attended the exciting and eventful '95 Convention in San Diego and it was good to see you there. To all — have a colorful fall.

**DON'T FORGET TO PAY YOUR 1996 DUES!**