

The Last Instar
By Katherine L. Barrett

Aesh was a dragonfly nymph. He lived in a coastal wetland of Lake Ontario,
He liked to dart among the lily stems and pondweed.
Aesh loved to swim underneath the lilies in the wetland,
especially to play hide-and-seek with the other dragonfly nymphs,
mayflies, and beetles.
His wings were not quite ready to fly yet,
and his body was green and brown,
so that he could blend in with the mud and plants.

One day, Aesh and his best friend Gomphus decided to explore a little further than usual. They
climbed all the way up a cattail stem to see what the view from the air would be like when they
would finally shed their skins and grow their wings.
“Wow!” said Aesh, “So this is the other world!
I can’t wait until I can fly - I can see the whole pond!”
“Yeah!,” said Gomphus, “This is awesome! We clubtails rule the air!”

But the nymphs, bubbling with excitement, had climbed right past a big grandfather bullfrog
sitting on a lily pad at the base of their cattail! They jumped when they heard a rumbling voice
from below them say “The pond is a place to be proud of, but it is sick: beware the poisons that
come from human works.”

Aesh and Gomphus gulped, staring at this huge creature that could have easily gobbled them up
as they climbed, just minutes before. Dragonfly mothers and fathers told terrifying stories of
what a frog could do to a reckless little larva! But this frog had not eaten them, and he seemed to
have something to say. “Humans?” Aesh replied timidly, “What kind of animal is that? Do they
live in the pond too?”

The bullfrog chuckled but shook his head.
“No, their work is large beyond words and affects the entire world. You may not see them here,
but the future of our home and many others rests in their hands.”

Aesh asked, “But how?, Our pond seems safe - we have our home,
our friends the mayflies, caddisflies, snails, clams.”

“Young nymph, you might be safe now, but what about in one hundred years?
There are millions of ponds like ours, yet we are not isolated. As a tadpole, I lived underwater
like you and thought of no other place, but I am old now and have traveled to many ponds. I
have seen what the poisons can do.”

Aesh listened intently, but Gomphus was anxious to leave.

“Aesh, we shouldn’t be here; this frog is going to eat us!”

“Gomphus, can’t you hear him? This is important!”

“Aesh, no homes are safe anymore. I have seen the big trucks, the tall buildings, the falling of old trees, and the humans just don’t stop.”

“But we cannot let our homes be destroyed!”

Aesh was suddenly afraid of the idea that his favorite bulrush patches and his favorite fellow bugs could be gone...

“Old Frog, what can we do? They wouldn’t listen to the tiniest nymph.”

The frog’s eyes became very sad, but he hopped over to be closer to the nymphs.

“Young nymph, they will listen only if you look and act and speak like one of their own.” And with that, he wished them safe passage and dropped off the side of the lily pad with a huge splash.

“Wait!” Said Aesh; what could the frog mean? “Gomphus, do you think he meant we could talk to them? And save our home?”

“I don’t know, Aesh, but I am more afraid of these humans he talks about than I could be of any frog. They are changing the whole world, he said! How could we stop anything so huge?”

With that, the nymphs descended the cattail stem and returned to their safe, familiar, aquatic home. Aesh couldn’t stop replaying the conversation he and Gomphus just had with the old bullfrog. Gomphus didn’t understand what the bullfrog meant, but Aesh felt an urgency within himself to speak to one of the wisest elders of the wetlands. Aesh had to speak to Ameletus, the old mayfly who served as guardian of the wetlands.

Aesh liked to spend his evenings on the front porch with the withered mayfly Old Ameletus. He had many stories, and he would always have a tasty zooplankton cookie and a kind word for Aesh when he needed one. They enjoyed each other’s company. But one day, Old Ameletus grew serious after telling Aesh a story about when Ameletus dodged a hungry trout. The sparkle in his many-faceted eyes darkened, and he sighed and said “Aesh, you are a member of the proud lineage of the Odonata, the dragonflies.

You can live in only clean waters, but I begin to see a sickness in the pond: it is like a veil that clogs our feathery gills, makes us sick, and forces our children to grow up too quickly so that we may find better water.”

Aesh twitched his antennae, concerned. He remembered what the strange old frog had said to him, several instars ago on the cattail stalk. It was his first time in the air.

He immediately recalled when he was very little, his very first instar, and his brothers and sisters showed him how to swim and catch the diatoms for food. He loved his life here; everything was so familiar, so right. How could he let every other living nymph and larvae suffer?

“Aesh, I have been thinking about this for a long time now, and I believe you can prevent our home from being destroyed.

Become one of them, gently show them what it means to live as we do.

For we can only hope that by understanding us, the humans will change their ways.”

Aesh became worried, and backed away from the mayfly.

“Become one of them? You mean that I would have to leave all this? All the things and friends I know?”

Ameletus beckoned for Aesh to come closer.

“Remember who you are, Aesh: your father and mother and their father and mother before them emerged from the water ready to sail the skies.”

Aesh saw through the stems of the cattails that his friends were headed out to crawl on the lily pads. He wanted to join them, but he knew he couldn't unless he did what Ameletus asked of him.

“What do you want me to do, Ameletus?”

“If you decide to accept my offer, you will become a human. You will emerge prematurely in the process, and as a human, you will have only enough time to find the source of pollution and to make the humans see it for themselves, and more importantly, want to protect us. Aesh, how old are you? You are in your 5th instar, correct?”

“Yes,” Aesh nodded, “Mom says I will molt again soon.”

“So, you will have 5 instars as a human, and on the end of the 5th, you will become a mature nymph, and then you will enter your last instar and emerge as an adult with wings.”

“That means I will miss out on growing up with Gomphus and Lestes and the coenagrionids.”

“Yes, you will have to make a hard choice, young nymph. But this aquatic life is one that we must consider as ongoing, for a stream or wetland never stops moving to the rhythm of life. The molts, emergence, death, and new beginnings never cease. By giving up this life that you know and love, Aesh, you are giving your friends and family, not just the odonates, a chance to

continue living and thriving in our home. They, and all the future larvae and nymphs, will be told of your legacy.”

Aesh heard Ameletus’s words, but he didn’t want to. What if he chose to stay underwater? Then he could live the rest of his childhood with his very best friends.

But what if what he wanted was not what would be best for his friends?

“Ameletus,” Aesh said quietly, “I will do it.”

At that moment Ameletus placed his forelegs on Aesh’s wingpads, which had an odd resemblance to human shoulder blades.

“Aesh,” he said, “Remember: you are the bravest dragonfly I have ever had the honor of knowing.”

And with that, a whirlwind of water formed around Aesh and Ameletus, and as soon as the pair started spinning, Ameletus let go of Aesh and simply watched as Aesh was taken up with the water, sun, and air.

Aesh closed his eyes. He did not like this spinning sensation at all. Did I make the wrong choice, he thought?

Before he could think anything more, he was asleep.

The next morning, Alice was wandering around her favorite field, where the goldenrod and purple aster dot the barnyard grass like specks on a butterfly’s wing. She loved to come here because it was a reasonable detour to school, and it was where she could watch the Lake Ontario waves wake up the lazy cattails and bulrush. Alice was struggling with a cancer that made her tired, and the treatments made her feel sick; she was new in New York state, having lost her only parent too early to remember. Her treatment was expensive, and her living family reluctantly took turns caring for her. She thought of the aunt she was living with now: a grumpy, rich old woman who talked about Alice as if she were a rather demanding and smelly cat. But here the early morning wind shook the worries from her mind. This field and wetland was her solace, her escape; until one morning when she heard a loud snoring from the dense stand of cattails.

“Is that a beaver?” Alice asked herself. “Or maybe a fisherman who fell asleep?”

The logical Alice would have thought, “No time to play scientist: the bell for homeroom will ring in 10 minutes.”

Curious, she abandoned any thought about getting to homeroom on time and crept toward the cattails and as she parted the stems to make a path for herself, she saw a lump of blue and green laying on the edge of the water.

“Hello?” Alice asked softly, “Are you awake, are you okay?”

The lump on the ground was quiet, but Alice could see a slow up and down movement so she knew it was living. So she went closer.

“Hello?” she asked, and took her hand and patted a shoulder. “Hey, wake up before you get hit by a strong wave!”

At that, the lump seized up and retracted all limbs like a turtle.

“Are you okay?”

The lump relaxed, as it realized the small voice could not possibly cause harm. So the lump rolled to one side and glanced up, away from the soggy soil.

“Oh, you must be lost! My name is Alice, I go to Brockport High School. What is your name?”

The lump realized he didn’t really know how to respond. Somehow he knew the question, but wouldn’t humans think the name “Aesh” to be weird? But he could not think of a better alternative.

“Aesh.”

“Wow, what a cool name! All the boys around here are either Mike, Tom, John, Stan, you know.”

“My name is Aesh, are you one of the humans?”

Alice knotted her eyebrows. What sort of question is that? “Yes, and you are as well, I believe.”

Just then, Aesh looked at his hands; they were once claws, used for clinging, climbing. What in the world would he do with 5 claws on each leg? And where was his third pair of legs?? And why were the claws much shorter on his longer legs? It made no sense; how could humans survive like this?

“I am human? I am not used to this, not one bit.”

“Are you sure you’re okay?” With that, Alice extended her arm to him, beckoning Aesh to take her hand and rise up.

“I’m here to find the pollution so that my home is safe,” he replied.

“Pollution? You mean air pollution? And where do you live?”

Aesh felt embarrassed but he pointed with his new claws toward the wetland.

“Okay,” said Alice, “We will find the pollution together.” She did not question him further, since she intuited that he was truly not from around here.

Aesh timidly accepted and wobbled to his feet. He was so accustomed to walking with all legs on the ground, and now here he was, standing next to a girl he didn’t even know.

“You should come to school with me,” said Alice. “Ms. Barker won’t mind; she is our science teacher.”

“Will she help me find the pollution?”

“I’m sure she will try her best,” said Alice with a small smile.

Together they walked, for Alice showed Aesh that walking upright isn’t that hard after all. Looking all around him, Aesh saw tall brown structures with crowns of green on top, and things with wings flying in and around the green.

“What are those?” he asked Alice, pointing at the tall brown and green structures.

“You haven’t seen a tree before, have you?” she asked, in a nice way.

“No, where I come from there are rocks and tiny green plants that grow on the rocks.”

“That sounds a lot like my aunt’s front lawn! She hates mowing the grass so she hired workers to pour cobbles on her lawn. Personally, I don’t mind wild flowers and tall grasses.”

Aesh didn’t know what that was, but he was already tired of asking questions, so he just nodded his head yes.

They were walking in a corn field now, but he could still hear the waves coming in and going out from his home.

“Aesh, our school is just over that hill, and right here, if you look toward the open field to the left of where we are now, there is a giant pool.”

Aesh looked at the shining, bright blue pool. It seemed out of place in a serene woodland area and corn field.

“Why would the humans put a pool here?”

Alice didn't have an answer, except, “I am not sure, but I know they constantly are filling it with more water if it runs low.”

“It just seems so un...natural,” said Aesh.

“Yeah, I think so too.”

At school, Alice introduced Aesh to Ms. Barker, the Science teacher. Ms. Barker lived in a house along Lake Ontario, and was familiar with wetlands, and really loved the dragonflies and damselflies that flew around them.

“Ms. Barker, this is my friend Aesh. He is from out of town.”

“Hello, Aesh,” said Ms. Barker, extending her hand to his, “Very nice to meet you. Are you shadowing Alice today?”

“Yes, if that is okay,” said Alice, before Aesh could ask what Ms. Barker meant by the word “shadow.”

“Are you a senior, Aesh?” asked Ms. Barker.

“I...I think so?.” he managed to respond, but it came out more as a question than an answer.

“Aesh, your name is the first part of a family of dragonflies, Aeshnidae,” said Ms. Barker. “Do you know the origin of your name?”

Aesh smiled at the word dragonfly. “I think I am named after my father.”

“Well,” said Ms. Barker, “You should be proud.”

Aesh smiled and went to class with Alice for the day.

During lunch, Ms. Barker went up to Alice and Aesh and called them into her classroom.

“So, as Alice may have told you, I am pretty easy going. However, I just want to understand where you come from, Aesh.”

Alice began to speak up, but Ms. Barker quickly said, “Alice, I appreciate your eagerness to help Aesh, but let’s hear what he has to say.”

Aesh realized that Ms. Barker knew he was not...normal like a human. “I am from the wetland near the big pool.”

Ms. Barker’s eyes lit up and she sat up straight at her desk. “You live in a wetland?”

“Yes, well, I did, until my family told me it was time to come up to the surface and become human.” Aesh felt his face turn bright red as he said these words, words he knew no one would believe.

“So,” said Ms. Barker, “Are you a dragonfly?”

He looked right into her eyes and said, “Yes.”

Ms. Barker looked at Alice and told her, “Is that the same wetland you walk by on your way to school?”

“Yes, Ms. Barker.”

“Okay, I have been watching that pool and I think I know where the pollution is coming from,” said Ms. Barker.

“That is why I am here,” said Aesh, “I need to find and stop the source of the pollution!”

“Alice, do you remember our class on energy and natural resources?”

“Yes, I remember learning about the oil, coal, and natural gas industry,” replied Alice.

“The pool that you and Aesh saw, it is a retention pool for contaminated, unsafe water from Hydrofracking, which is a process of natural gas extraction from deep below the Earth’s crust.”

Alice looked at Aesh, and saw that his shoulder blades were looking more like wings than human shoulders. She remembered watching a nature documentary about how insects such as dragonflies and damselflies start their lives underwater, and when it is time for them to fly, they emerge out of the water, ready to fly and find mates.

“Aesh, when I found you on the edge of the cattail, did you just emerge from the water?”

“Yes, I was turned into a human, but not for long! My wings are getting bigger, I can feel it. Ameletus told me once I get closer to finding the pollution, that I would have to return to finish my instars. We must hurry!”

“Ms. Barker,” said Alice desperately, “what will we do?”

“Hold on just one minute,” Ms. Barker replied, and she ran to the Principal’s office, and quickly returned to see Aesh and Alice. “We are all set; we will take my car. Mrs. Reinhart can handle my afternoon class.”

Aesh was astounded at how willing these two humans were to help him find the pollution. But he also felt himself becoming more sluggish.

“Alice,” said Ms. Barker as she pulled the car into a large parking lot where massive trucks and men in hard hats walked about, “Let me know if you are getting tired, okay?”

“I will be okay; we are here, and Aesh doesn’t have much time.”

“That’s the right attitude,” said Ms. Barker with a smile.

She put the car in park and stepped outside. “Stay in here,” she told her students.

Ms. Barker approached the gates to the world of Hydrofracking. A man in a hard hat quickly met her.

“Hello,” said Ms. Barker, “I don’t mean to intrude, but I have two very accelerated students who wish to learn about your facility here.”

The man knotted his eyebrows and asked her, “Usually don’t you plan field trips to zoos and stuff?”

“Well,” chuckled Ms. Barker, “These two are very determined to do their senior project on energy issues and your drilling facility is right around the corner from the high school.”

“Okay, I guess they could come in for a short tour.”

Ms. Barker waved Aesh and Alice to come over to the gates. At this point, Aesh knew he was getting closer, as he felt weaker and weaker by the minute.

Alice could tell he was fading, so she let him lean on her. She did not tell him, but she too was feeling tired.

They entered the drilling facility, and the man in the hard hat directed them toward stairs that led to a high platform where they could get a bird's eye view of the whole gated facility.

“My students are curious about that pool you have over there,” said Ms. Barker, pointing to the pool. Now that they ascended the stairs, they could see not only the pool, but also Lake Ontario, and the wetland, Aesh's home.

The man in the hard hat cleared his throat. “That is where we store the flow-back water after we take the natural gas out of the ground.”

“Wow,” said Alice, “That is an awful lot of water. What's in that water?”

The man in the hard hat replied, “Well, the exact composition of it, I honestly am not completely sure. I know it can be radioactive, and there are a lot different types of salts.”

Alice pursued the question, “Where does it go after it is in the pool?”

“Well,” the man stammered, looking guiltily at the floor, “We just keep it in the pool, and when it gets full, we pump it out.”

Aesh suddenly became very angry. “Where does this water go? Into the lake, the wetland, or the ground, or don't you people even care?! My family is going to die unless you know that your mess is hurting us, and you need to be responsible about it!”

“Aesh,” said Ms. Barker, “We need to be respectful...”

“What good is respect if it gets us nowhere?” Aesh lowered his voice, and resumed his thoughts. “My family lives in that wetland; we depend on clean water, healthy plants, and we want to be able to live there for many generations to come. Please, can't you do something different with the water?”

The man bit his lip nervously and said, “We don't have much say in the matter; it's the regulations that we must obey.”

Aesh softened his voice and said, “But your ways are not right. Our home, even though you don't see it, is just as valuable as your own. Please, is there a way to clean the water, so that if it does over flow, it can be like the water my family and I rely on?”

The man in the hat shook his head and looked to the floor in shame. “I...I didn't realize we had such lax regulations with this water. I am sorry, young man. I will take it up with the boss, and we will fix the problem.”

Although tired and feeling like he needed to return to the water, Aesh smiled and said, “You really mean it? You will?? My family and I are forever grateful.”

The man cleared his throat and spoke into his radio-transmitter: “We will cease operation of this fracking well until we fix the flow-back water retainer.”

With that, Ms. Barker shook the man’s hand and thanked him for letting Aesh and Alice see the facility. “It definitely made an impact on them both,” she said.

“You know,” said the man, “I didn’t know about the flowback water. We are paid contractors; we just install the pipes and casings and don’t ask any questions. But maybe I should start asking questions.”

Ms. Barker simply nodded and walked away.

“Ms. Barker!” shouted Alice, who was holding up Aesh, who almost fell to the ground. “Aesh needs to get to the water, fast! He is already...changing!”

Aesh’s shoulder blades began protruding out of his back in the form of wings. His eyes also looked as though they were too large for his head.

“Alice, please take me to the water,” he could barely say.

Ms. Barker knelt down and helped him to his feet, which she saw were becoming more spider-like. She quickly put him in the back of her car, and the three drove away to a road nearest the wetland.

Ms. Barker opened the door, and she and Alice helped Aesh go home.

“The cattails is where you found me, Alice,” he strained to say.

Even though Alice was tired, she and Ms. Barker hoisted Aesh so he could rest on their shoulders. Walking carefully, they carried the lost boy who was turning back into his true self.

Ms. Barker thought to herself, “I have never seen anything so incredible in all my years teaching.”

Very soon they came upon the stand of cattails, the very same ones that Alice had crept through only a few hours ago this same day. Aesh now lay down on the soft ground and let his hands touch the wetland water.

“Thank you for believing me; I now have good news for my family.”

Ms. Barker wished him well and put a hand on Alice’s shoulder, and said, “You are going to make a fine biologist one day.”

But Alice didn’t want to be a biologist anymore. She wanted to go with Aesh.

“Wait!” she called out to him, “Aesh, can’t I come with you?”

“Alice, you are a human, you belong up here,” he said, “Besides, your family will miss you.”

“No they won’t. Believe me: I am more of a burden than a member of my own family.” She insisted, “I am sick anyway, Aesh. I have cancer, and I don’t have that long to live. You showed me that a true friend doesn’t have to walk on two legs or know how to act in public.”

Ms. Barker thought she should convince Alice to come back to the car, but something told her to let nature take its course.

Aesh reached out his arm, which was now becoming more insect-like and less human. “Hold my hand, and when I say so, jump in the water. But don’t let go!”

“Okay,” she whispered.

“Ready,” he said, “Here we go!”

Into the water they plunged,
not too far away, but invisible from the surface
humans becoming nymphs,
nymphs becoming older nymphs,
shedding, molting, becoming a different form of themselves
until,
Emerge!

Aesh swam around, with Alice still holding his tarsal claw.
She now had feather-like gills that looked like tails.
She was a damselfly.

They darted around the bulrush and burrowed into the sandy banks,
and the old mayfly Ameletus arrived to send them on their way

“Aesh,” he said with a smile, “You did it! The lost mayflies, the caddisflies, the clams, the beetles, the midges, they are all coming back to live here! Now we can stay, and live with the pike and perch, with the bass and bowfin. You are forever a legend.”

Aesh, now bright green and larger, his wings beginning to look like adult wings, smiled at Alice.

“I am no legend,” he said, “For my friend Alice, she showed me the way to the pollution and we saw it and told the humans to change. She was a human, and now is one of us!”

Ameletus swam over to her. “Alice? That is a very unusual name. Very pretty for a pretty damsel, but I say, let you be called Ischnura, for the name of the very brave line of the coenagrionids!”

“Aesh and Ischnura!” The whole community of clams and mayflies and caddisflies chanted over and over again.

Ameletus swam over to the two heroes. “It is time for you to become who you are meant to be...”

Ischnura looked at Aesh and held his claw with her very own claw.

“What if I don’t know what I was meant to be?” she asked thoughtfully, for so many things were happening so fast.

Aesh looked at her and smiled, and said, “Not knowing is part of the journey.”

With that, Aesh began to swim toward the light, and Ischnura readily followed behind him. She felt, for the first time in years, the energy that the cancer had taken away from her. Before she knew it, they were above the water, sunlight warming their new wings. Aesh found a lily pad to perch on while he molted for the last time. Ischnura’s bright green eyes and silver wings scattered the afternoon sunlight over the water, and Aesh could tell she was happy. Together they stood on the same lily pad, basking in the same sun, awaiting the moment that they would fly to new waters and join the flock of other dragonflies and damselflies.

Ischnura left behind her old skin and was ready to fly.

“What do we do now?” she asked Aesh.

“I think it is time for another adventure,” he said. And together, they took to the air, aloft in the skies.

For there is no better way to see the world than to embrace it head-on but never to forget where each of us comes from, or the same Earth and water on which all of us rely.

Epilogue

Ms. Barker was walking to school the next morning and decided to walk past the wetland. It was a crisp, sunny day, and she brought with her Alice's aunt, for she needed to know and believe what Ms. Barker said was true. Surprisingly not mad, but understandably sad, Alice's aunt looked amazed that her niece would spend so much time by the water. Alice's aunt felt a tinge of guilt, for maybe if she had been more pleasant toward her niece, the outcome would have been different.

"I didn't believe it at first, when you showed up at my door," admitted Alice's aunt. "But now I think I understand. She is happy and free."

As the sun continued to rise over Lake Ontario, the cattails and lilies became illuminated and the water glistened like glass. Out of the stand of cattails emerged a bright green dragonfly. Following close behind him, a slender bright blue damselfly with onyx black wings. Right next to Ms. Barker and Alice's aunt's feet, an old, warty bullfrog bellowed like no other frog in that wetland.

"Wow, that has to be the most beautiful sight I have ever had the privilege to see," said Alice's aunt. For the first time in many years, a smile appeared on her face.

The damselfly and dragonfly zoomed above the wandering humans, and for a quiet moment, the wetland's fish and frogs, mayflies and mussels, knew life in the water, their home, would continue on for many, many years.