

THE WHITE-TAILED DEER OF BLACK ROCK FOREST

An Explorer's Guide

By James Kamlet

P R E F A C E

These pages were written as a supplement to Chapter One of the grade four, Holt science book. The first chapter, "Penguin and Salmon - Two Life Cycles", deals with the Antarctic Emperor Penguin and the Pacific Chinook Salmon. Although the concepts taught in that unit are universal and applicable to all forms of life in any environment, I have never felt quite complete when I taught from that section. I believe it was the basic familiarity with penguins and salmon that was lacking for my students, and though I'd tried everything from having a friend come in and show us slides of actual penguins taken on his trip to Antarctica to passing around real salmon eggs, I still felt there was something missing. By choosing this third example for life cycle study - the white tail deer, I now hope to bring our study of science to a level of personal experience that could not be attained before. Black Rock Forest is located just about in the Cornwall School District's back yard. Any child who has hiked on the trails at Black Rock has probably seen white tail deer there.

This booklet was written to be used as a source of reading aloud for teachers who simply wish to give their class a little background before going on a trip to Black Rock. Or, teachers may elect to use the accompanying worksheets and projects to turn the reading into a full fledged unit of study that continues where the Holt, Chapter One leaves off.

I owe a great deal to Curtis Stadtfeld's wonderful White Tail Deer. A Year's Cycle. Although the pages you are about to read are all in my own words, I could not have organized it without relying on the format and information gleaned from Stadtfeld's book.

In one of my chapters I write of an incident where the doe, Simma, takes a wrong turn and leads her two fawns across the parking lot at the Lee Road School. This actually occurred in November of 1995 in full view of my fourth grade students. By incorporating that event into the story, I have tried to breath a kind of life into the facts and lessons the book is trying to impart to the Cornwall children. After all, it is about three deer who live near them in Black Rock Forest. I would hope that after reading my booklet many Cornwall kids will feel as close to these animals as I do after writing this.

ACKNOWLEDGMENTS

I have had a lot of help in writing this piece. I would like to thank Bob Nichols, Assistant Principal of Cornwall Central High School, who has included me on his Black Rock Forest Committee. His efforts were instrumental in opening the door to Black Rock Forest for the Cornwall School District. My own part in all this would not have been possible without his energies.

To John Brady, Terry Murray and Dr. William Schuster, I am greatly indebted for the time they have given me and my peers with their training workshops and class trips into Black Rock. Much of my source material has come from the Black Rock library thanks to John Brady.

I would also like to thank Sally Wortmann who I have worked with for over 20 years. We originally explored Black Rock together for the first time when we co-taught orienteering at Black Rock in the late seventies. Sally provided me with material for this booklet and was responsible for putting together two science labs on deer ranges and scents that I hope will become an integral part of the white tailed deer program for the fourth grade.

I thank Margaret Dames, Superintendent of Schools for her good will and words of encouragement. Even when faced with dwindling funds and her own disappointment with the failed bond vote, she has kept the option of belonging to the consortium a possibility for Cornwall.

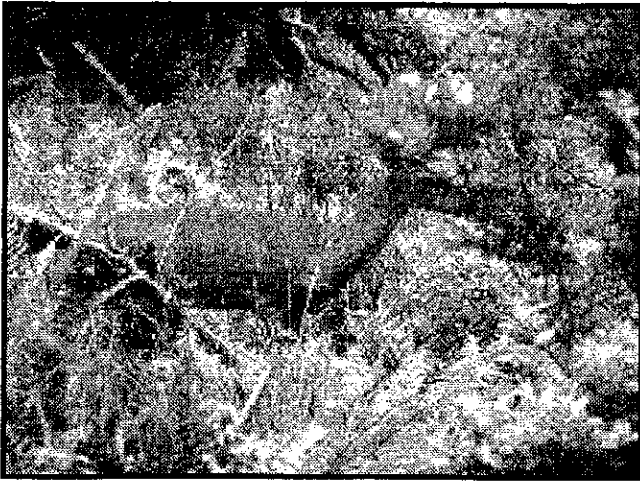
To P. J. Clark, a student in my fourth grade class, I say, "Thank you for asking me weeks on end when I was going to be finished with my deer book." It was due to his persistence that I was ultimately reminded who I was really working for.

To my wife Susan, I owe about a thousand hugs for her patience and understanding for all the times I was buried in our basement study reading DEC bulletins and typing on our computer until 2 am, only to wake at 6 am and frantically try and have breakfast while catching up on the marking I was remiss with due to the writing I did the night before. I won't even mention how many times I covered our bed with cut up pictures from The Conservationist, while she and I pored over just one more issue to try and find that perfect scene of another deer for chapter so and so.

And finally, I thank Fran Harrison. Through her skill with a Mac and her appreciated secretarial services, what would have otherwise appeared like the sophomoric efforts of someone's hastily typed term paper, she has transformed my words into something that might even be fun to read. I look forward to working with her on future projects.

This book is dedicated to
John Brady, Black Rock Forest Manager
and Director of Education,
whose expertise in woodland matters has inspired me
to learn and write about the white tail deer.

CHAPTER ONE



Every Year, starting in May in our region, our forests turn into great supermarkets for many animals that live there. During the first weeks of that month the forest green returns in full force.

Although the calendars tell us that the first day of spring is in March, it isn't until that first week in May that the real changes begin. For it is then that the new leaves of the forest canopy begin their great spread, and the sprouting buds and shoots of the forest undergrowth become food for one species of creature that, at this point, is close to starvation: the white-tailed deer. The feast that suddenly offers itself to these creatures comes just in time, year after year, to save them from starvation. And by doing that, it allows them to begin their own cycle of life once more.

For the past six months the deer ate very little. They lived on stored fat and an occasional white cedar twig. Many of the other twigs and evergreen branches that a hungry deer could reach in the deep snows of winter were simply not good food for them. Now, after months of being in the cold and emptiness of winter, the deer are reborn into the paradise of spring. Many are up to 30 pounds lighter now. And all are very, very hungry.

We will tell the story of the life cycle of the deer by focusing on one female deer. Female deer are called does, and this doe we will call Simma. Simma lives in a forest right near us called Black Rock Forest. She has just survived her second winter there. This woodland of over three thousand acres is bordered by a large highway – Route 9W. And though these woods are just minutes from two towns, Cornwall-On-Hudson to the north and Highland Falls to the south, they have sheltered Simma from people for most of her short life. Simma has only seen a human once – and that was just for a few seconds when her path crossed that of a summer hiker when she was not yet a year old.



In winter, during the dangerous weeks of the hunting season – when the scent and movements of man are mixed with the odors of gunpowder and death, she survived by keeping to the higher ground around Mount Misery and Whitehorse Mountain. Often she sat for hours at a time, motionless until those fearful sounds and smells moved away.

Now there is little danger. There is nothing in this forest that can kill her. The coyotes cannot catch her. She knows nothing of her ancient enemies – the wolf, the lynx and the mountain lion, gone from Black Rock for over 200 years.

Feeding well for the first time in months, Simma does not wander far from where she sleeps. Nor does she kill the plants she eats. Instead she takes a small bite from each one and moves on. She does not graze in one spot like a cow or a sheep. For her, the forest is like one huge salad bar to sample from. Only when there are too many of her kind in one spot do they destroy the vegetation in an area.

Once, in late November when she was only 18 months of age, a young male deer, called a buck, mated with her. But Simma has no memory of this now. The year before she was too young to mate, so she stayed with her family. She is with her family still, until a strange discomfort makes her grumpy. Suddenly she needs to be alone. One day in late May, she walks away from them. She does not realize that she is acting on an inborn instinct



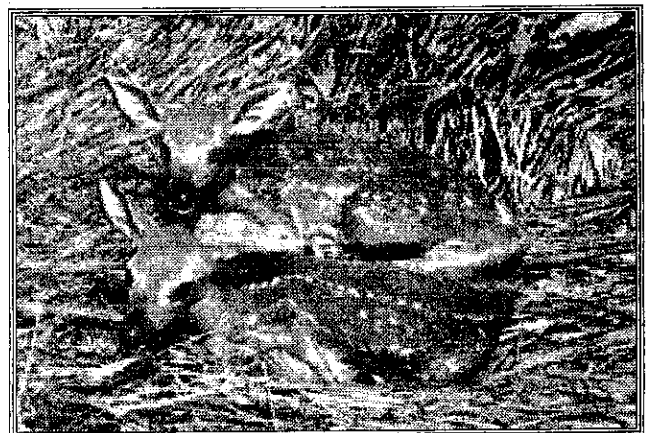
she did not have to learn. This instinct moves her to go off by herself to have her fawn. Simma is about to be a mother.

CHAPTER TWO

It is mid June now. Simma does not know she has life growing inside her. Only a day or two before the birth does she suddenly grow uneasy. Even then, she doesn't know why. One morning, without warning, it begins to happen. She starts to pant and suddenly has to lie down – though she still doesn't know why. She tries to rise several times, only to fall back down in a clumsy way. She does not feel at all like the graceful deer that bounds over forest ridges and valleys right now.

Then, as if by magic, out drops a fawn. It lands with a thud and lays there as she licks it clean. She does so without thinking. another inborn behavior. An hour later a second fawn appears. Rare for a first birth, Simma has become a mother of twins.

Within minutes Simma guides them to nurse. They know just what to do. Another inborn reaction. Later she will leave them alone in the forest while she goes off and feeds herself. Without being told, they lie perfectly still – a behavior that will save their lives many times. Coupled with the fact that they have absolutely no scent at this point, they become almost invisible. With their three-hundred odd white spots and light brown body, they blend in with the leafy floor of the forest so that a dog or a hiker could walk right up to them and not know they were there.



Even when Simma comes back to her fawns, she will rest about fifty feet away, slightly uphill from them. By doing that she gets a better view when she watches for enemies. And, if some animal or human did come upon the scene, she would dash away, making a thrashing sound off in another direction, directing their attention away from her babies.

When they get hungry, fawns make a slight crying sound, like baby lambs. If the coast is clear, Simma will come over and nurse them. But, if there is the slightest feeling of danger in the air, the smallest hint of a scent of an intruder, she will stay where she is and grunts softly to let them know they must lie low to the ground and not make a sound.

In time the fawns begin to walk. Soon they develop a smell of their own. This is very important because it is the way their mother knows they belong to her. Without it she might leave them to starve. In a short time they can tell what she smells like too, though sometimes they may make a mistake and go to the wrong doe. When this happens they are rewarded with a sharp kick.

By mid July the fawns are trotting alongside their mother. At first they only live off her milk; they cannot digest plants yet. Then, by giving them some of the bacteria from her own stomach that help her to digest those rough plants, they begin to be able to sample from the forest menu, a wild flower here, a berry there. By six weeks of age they begin drinking water from the stream. Still, without their mother's milk, they would die.

By now Simma has rejoined a small herd of about a dozen does. They stick fairly close together and feed as a group now. If there is danger they turn as a group and run, their white tails showing like a flapping banner to confuse their enemies.



One of the fawns is a male – a tiny buck with no horns. We will call him Brac. His sister we shall call Bella. She looks and acts just like him now. But in the coming months Bella will develop a completely different set of behaviors that she has no control of. For they each have a part to play in the great stage of survival. These parts have been written and played over and over again for thousands of years.

CHAPTER THREE

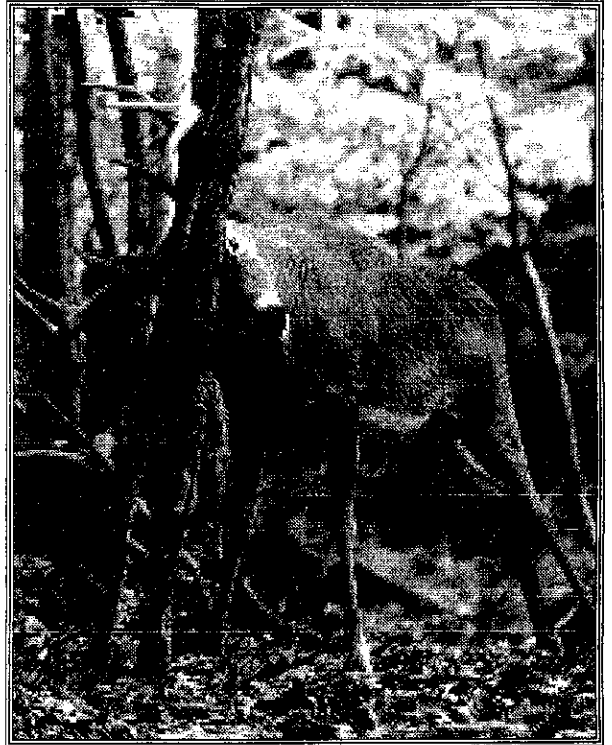
It is late summer. Everywhere there is growth. The forest is a celebration of dark green. The two fawns are nursing and growing every day. Simma has not gained much weight because the nursing takes a lot out of her. But for Brac and Bella, it is another story. They are full of energy now. They run and jump with the other fawns, chasing each other, playfully butting heads. They are learning how to fight, to jump, to run swiftly, even to swim. Brac is just under 40 pounds now. Bella, slightly lighter.



They stare at the older males with a slight surprise. Growing out of their heads are strange spiky branches. But instead of bark, these limbs are covered with a soft, velvet-like material that causes them to want to scratch it and rub it against things endlessly. Brac is glad there is nothing like that coming from him yet. The insects are causing enough itching as it is!

As the slow, peaceful days of August fade in and out, sleepily the deer keep no count. Brac and Bella are still under the protection of their mother – they are far from full grown but they trot alongside her like they own the forest. As September draws closer, the sun begins to set earlier. The shorter days and cooler nights begin a seasonal change in the deer themselves.

The older bucks have rubbed off much of the velvet from their antlers by now. Shiny spikes of all shapes and sizes have replaced the softness that covered them. Many trees have died to give those bucks a few months of manly pride. For, each winter after the mating season, the antlers break off cleanly as if they never were. Each spring, starting in May, a new rack will grow back. If they ate well that year the antlers will be larger than the year before.



Slowly, the fine hairs of their summer coat begin to fall out being replaced by thicker hairs that are better suited for winter. The deer have no memory of the change of seasons to come. Their bodies remember though, and things begin to happen through no decision or fault of their own. They begin to lose their spots. They are able to eat a more varied diet. Mushrooms are now on the menu. Somehow they know not to eat the poisonous ones. They eat like their lives depend on it. They walk into wide open fields in broad daylight if there's something good to eat there. Apples are really tempting this time of year. They will also eat nuts and grain if they can find it.

The deer in Black Rock Forest have to wander completely out of the forest to reach an orchard or a plowed field. Some of them will. You may have seen a body or two that didn't make it as you drove with your parents down Angola Road or 9W. The fruity treasurers of Jones' Farm have drawn many a deer to its doom. Most deer parents have never really gotten the hang of how to teach their children to cross a road safely. But Simma keeps her small family deep within the forest. They will be lucky if they find a patch of crab apples now and then. But at least they will be safe.

Finally, September ends. As they wander down to Sutherland Pond each day for the tasty water plants that grow along the shore, Brac and Bella do not notice the explosion of changing colors all around them. Even if they did look up, it would not matter. They are color blind.

The fawns have almost all their teeth now. The rest of them they will grow during the following spring. They are storing fat now with everything they do is gearing towards that. Though, they know not why. Even Simma has no memory of what winter will be like. Perhaps it is better like that.



CHAPTER FOUR

As the weeks of october come and go, Brac and Bella continue to fatten themselves on the remaining patches of nuts and berries that they search the forest for on their daily walks. As the days grow shorter, their hearts begin to pump blood more slowly. It is nature's way of getting them ready for the slowing down time of winter.

In October, all the adult bucks begin a strange transformation. With their antlers now full-sized and polished, they begin strutting about the forest marking their territories and acting like bullies. They ignore Brac and Bella completely, and for now, do not even pay any attention to Simma. They do not quite know what is happening to themselves; but, they sense a big change is coming. In the next few weeks, they will begin to grow so full of strange anger and energy that they will not be able to contain themselves. The rutting season is about to begin.

During this tense time of year the male deer feel the need to prove who is the toughest and strongest; for they will be the ones that will get to mate with the doe. Nature makes them very angry and easily irritated during this time. They begin marking small patches of ground with urine and start challenging any other bucks that come near. When bucks do meet, they hardly ever have contact with each other. They usually snort and stamp around until one of them chickens out and runs away. It's more of a contest to see who will give up first than one of strength.



When a doe is in heat, it means she is ready to mate. She gives off a certain smell to let all the bucks in the area know. If a doe is not quite ready to mate, she will run off when the buck comes too close. At some point in mid November, Simma is ready to mate. She leaves Brac and Bella by themselves. At first, they try to follow her; but after snorting and stamping and walking away quickly, they get the idea that she needs some time by herself and they let her leave. They are quite able to take care of themselves by now. So, a day or two without mom is no big deal.

In a short time, Simma finds a mate. It is a large buck, four years old, and one of the strongest males in Black Rock Forest. After the first mating they stay together for the day, actually grooming each other and acting like some old married couple who have been together for years. They will mate again several times before the buck goes off and Simma, no longer in heat, returns to her family. Neither of them will remember their moments together.

Next June, when Simma gives birth, it will be as much a surprise to her again as it was when Brac and Bella were born.

But upon returning to them, Simma will no longer give her fawns milk. That part of their life is over. She will stay with them for the winter. They still need her to learn how to survive.

All through the forest, antlers are starting to loosen. Soon they will fall off, leaving red scars on the suddenly



lighter heads. But they will not fall off soon enough. They are now more of a danger to them than anything else.

A new sound enters the forest. It is the sound of a gun. The hunting season is here again in Black Rock Forest, as it is in most of New York State. The fawns do not know what to make of these sounds. Though Simma cannot tell them in words, she suddenly becomes much more careful than ever before. She snorts warnings to the fawns constantly, making them freeze for the slightest sound or smell she cannot immediately identify. Though she has only seen a human once before, she somehow knows, somehow remembers that the loud crackling sounds that we know as gunfire is something they must avoid at all costs.



In Black Rock Forest, only members of the Black Rock Fish and Game Club can come into these woods to hunt. By keeping the deer population lower, they actually prevent the deer's natural browse from being eaten down to the bare earth. If this were to happen, it would cause far more deer deaths from starvation than from hunting. And, starvation is a far more long and painful way to die.

But, Simma and her young cannot possibly understand the benefits of hunting. So, Simma leads her children, now teenagers in our years, up to the high areas below the summit of Black Rock Mountain where faint memories from the year before tell her they will be safer.

One cold and windy day, at the start of the second week in December, it is far too chilly to stay in one place as Simma would have liked. She and her almost grown fawns keep moving to stay warm. Suddenly, in an open field they are about to

cross, a man and his daughter see them. They both have guns. They are out on the last weekend of the season, looking more for a walk in the wild than a chance at killing something. At



first, the man and his daughter raise their rifles and wait for the shot. But, before the triggers are squeezed, the man touches his daughter's shoulder.

"Doe," he whispers. "and those are her fawns." The girl slowly lowers her weapon and they watch Simma and her family walk silently across the edge of the field. The people are upwind of them, so their scent is missed. And because the hunters stand perfectly still, they too blend in with their surroundings. Simma's poor vision does not register them at all. When the man had whispered, Simma was alerted for a brief second; but, the sounds were lost in the wind. She went back to the job at hand, crossing the field safely.

Simma would never know that her life was spared by a curious human law that only allows hunters to shoot male deer, the bucks, during hunting season.



And yet, their lives were only spared to face a new test. One that will bring them to the limits of their endurance. It will be a test of cold and starvation that their deer brains cannot possibly imagine. Perhaps a bullet would have been an act of mercy.

CHAPTER FIVE

The temperature seems to be dropping on a daily basis as the weeks of December roll on. The forest is high enough in elevation so that the misty rains of Cornwall often fall as snow and sleet in the areas above the Upper Reservoir. About a week before Christmas, they took their first excursion down to the lowlands. They descended the hills below Alec Meadow Reservoir and wandered past the meadows of Kendridge Farms, finally crossing Angola Road at midnight. They finally settled in one of the back orchards of the Clearwaters' farm where they ate their fill of rotten apples. Simma had been shown this route by her mother



Deer have the ability to remember places they have been and where they have been successful finding food. Although they no longer migrate, they do have ranges where they browse during different seasons. Now, Simma was showing her children the full extent of her range. But, deer are not perfect; and sometimes they get confused by the movements of humans. If Bella and Brac had a longer memory and a sense of humor, they would recall a recent adventure right before Thanksgiving, when Simma took a wrong turn trying to bring them to a farm we call Donahue's Farm,

in the village of Cornwall-on-Hudson. Having made a wrong turn on the Boulevard, she ended up taking them through Cornwall, up across the Canterbury Brook and past about

two hundred startled children about to get on their buses at Lee Road School. They finally ended up making a mad dash through a few dozen back yards before crossing Route 32 where they swam the Moodna and helped to harvest a few dozen ears of cow corn on the recently sold Glenoden farm-lands. This is where they were headed, only on a more straightforward path, due west.

Though, by this time of year, the small combine operated by Star Expansion had already picked clean most of the tasteless rock hard cattle corn; Simma, Bella and Brac spent the next few days digging and pawing through what were left. To us, cow corn is as tasteless as sawdust; to the deer it is a feast. They used the slopes above the railroad tracks to sleep and ranged north and south from field to field on the Star lands for about two weeks, all told. Brac now weighed over 70 pounds and Bella around 60. Their mother was a sleek 110. But, with December drawing to an end, the cold winds of the open fields even cut fiercely through the thick hide of their winter coats and Simma knew it was time to seek the shelter of the Black Rock highlands.

In Black Rock Forest there is not the kind of snowfall that falls in the Catskills and the Adirondacks leaving the deer stranded and unable to move freely. For the first part of the winter, the cold weather leaves Simma and her family uncomfortable, but not in danger of freezing to death. Below forty degrees, deer begin to burn their fat to keep warm. Internal deer glands send chemical messages to the rest of their bodies to slow down for the winter and use less energy so the fat lasts longer. As long as they have the ability to move, they can keep warm and find food. At night they seek the warmest places, the low-lying, sheltered, swampy areas where the temperatures can be ten to fifteen degrees warmer

than on the slopes and highlands.

By the middle of January, there has been an accumulation of snow that makes it difficult to get to the acorns and remaining crab apples lost underneath.

Their hard hooves help them somewhat to break the pond ice for a drink or to uncover a patch of barely edible browse. But mostly, the deer have to reach high up for food. Their first choice is the white cedar. Then they start on the twigs of maple and sumac, ash and basswood and finally, the black birch. Grass gives them very little nourishment. Simma has an advantage over her children. Stretched out full length, she can reach up as high as six feet to pull down a tender branch. At times she will actually bring down a branch for one of her children to help them eat.



No matter what they do, the deer begin to lose weight rapidly as they approach February. By the end of February they will have lost up to 15 percent of their body weight, much of it the stored fat from their summer of plenty and their fall corn feasts. For now, they still look healthy due to their thick winter coats.

It is a waiting race for the deer. Their bodies wait for the food of spring while racing with time and the slow loss of energy and fat. The winner will either be the deer's body or the winter itself. Many frozen, half-starved deer bodies are found by the spring thaw, having lost to that winter. But, Simma is strong and she and her young have eaten well. So far the winter is a mild one. By mid-February they are very much alive and still relatively healthy.



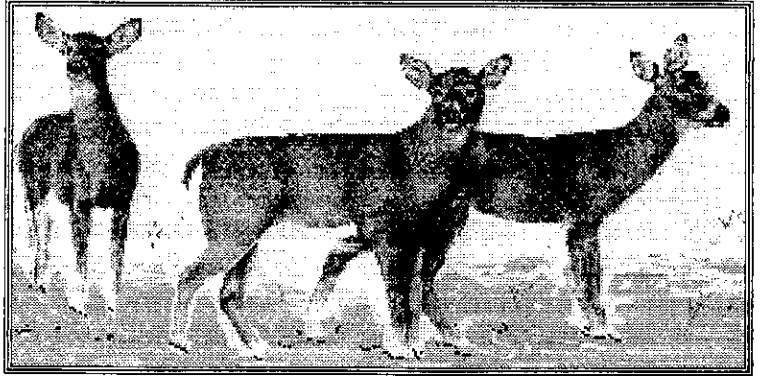
Up to this point, since mid-December, less than ten inches of snow has fallen. Suddenly, down from Canada sweeps a fierce cold front, capturing moist air from the Great Lakes and churning out storm after storm in the Hudson Valley. In a week's time almost two feet have blanketed Orange County. Black

Rock Forest, almost 800 feet higher than the surrounding towns and villages, will be covered with even more snow than the lands below. Simma keeps her fawns hunkered down in an area of the forest we call Glycerine Hollow. There, under snow-covered pine branches that act as blankets against the low temperatures, they spend their long, cold days. During this time, they enter a state of waking sleep, remaining practically motionless. They burn far less fat that way and use little energy.

When the storm finally ends, the deer come out from their snow tent into a beautiful sunny midwinter afternoon. You and I would marvel at the beauty of the deep, new fallen snow. For the deer, it is a death trap. Simma leads the fawns down and out of the forest as fast as they can manage in the deep drifts. She knows of a place from some distant memory that they need to be before it is too late. Four hundred feet below Glycerine Hollow she stamps aside the snow and exposes the last of the bare ground in a distant and forgotten corner of a meadow she once visited. There, buried among the frozen, useless grasses, they uncover a few life-giving ears of old moldy corn....

And so it goes, as week after week they pull themselves through, day by day. During the storms they shelter among

the pines and cedars. Always, there is a desperate search for a bare spot where some forgotten patch of browse may be waiting to be discovered. Their weight drops noticeably during this time and the look in their eyes begins to change from one of quiet patience to the ghostly stares of creatures who know what death looks like.



The snowy weather continues for almost three more weeks. The weather forecasters describe it as a normal winter, just a little more than average snowfall for this time of year, nothing really special. We sit in our warm homes bored and unimpressed, wishing for yet another snow day, turning up the heat and sipping our hot chocolate...



Outside, three miles from most of our houses, the deer wander back and forth from one end of their range to the other, searching for anything to eat. When they have energy, they come down and raid our backyard gardens for frozen buds. But, that is getting harder and harder to do. They are getting tired and weak. The last of the remaining plants are deep under the snow back in Black Rock. But, there is one advantage to the tall snow drifts – they give the deer the height to get to new untouched branches, some a good two feet above their normal reach and the soft nourishment of the cedar twigs Simma pulls down for herself and her young gives them a few more days of life.

The deer do not know when the first weeks of March arrive. To them all the days are the same by now. Though the average temperature is a few degrees warmer than in February, the deer, at the end of their energy reserves, do not care.

Rain and sleet continue to fall. The snow levels do not rise much nor do they get lower. They will not even begin melting until the end of the month up in Black Rock this year. There is simply no food to be dug up or reached any more. March is actually the worst month for the deer. Those that give in and eat food that is not good for them end up starving the important bacteria in their stomachs and end up dying anyway. For many of the deer, their digesting bacteria ruined, they cannot eat properly even if there was food around. Simma and her fawns begin ingesting the very marrow in their bones. It is their bodies' last attempt to pull them through. They are strong enough to keep going though every day is painful for them now. Around them they see the weaker members of their group begin dropping. An older doe falls right in her tracks. She had been walking near them just moments before and suddenly, she is lifeless in the snow. They sniff her and move on. Once Simma falls forward and loses her balance for a step. The fawns watch her, not quite understanding. They too have had dizzy spells. They still look to her for guidance. They follow her still.



Simma gets up and begins to walk. Though she is running on empty, she is not ready to lie down. Inside her, their brother is slowly forming. He is still three months away from being born; but, he has just kicked her as he turned in her womb. It is a message she cannot ignore. It tells her, as clearly as a midwinter afternoon, that she should hold out for a few more days, a week or two at most. There is a change in the air if she can last, for April is coming...

CHAPTER SIX

The first great thaw of spring did not begin until early April. Below, where we live in Cornwall, the land has long since lost all traces of snow. Everything is a dull brown color. As far as the eye can see, the countryside looks like a bleak day in late November, rather than two weeks into the new spring. Eight hundred feet above Main Street, Black Rock is still coated in its white mantle of snow, still lost in winter. However, that time is about to end.

The first plant to push up through the snow is the skunk cabbage. The large leaves are deceiving, for they are not really good to eat for the deer. There is no time to complain for the deer. Too much is about to happen. There is a different smell, a new feel to the very air around them. Bella and Brac do not yet know what it is all about; Simma has vague memories of it. It has happened once before to her. Something is happening – there is a change coming.

Though the nights can still dip below freezing in April, the days are warm and sunny now. Slowly, the snow begins to melt.



The hair from the deer's winter coats are no longer needed. They break off as the deer brush against branches. Bella and Brac are already growing a fine new red growth – their summer hair. Right now, with half of their coats falling off in matted clumps

and the new sproutings coming out here and there in red patches, the deer look worse than in the winter when their thick coats were sleek and even.

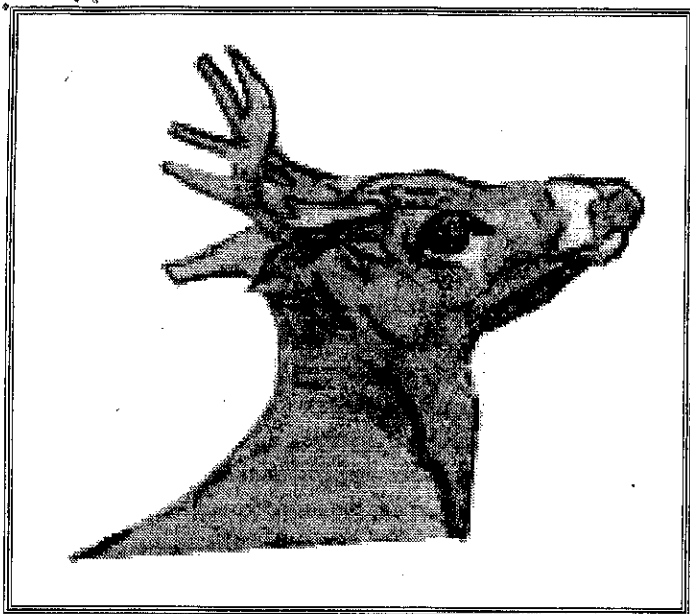
Then the buds come. The warmer, longer days have signaled the beginning. Sunlight has jump-started the forest again. Like a great concert band, the plants begin turning up by sending their shoots out into the air where the audience, a thousand forest animals, are waiting. The deer eat every bud they can reach. They range the forest searching for more. As the snow melts, it exposes great brown and green patches of life. Old seeds, fruit and nuts from last fall are uncovered. They too are quickly gobbled up. The deer are like living vacuum cleaners now.

By the end of April, tiny leaves and early grass begin to appear everywhere. The birds have returned, their songs adding to the symphony of rebirth.

Simma's hunger is even greater than her yearlings. Now she is eating for two. The embryo inside her begins to grow even faster as food is funneled down to it.

“More!”, it calls to her silently. “Don’t stop eating.”

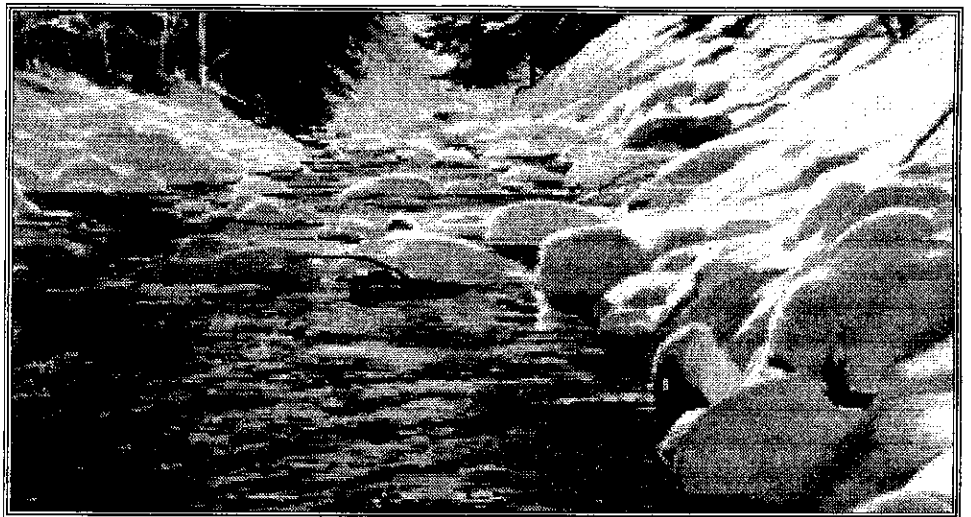




Brac suddenly has to be careful about banging his head on branches. Like new teeth about to break through, little buds are growing on his head. They are the beginning of what will soon be his first set of spike antlers. Right now, the skin around them is very sensitive. In about two months they will grow out and continue to grow until his first mating season begins in November. He too will have to eat more just to support their growth.

Black Rock is now a roaring clockworks of rushing streams coming to life everywhere. The final chunks of late winter ice are rolling and sinking for a last ride downstream before they are lost forever in the near freezing waters.

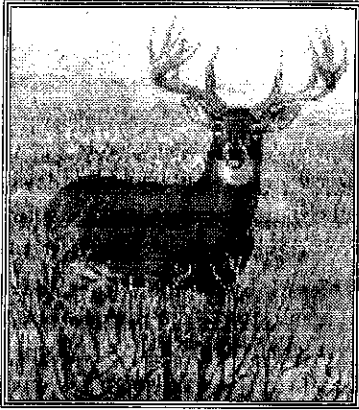
Bella and Brac still watch their mother, eating what she eats. Sometimes they take chances with new foods. Brac feels sad when he sees her, though he doesn't quite know why. Somewhere deep inside him is the awareness that he will be going off on his own soon.



What he doesn't know is that in the next few weeks Simma will begin driving every deer near her away. Nature makes her very grumpy and irritable to help her.

She will need her own space to give birth in. If a curious buck or doe from her own group or even her children are careless enough to come too close to her, they will be sent scattering from a well-placed kick. It is nature's way.

So, playing their parts in this great cycle, Simma's almost grown children leave her. Bella may return in a few weeks and be a part of her group, staying with her for several years as equals. They may even play together someday like two sisters. Brac, on the other hand, is about to begin his



wandering days. Most of the time he will stay by himself, though he might hook up with another buck from time to time. He has a lot to learn, but the rest he must do on his own. If he is smart and careful and lucky, he might live another two to three years. If he is exceptional, he may live even longer.

If there aren't a lot of doe hunting permits issued in Black Rock Forest, and they stay out of nearby areas where there are such permits issued, Simma and Bella will live for another half dozen years. This is, if the winters aren't too harsh and there aren't too many deer to overeat the browse within their range. Each will give birth to several more fawns before their time is over.



If you are lucky enough to be hiking in the right place at the right time, say about sunset in a certain meadow by a mountain stream in Black Rock Forest, you might see them or one of their children bounding across an orange-lit hollow below your trail. If you are fortunate enough to see such a sight, watch real carefully as their white tail flashes a warning to others in the dimming light. For now you can think of that flash of white as a wave of hello to you.

CHAPTER SEVEN

Deer live in our woods alone and naked, without supermarkets and doctors, without wood stoves and blankets, pocketknives and Kleenex tissue. They live outside twelve months of the year. Blizzards and ice storms, coyotes, bears, wild dogs and hunters are part of their everyday lives. They do not know how to use a microwave and they have never eaten at a salad bar. Yet, they weigh over a hundred pounds and can run faster than you can pedal a mountain bike. Though many other living creatures, including us, would like to kill them, not one deer will ever dial 911. Every year thousands of deer roam North America and are more a part of the forests than we will ever be despite our high tech back packs, our winter sleeping bags and our L.L. Bean boots.



Deer do not survive in the wilderness because they are smarter than all the animals around them. Nor are they stronger, nor braver, nor better at climbing or digging. They survive because they have thousands of years of adaptations built in to their behavior to help them. They survive because their bodies have evolved to help them get through a hundred little emergencies that would have humans running to the nearest motel or telephone within five minutes.

Within minutes after being born fawns can walk. They grow very quickly on their mother's milk. It has more than twice the protein and fat than a cow's milk has. Fawns need to grow faster than cows because they need to be able to run from predators at an early age. Within four months they are weaned and are only a little smaller than their mother.

From the moment it is born, nature has equipped a fawn to survive. Born with a pattern of white spots on a brown fur, it matches the pattern of sunlight shining on the late spring forest floor. When the fawn remains perfectly still, it is practically invisible to a predator passing close by. If that predator actually detects the fawn and comes too close, the fawn will make a fast break for it, only to stop suddenly when it is just out of sight. It will freeze again right where it is. Nine times out of ten the predator will miss it the second time. The behavior of laying still is not a learned behavior. It is inborn.



Later in its life when the fawn is stronger and faster it will learn from its mother who its enemies are and when it should run. They are born runners, able to bound across uneven ground in great leaps



without ever taking a lesson. Except in deep snow, no pack of dogs, black bear or even the fastest olympic runners can match the speed of the deer running in the forest.

Suddenly, when the fawn is a little older, a change takes place in the young deer's body. It gives off its own odor, a scent which becomes necessary for survival. Without this scent, the fawn's mother would not recognize it. At the same time, the mother deer begins licking the face and mouth of her young. These licks also have a purpose. They transfer important bacteria from the mother to her youngster. This is the bacteria that will help the growing deer digest the plants it will begin eating in the forest. The mother deer does not suddenly shout to her young, "Well kids, its time to get some of Mommy's bacteria so you can eat and digest some food on your own." It is an inborn behavior of the mother deer to begin giving her young the bacteria.

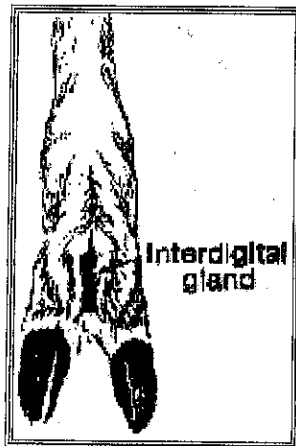
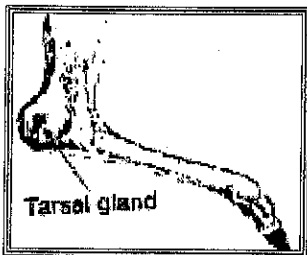


The deer has a four chambered stomach to help it to digest its food. It can eat its food and store it in the first stomach. If chased by a predator, the deer has the ability to run quickly and bring up the food later to digest it through the other three stomachs when it has time.

Animals that have four parts to their stomachs are called ruminants. The four parts allow the animal to digest woody plant foods that humans could not digest. Could you imagine eating tree bark or twigs? Deer can eat these things. By bringing the partly digested plants up and chewing on it for a while (called "chewing its cud") and then swallowing it again for more digesting, the deer can slowly break down the plant fibers into the kind of sugar its body can use for energy. Cows and camels are also "ruminants". Having this kind of

digestive system allow the deer to live in a place where we could not possibly live. They can find food in places where we would simply starve to death if we were left there.

When fawns get older they develop scent glands on their bodies to help them survive. A gland is a small organ in the body that makes a chemical to help the animal. Deer have two main types of scent glands. The first type makes a scent that tells other deer if there is danger. This scent will tell other deer that the deer giving it off is afraid or excited. These glands, the tarsal and the metatarsal glands, are located along their back legs. The second kind of gland, the interdigital gland, is located between the toes of each hoof. This gland produces each deer's personal smell. The deer use this gland to tell others in its group where it has been and where it is going. Male deer use this gland to help mark their territory.



Deer can also communicate by bleating, whining, or making loud "whiew" sounds. They blow air out of their nostrils to make some sounds. But, to warn other deer silently with a smell instead of a sound can be very helpful in not showing the enemy exactly where they are. Then, when they actually run away, the flash of white from the tail and underbelly hairs serve to give a final warning to their friends and often confuses the enemy as the deer bound off.

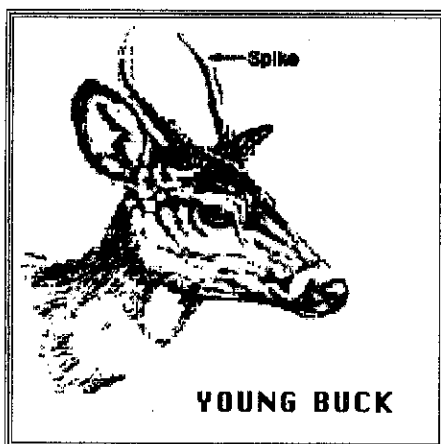
If they have to, deer can run more than 40 miles an hour for short bursts. They can hold speeds of 25 miles an hour for longer periods of time. Deer can high jump over nine

feet and leap over 25 feet wide creeks with ease. However, when the snow is deep, their small hooves are not adapted for running in it. Since they sink in, they do not walk about when the snow is deep. Instead, they stay in one place or "yard up" where they are less likely to be caught in the open by a pack of dogs or humans on snowshoes that can catch them.

A deer's winter coat is made up of thick hollow hair. The air that is trapped in the hairs make great insulation from the cold. They also help the deer to float, should they have to swim away from danger.

The deer have a gland called the thyroid gland. When the temperatures get very low, this gland tells the body to slow down at a time when the deer need to burn less fat to survive. For periods of time the deer can almost hibernate. Even the embryo in the doe's body does not grow much during this time, nor do the antlers on the male deer.

Antlers on male deer will only grow large if the deer have had a good food year. When the days start to get longer in March or April the growth begins. This comes right at a time when food begins to be available again. A lot of the food eaten by bucks go towards the growing of its antlers. For young bucks, this is especially hard because they also need more food for growing up. They do not



usually develop large antlers during their first few years. Only when they are older and their bodies no longer need food



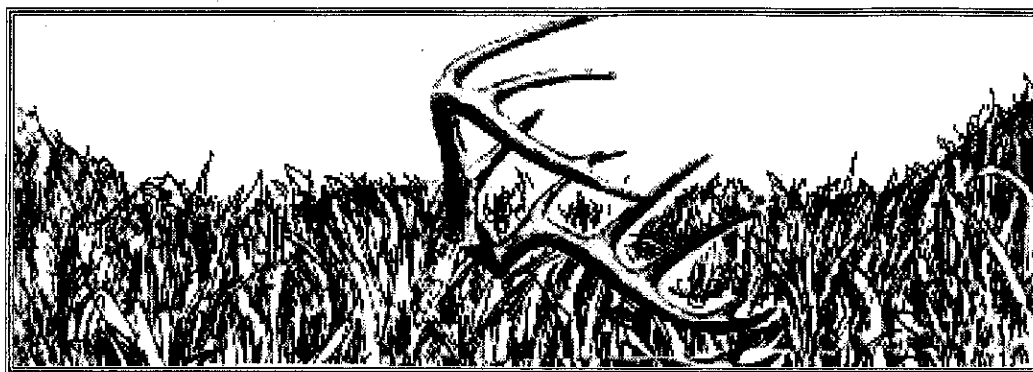
to help them to grow to their full size can they use this food to help their antlers fill out to a full rack.

Male deer have a gland that produces a substance called testosterone. This chemical triggers the growth of their antlers. At first the antlers are covered with a thin skin with fine hairs. This skin, called the "velvet" is laced with blood vessels that "feed" the antlers and help them to grow. By late August or September the growth has stopped. The velvet is no longer needed and it becomes itchy to the buck who rubs it off against trees and rocks. The horns underneath now look polished and ready for challenging any buck who comes near his territory.



Around this time the male deer's glands make a lot of testosterone. This chemical is very much like the steroid that human athletes use to make them run faster or lift more weight. It also makes them get into fights more often. This is exactly what happens to the male deer when they get a burst of this natural "drug". During the mating season the male deer need to be aggressive to defend their territories and get does to mate with them. If they were like that all year long, it would probably kill them. (As it often does to human athletes, which is why steroids are illegal.) For a short time though, the males with the largest antlers, the toughest, bravest bucks are the ones who "get the girls" and make the most babies. Unfortunately they are also the ones that hunters go after the most for their beautiful racks. Mating season is a dangerous time for bucks, for they are like fools in love, taking terrible, careless chances just to find a willing doe. That is why only the smartest, luckiest of them live beyond three seasons.

After the mating season is over, the testosterone level drops. The male deer become a lot calmer. This also triggers the antlers to start coming off. It takes a lot of energy to carry around those heavy horns. Now the bucks will need that energy, just like the does, to survive. Have you ever wondered why it is not easy to find a set of antlers in the woods? It is because they provide a wonderful food for the mice and other small animals in the forest. They eat them so quickly we have little chance of finding them unless we move quickly.



Nothing in the forest is wasted and everything has a place and a purpose. As we have read, nature can be harsh and deadly, especially in the winter for the deer. But, we have also read that the reason the white tailed deer survive so well is because nature also gives them many gifts in the way their bodies are adapted to an environment we could never hope to live in. It has made them a special part of Black Rock Forest and for all of us who see them there, a special part of our lives.

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Many of the pictures and photos were taken from issues of The Conservationist, from July 1986 through December, 1995.