

FLEXIBILITY

HOW DOES THE DEER ILLUSTRATE THE NEED TO ADAPT TO THE WISHES OF THE ONE IT SERVES?

In the east a brilliant glow burst over the treetops. Its fiery light filtered through the leaves, creating dancing silhouettes of shadow on the ground. A doe walked along the forest path on that beautiful June morning.

Normally this graceful creature would have browsed among the tender new shoots of grass. But today was different. The doe wasn't interested in food. When the morning hours passed, she quietly slipped away to a secluded place where she would give birth to a fawn.

This was the first time the two-year-old doe had gone through this experience, so the probability of having more than one fawn was remote. The birth would be over in ten minutes.

Soon it was busily licking the small, white-spotted fawn. Contentment welled up within as it washed the little one. The doe did this so vigorously that the unsteady fawn was knocked off its wobbly feet.

Hungry from the exertion of birth, the fawn began nuzzling its mother's white belly and suckled the warm, nutritious milk. When full, it dropped off to sleep. For the next three days it would remain practically motionless, lying with legs folded underneath its body and neck extended.

During this time of the young fawn's life it is provided with a special protection against enemies. It has no odor to betray its location. A predator could walk right by it, and the infant with its protective coloration would still be safe, if it remained perfectly still.

The doe concealed its young in a secluded spot, returning six or seven times each day to feed it. Thus it ensured that its own scent would not endanger the fawn by attracting enemies.

As the days passed, the fawn grew rapidly. With its growth came an increasing desire to wander. This was a dangerous matter that the mother had to deal with immediately in order to prevent it from becoming a habit. In no uncertain terms, the doe made it very clear to the young fawn that when hidden, it must stay there. Every time it was disobedient, the doe firmly pushed it back down with its muzzle. If firmer measures were needed, the doe would raise her forefoot, place it on the fawn's back, and forcefully press it to the ground. In spite of the mother's stern disciplinary actions, however, the young fawn still continued to wander on occasion.

One day a swallow-tail butterfly caught its eye. The fawn stood up to investigate. Its movement disturbed the insect, and it quickly flew away. As the fawn watched the bright wings flutter out of sight, terror and fright suddenly gripped the creature. There, just a few yards away, stood a hungry coyote on the prowl for food.

It was too late for the mother to intervene. The quick and powerful coyote had caught the movement of the fawn. With a few well-paced strides, the coyote lunged at the defenseless creature. One powerful snap of its jaws, and the fawn was dead.

The little deer had needlessly lost its life because it failed to adapt to the wishes of its mother.





FLEXIBILITY

HOW DOES THE HUMMINGBIRD ILLUSTRATE FLEXIBILITY BY CONSERVING ITS TIME AND ENERGY TO COMPLETE PRIORITIES?

It was twilight. All the daytime birds were settled, resting in their perches for the night. All the birds rested, that is, except one, the smallest of them all—the tiny ruby-throated hummingbird. It was busily flitting from flower to flower, trying to get every last bit of food before the light was gone and it would be forced to stop.

Weeks earlier the hummingbird would have gathered this food for the purpose of sustaining itself through the night. But now its motivation was different. It was more determined. The hummingbird was about to undertake a major task which, if it wasted its resources, would prove disastrous.

Twice each year the ruby-throated hummingbird travels from southern Canada to as far south as Panama. The distance is long, but the bird can make most of it with relative ease. Along the way the voyager has many feeding stations which give it the needed strength to continue.

Gram for gram, the hummingbird has the greatest energy output of any known warm-blooded animal. The reason this tiny bird burns up so much energy is because of its very small size. Just as a teaspoon of hot water loses heat faster than a kettle of hot water, so a tiny body such as a hummingbird's will lose heat faster than a larger body. Because of this rapid heat loss the hummingbird must burn proportionately larger amounts of energy in order to keep warm.

As the bird darted from flower to flower gleaning nectar and insects, it felt the coolness of the evening. The temperature was dropping rapidly. In the morning it was going to undertake the most dangerous leg of the migration. Tomorrow's flight pattern was five hundred miles over treacherous

gulf water to Mexico. If the hummingbird ran out of fuel, it would drop into the sea and perish. There could be no turning back.

Extra energy was required for the hummingbird to maintain its body temperature during this cool night. Darkness would confine it to a perch, prohibiting it from gathering any more food. The bird had stored a certain amount of fat to serve as fuel, but if the trip were to be successful, it could not afford to take the chance of using any of the reserve now.

Although this could be a serious problem, the flexible little hummer would not let this hurdle interfere with the priority of reaching its destination. The tiny traveler would regulate its energies by a simple but effective means. It would do something very unusual for a bird. The hummer would hibernate for the night.

The bird permitted its body to go into a torpid condition. By doing so, only one-fifth to one-sixth the amount of fuel that normally would have been needed to maintain the warmth of its body was used. In this torpid condition the hummingbird became motionless—so much so that one could actually touch the bird and it would not move.

The little bird passed the night hours in this condition. In the morning when the sun rose, its warm rays penetrated the body of the little creature and the bird slowly began to stir. Soon it was back among the flowers sucking nectar and capturing small insects in final preparation for the journey.

The trip would be successful. This three and one-half inch, feathered creature had regulated its energies to allow it to accomplish the remarkable feat of flying five hundred long miles—non stop.





Verity Johnson

FLEXIBILITY

HOW DOES THE BITTERN ILLUSTRATE FLEXIBILITY BY BEING FREE TO ACCEPT THE BEST COURSE OF ACTION?

It was a perfect spring day. All the senses verified it. The dampness of recently melted snow intensified the pleasant aroma of budding cottonwoods. Frogs proclaimed spring as their noisy croaking called to potential mates. The voice of a male red-winged blackbird competed for a hearing as it announced to the world the boundaries of newly-established territory.

Tender new shoots had popped up among the weathered remnants of last year's cattails. Excitement filled the air. Nature was preparing to bring forth new life.

This was the spot that a female bittern had chosen to build her nest. Last year she had raised her young in the swamp, and she was once again anticipating the same success.

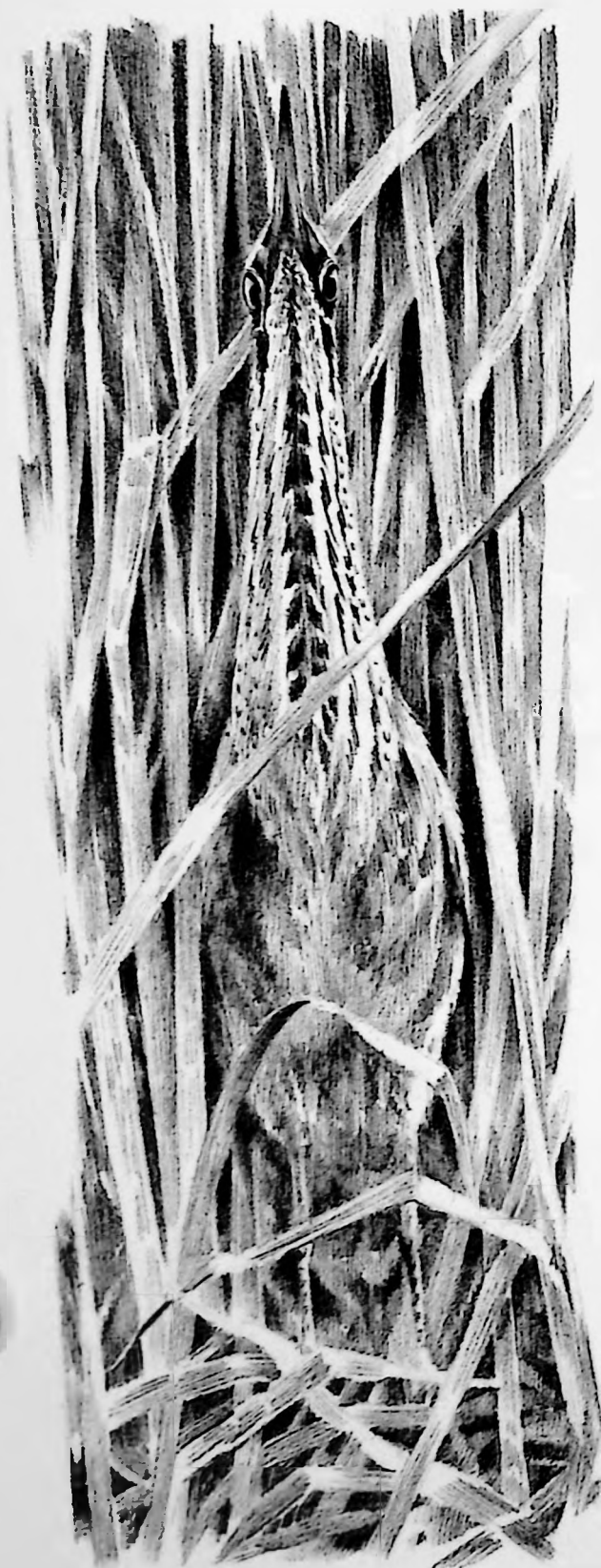
She had already gathered an assortment of dried reeds and constructed a well-concealed nest one foot in diameter and a few inches high. In addition to the secluded site of the nest she had taken another precaution to ensure secrecy. She had constructed two paths—one for entering and the other for exiting. The parent birds would never fly directly to the nest itself. Instead they landed at the end of the entrance path and walked in. Similarly, the birds left the nest by walking out to the end of the exit path and then flying away.

A feeling of contentment rushed over the bittern on that beautiful spring morning. There, in the center of her nest, lay a single egg. This was the first; she would probably lay four more. But as she stood there, her contentment suddenly turned to fear and anxiety. Her preoccupation with the nest had allowed the approach of a red fox to go unnoticed. The fox was drawing dangerously close as it prowled the marsh in hope of securing an easy meal.

Any course of action would have to be executed quickly. The bittern had three choices. She could slip down the exit path and fly away. She could stand her ground and try to fight off the intruder. Her bill was a lethal weapon, extremely sharp, and could be wielded with deadly accuracy. There was a third option. Although it would seem unlikely to succeed, this was the course she chose. Pointing her bill upward, she froze. In an amazing camouflage, the light and dark stripes which cloaked her throat and breast allowed the bird to blend perfectly against the reeds.

Then the breeze stirred, and the reeds slowly began to sway in the wind. The bittern played its role to the fullest. Gently, she too, began to sway. Her whole body participated in the disguise. From the bill to the legs, each part moved to produce a sway that defied detection from the movement of the surrounding cattails.

The prowler looked in the direction of the bittern. The wind was blowing the wrong way for the fox to detect the scent of the bird and because the bittern had executed the part so well, it remained undetected. The predator moved on. By taking a few preliminary steps the bittern was flexible and free to choose the best course of action to protect her nest from the fox.





FLEXIBILITY

HOW DOES THE VARYING HARE ILLUSTRATE FLEXIBILITY IN RESPONDING TO UNEXPECTED CONDITIONS?

Only survival was on the mind of a young snowshoe rabbit. This doe was one of last year's offspring, and now she prepared to bear young of her own. She could feel life within her but was uneasy. Nothing seemed right and she had the terrible sense that disaster lay ahead.

The winter had been long and cold. Only half of the normal amount of snow had fallen that year. The previous summer and fall had been the driest in recorded history. The drought caused dangerously low water levels in swamps, hindering new growth and threatening existing plant life. Snow was desperately needed to replenish the water supply for spring growth.

These harsh conditions and the lack of food had taken their toll among the hare population. Many were starving and others became too weak to escape the teeth of the bobcat or the sharp talons of the snowy owl.

The snowshoe rabbits depended on tender twigs and needles of the pine, white cedar, spruce and tamarack trees for their winter food supply. The shortage created intense competition among the hare and forced them to girdle the trees, stripping them of the bark and shoots within their reach.

The doe was aware that soon she would not only have to provide for herself but for her young as well. Her loss of weight was evident by her gaunt appearance. The harsh winter conditions had stripped her of needed food reserves within her body. Chances were that her young wouldn't survive under these conditions. There was also the possibility that she herself would die in the process of giving birth. There just wasn't enough food to prepare her for this undertaking.

The fact that she was not physically prepared to produce this, her first family, and the stress of securing food had triggered a process deep within her body. The three-week old embryos stopped growing. Her body responded to her condition of physical weakness with a process called resorption. The mother completely reabsorbed the embryos within her own system.

Now she was free to concentrate on replenishing her needed strength and wait until environmental conditions were favorable to allow her to raise strong, healthy young. The snowshoe rabbit had been provided with the flexibility to cope with the changing, unexpected conditions of her environment to ensure that she would bear healthy young and would have the strength to care for them.

