

RATTLESNAKE

(The following article was found in one of the cabins the Loevenmarks, purchased from the Andersons in 1975. The article "Know the Facts About Rattlesnakes" was published in the Weekend Magazine Vol. 9 No. 26, 1959.):

The Loevenmarks kindly shared the article with me, we thought you would find it interesting, it is over 50 years old. I sent a copy of the article to Glenda Clayton, from the Georgian Bay Biosphere Reserve, (she was at our annual KHAA annual general meeting several years ago) and her comments are noted by an asterisk *.

In Canada you've a greater chance of being struck by lightning than of dying from snake bite but it's wise to

KNOW THE FACTS ABOUT RATTLESNAKES

by Jack Carroll

Weekend Staff Writer

It was a sunny August afternoon in 1956. Mrs. Helen Hay was sitting on the edge of a low boat dock, dangling her feet in the warm waters of Six Mile Lake, near Georgian Bay.

Sitting beside her was her husband, a Toronto bank manager; and also Pat Stafford, family friend and owner of a Toronto shoe store. On shore nearby played the Hay and Stafford children.

It was just before 2 o'clock when the three grownups saw a small snake swimming toward them from the centre of the lake. Stafford later estimated it to be about 30 inches long. Snakes had been seen in increasing numbers around Georgian Bay cottages that year, apparently driven from their usual haunts by blasting on construction of the nearby Trans-Canada Highway. Workers of one construction company once counted 117 dead rattlesnakes after a single large blast.

**I highly doubt that 117 dead rattlesnakes were found after a single blast unless it was a hibernation site. However hibernation sites are usually located in conifer wetland so why would they be blasting in a wetland? Could have been a foxsnake hibernation site since they are typically associated with rock. Who knows, but I seriously doubt one blast could impact over 100 rattlesnakes.*

As the snake slithered onto a log supporting the dock, the men swung their bare legs up out of harm's way.

Mrs. Hay laughed. "Oh, it's only a water snake!"

She reached down and picked up the snake by the middle of its rather thick body. The triangular head instantly flashed back and struck her on the right hand, causing her to drop the snake back in the water.

"It bit me," announced Mrs. Hay ruefully, examining her hand, where she felt a slight stinging sensation.

Mrs. Hay did not know it, but she had received a fatal dose of one of the deadliest rattlesnake venoms known. The snake was the Eastern Massasauga, or *Sistrurus catenatus*, a small grey-brown, blotched rattlesnake common to the shores of Georgian Bay and the Great Lakes. Mrs. Hay was to die one week later, the first known Canadian victim of the Massasauga. Her death was to awaken Ontario vacationers to many little known facts about this potentially deadly reptile.

**yes the venom is highly toxic however they only have a small amount therefore their ability to actually deliver a lethal dose is quite limited.*

Even after the snake had struck her, Mrs. Hay and her companions still assumed it had been the relatively harmless water snake. Not too many people are aware the rattlesnake swims with equal ease. They have been sighted two and three miles offshore in Georgian Bay; one Florida rattlesnake has been found 20 miles at sea. They have been known to climb aboard small boats, much to the discomfiture of the boaters.

**yes our rattlesnakes can swim however I've not had a report of a massasauga entering a boat. Foxsnakes and watersnakes both readily climb into boats!*

A short time later Hay and Stafford saw the snake on the dock again, this time sunning itself on top of the dock in a shallow crack between two boards. The two men still assumed it was a harmless water snake.

"You hold it down," said Stafford. "I'll hit it on the head."

Hay pinned the snake's body down with two rubber swim fins he was carrying. Stafford took off one of his bedroom slippers and tried to hit the snake on the head with the hard heel. Stafford was surprised at the speed with which the snake evaded his first half-dozen blows and the way it struck back at him. His face was so close to the snake he could see two fangs erect at the front of its upper jaw as its mouth gaped open. He was unaware that these two fangs are the one and only positive identifying feature of a poisonous snake. By some miracle, considering the weapons they were using, the men finally managed to kill the reptile without being bitten.

Stafford beat the head to a pulp, and Hay flung the body back in the lake. Stafford said later that he had noticed several bony, vertebra-like objects at the tail when they threw the body in the lake. But he still did not realize he had just killed a Massasauga rattlesnake with his bedroom slipper.

(Incidentally, the absence of a string of rattles is not a safe indication you are dealing with another type of snake. Some rattlesnakes may lose their rattles by accident. Also, all are capable of delivering venom from the moment of birth.)

About 20 minutes after the bite a painful swelling appeared on Mrs. Hay's hand. A closer inspection revealed two fang marks about half an inch apart.

A neighbour looked at them and said, "That looks like a rattlesnake bite."

Mrs. Hay's husband put alcohol on the bite, made some superficial cuts and attempted to suck out the poison. The hand rapidly became more swollen and painful. Mrs. Hay was put in a boat and taken to the nearest physician - a considerable distance.

**do not cut and suck the bite - useless action.*

It was three hours before she saw a doctor, who administered antitetanus, Benadryl, penicillin and codeine. Although antivenin was not administered, this treatment could be considered acceptable in a province where even the untreated bite of the Massasauga had never been known to be fatal. Supplies of antivenin were not widely distributed, although a few cottagers' associations had obtained the serum.

The swelling had now extended up Mrs. Hay's forearm, and the area was very painful and bluish. She returned to the cottage at Six Mile Lake.

The following day her condition was worse. Again she returned to the doctor's office for examination and treatment. In the absence of the first doctor, she was seen by another. Again she returned to the cottage.

Meanwhile a supply of rattlesnake antivenin was discovered at a small store near Six Mile Lake. The store owner had purchased it two years before because some dogs in the area had been bitten by rattlesnakes.

It was decided not to use this antivenin to treat Mrs. Hay, partly because it was believed she had already received adequate medical treatment and partly because no one present was familiar with administering antivenin. The fact is that the antivenin was two years old or that it was some time since Mrs. Hay had been bitten should not, if they did, have played any part in this decision. True, antivenin should be stored under refrigeration. But under this optimum condition it has a shelf life of five years, perhaps longer. And although the sooner the better, antivenin may be administered with possible benefit to a rattlesnake victim right up to the coma stage. This decision may have been a critical one in the struggle for Mrs. Hay's life.

By Aug. 15, three days after she had been bitten, Mrs. Hay was in great pain. Her right arm was discolored and swollen to almost three times its normal size. The tissue destroying venom was doing its deadly work. She was flown to the Orillia Soldiers' Memorial Hospital. Here, again, no antivenin was administered, according to the Canadian Medical Association Journal. The discoloration and swelling had now spread to her left arm. According to published reports hospital doctors believed the symptoms had reached their peak and that her condition was improving.

This is a frequent error in rattlesnake fatalities. Gram for gram of dried venom, the poison of the Massasauga is almost the most toxic known. The toxins have so far defied isolation and accurate analysis. They seem to have a two-pronged effect: one attacking the cellular system with visible swelling and discoloration, the other attacking the nervous system.

Often the visible symptoms appear to be clearing up when suddenly the neurotoxins appear to take effect, with symptoms of heart failure or breathing difficulty, and the patient sinks swiftly.

**it's a hemotoxin and cyrotoxin not neurotoxin. A bite results in hemorrhaging and tissue damage.*

At midnight Sunday, a week after she had been bitten, Mrs. Hay complained to a nurse of feeling unwell, of pain in the chest and difficulty in breathing. Her condition rapidly deteriorated and she died at 3:45 A.M., Aug. 20, 1956. The idea that the Massasauga rattlesnake could kill a human was slow to gain acceptance. Shortly after her death it was reported that Mrs. Hay had died "of a blood clot". Many believed there must have been other complicating factors. Local authorities announced no inquest would be held. Fortunately the office of Attorney-General Kelso Roberts ruled that an inquest should be held. Autopsy evidence at the inquest, and later reported in the Canadian Medical Association Journal of April 15, 1957, indicated there was no post-mortem clotting of blood and that her death had been the result of conditions caused by the snake venom.

The unfortunate death of Mrs. Hay has created a new awareness of the potential danger of the Massasauga in Ontario. (The provincial Department of Health has set up antivenin depots throughout danger areas).

It is being realized that lack of earlier fatalities in Ontario has been probably due as much to good luck as good management. Less than half a dozen persons are bitten in Ontario in an average year. One reason for this low figure is that the Massasauga is rather sluggish and timid and will generally avoid humans if left alone.

A second reason is its small size. It usually does not manage to inject a great deal of venom in a single strike, especially through clothing.

Bites have usually been on arms or legs, making tourniquet treatment practical. But a strike in the face or trunk could be much more dangerous. And a strike into a vein or artery, such as those close to the surface of the skin in the wrist and ankle, could be extremely dangerous ...of rapid distribution of the venom through the bloodstream.

The danger is greatest for children.

Every human body has a certain amount of ability to neutralize the venom. The child's body, being smaller, has proportionately much less resistance. And it is the vulnerable child who is most likely to get bitten through lack of knowledge or thoughtlessness. A high proportion of those reported bitten are children.

There is no need for panic. Over a recent five-year period in the United States, it was reported more people died from the stings of bees, hornets and wasps (82) than from rattlesnake bites (55). In Canada, statistically, you have a much greater chance of being struck by lightning. Besides Mrs. Hay, there has been only one other known death in the current century (1900's). This was a nine-year-old boy in British Columbia, who was bitten while handling Pacific rattlesnakes.

"There is no need for fear of rattlesnakes to spoil anyone's vacation anywhere in Canada," says Shelley Logier, associate curator in charge of amphibians and reptiles at the Royal Ontario Museum. "You are in far greater danger in the automobile taking you there."

Despite the odds, no one should minimize the importance of avoiding rattlesnake bites, or minimize the importance of prompt medical treatment afterward.

There are four - perhaps now only three- species of rattlesnakes in Canada. (There is no other poisonous snake here.) The Timber rattlesnake was formerly found along the Niagara escarpment. It was reported to have killed a Canadian soldier at Queenston in the War of 1812. The only place it has been seen in recent years is in the rock-filled Niagara Gorge, below Niagara Falls. That it still existed even there was pooh-poohed by an editorial in The Niagara Falls Evening Review in 1941.

A week later Harvey Caswell, of Niagara Falls, killed a 47-inch Timber rattler there with a crowbar. Then he took it to the editorial offices of The Review and dumped it on the floor as irrefutable evidence there were Timber rattlers in the gorge.

Toronto school teacher Frank Darroch captured a live Timber rattler there the same year, which is now preserved at the Royal Ontario Museum. However, snake hunters have failed to sight any Timber rattlers there since.

Herpetologist Logier says, "I am inclined to believe they are now extinct in Canada."

The Pacific rattler is found in a small part of southern British Columbia and the Prairie rattler in southern Alberta and Saskatchewan.

The Eastern Massasauga's sole habitat is around the shores of the Great Lakes, going only about 20 miles inland. It is most common in some Georgian Bay areas and has been seen in numbers in swampy ground around Port Colborne on Lake Erie. (It is sometimes referred to as the Swamp rattlesnake.)

**Massasaugas can be found as far inland as Gravenhurst. The populations tend to move inland when there are large rivers, i.e. Severn, Magnetawan.*

The best rattlesnake medicine is to know the area where they may be found, learn to recognize the snake, and then avoid it.

Studies reveal that most bites are on the legs or feet, due to stepping on or close to snakes while walking, hunting, fishing, working or playing outdoors. The snake's protective coloring makes it hard to spot.

The next largest group of bites occurs on the hands and arms from people picking up objects from the ground, reaching into holes or crevices or handling snakes. Many are bitten while picking flowers, berries, gathering kindling, cutting brush, turning over stones or pieces of wood, stepping over logs (instead of on them), drinking from springs, crawling under fences, or walking outdoors at night without a light.

Most bites could probably be avoided by this simple rule: Never put your hands or feet in places you cannot see clearly.

Handling rattlesnakes, of course, should be left to experts. With only an inch or so of its head free, a rattlesnake can turn and bite the hand holding it. Even a dead rattlesnake is not safe. Many are bitten attempting to cut the rattles from "dead" or mortally-wounded snakes.

Rattlesnakes have a high reflex persistence after "death". In laboratory tests in-which the heads were completely severed from the body, the heads continued to bite for nearly an hour after they had been cut off.

Stepping outdoors at night without a light, or with legs bare, is inviting trouble. Rattlesnakes are nocturnal. They can strike unerringly in complete darkness, guided by the heat-sensitive pits in the sides of their heads.

Sleeping outdoors unprotected in rattlesnake country cannot be recommended. Rattlesnakes have been known to climb into sleeping bags and beds and to strike when disturbed.

TRUE OR FALSE?

HERE'S THE SCORE ON RATTLER LORE

Do rattlesnakes ...

1. Bite?
2. Dance?
3. Hiss?
4. Climb trees?
5. Swim?
6. Hypnotize birds?
7. Swallow their young in time of danger?
8. Always rattle before striking?
9. Add one new rattle each year?
10. Hear with their tongues?
11. Strike faster than the eye can see?
12. Like to bask on rocks or sand under a hot summer sun?

ANSWERS

1. NO, not necessarily. High-speed electronic flash photos taken by Walker Van Riper, of the Denver Museum of Natural History, show the normal strike of a rattler is a stab made with the two fangs in the top jaw. Rattlers occasionally bite but it is not necessary, as was previously believed, for the rattler to close its jaws in a biting action to force the poison through the hollow fangs.

2. YES. Many species of rattlesnakes have been observed in the "male combat dance". Two males will rear up from the ground to a height of 12 to 18 inches, face each other and weave and sway together in a ritual dance, as long as half an hour. Occasionally one will push the other to the ground but no damage results and the "combat dance" always ends in a tie. It is believed associated with the mating instinct, although not confined to the mating season.

*What's the point of a tie! The winner gets to mate with the nearby female.

3. YES. It is easily proved that an aroused rattlesnake hisses as well as rattles, by tying a cloth around the rattles. Normally the sound of the hiss is not heard over the sound of the rattle. *I've never heard a rattlesnake hiss and who wants to tie a cloth over a rattle!

4. YES. Many species of rattlesnakes have been observed in bushes and trees as much as 25 feet above the ground. The Eastern Massasauga found in Ontario is not as well adapted for climbing as other species. *no for our rattlesnake - they are poor climbers that's why a fence of one metre prevents them from crossing roads. Foxsnakes on the other hand are fantastic climbers.

5. YES. Rattlesnakes, as other snakes, are good swimmers, their buoyancy increased by bladder-like prolongation of the lung. They can also strike while swimming and are to be avoided. The Eastern Massasauga has been seen over a mile from land in Georgian Bay; the Diamondback 20 miles at sea in the Gulf of Mexico.

6. NO. There is no scientific evidence that rattlesnakes can hypnotize birds or other prey. On the contrary, mice and rats placed in rattlesnake cages run around unconcerned, sometimes even eating the snakes. Wild creatures "freezing" at the approach of a snake may be merely trying to escape unobserved because of their natural camouflage.

7. This is the most controversial myth in the world. Every time it is denied, a large number of people claim they have eye-witnessed the event. Herpetologists deny the myth, on these grounds: (a) of the thousands of snakes dissected in laboratories none has ever had its young in its stomach (b) of the thousands of snakes in captivity in zoo construction of a rattlesnake is such that it would take at least one minute to swallow each one of its young; (d) once in the stomach the young would shortly be subject to suffocation and the gastric juices. *just to confirm, the answer is "NO"

8. NO. The rattlesnake may rattle before striking but sometimes strikes swiftly and silently, depending on the species and individual temperament of the snake. Certainly the rattler is not going to warn its prey and give it the chance to escape. *they can hear airborne sounds but only within a limited frequency range. Most sounds are perceived by ground vibration.

9. NO. Rattlesnakes acquire a new rattle every time they shed their skin, which may be as much as six times in one year. The average is around three times a year. Because of this the number of rattles is only a partial clue to age, and also because of the loss of rattles through breakage, which is common.

10. NO. The darting tongue of a rattlesnake is part of its sense of smell. It picks up scent particles in the air and conducts them to an olfactory organ in its head. Having no ears, the rattlesnake is deaf to airborne sound as we know it. It may be aware of vibrations conducted through the ground.

11. YES. But even this is not as fast as we imagine it to be. Tests show the average speed of a strike to be 8.1 feet per second. The boxing jab of an average person is around 18.1 feet per second, or twice as fast. In a golf swing, the hands of a golfer are moving at about 40 feet per second.

12. NO. Being cold-blooded creatures with no internal mechanism for controlling their body heat, rattlesnakes take on the temperature of their surroundings. This leads them out of their

caves and crevices to bask in the sun in spring and fall when temperatures are normal. But in summertime when rocks and sand become abnormally hot, rattlesnakes will emerge into the direct sun only for short intervals. If pushed out into a hot sun with a stick and kept there, rattlesnakes will go into convulsions and die within five to 20 minutes, depending on conditions.

If Snakebite does occur, here are correct treatment protocols: from Glenda

1. Do not panic, remain calm. Remember that the person may have been bitten but no venom injected.
2. Call emergency services to request transportation to hospital. If possible, carry the patient or assist them in reducing activity. Ensure they are laying down while waiting for transportation. Remaining calm and inactive will slow the circulation of venom through the body.
3. Wash and cleanse the wound.
4. Remove any jewelry from the bitten limb in case of swelling.
5. Loosely splint the limb to reduce movement.
6. Always seek medical attention.

NEVER apply a tourniquet, ice, cut the bite area or apply suction.

TAKE NOTE:

Keep the danger of snakebite in perspective. The last fatality in Ontario linked to snakebite occurred in 1962 and that person did not receive timely medical attention.

Thank you to the Loevenmarks for the original article and thank you to Glenda Clayton from the Georgian Bay Biosphere Reserve for the updates.

Submitted by: Susan McKay