

# OBSERVATIONS OF AN EASTERN YELLOW-BELLIED RACER IN CAPTIVITY

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On July 5, 1976, a slender, olive green snake with a yellow belly was brought into the Museum of Natural History in Regina for identification by Jeanette Godvin, then of Regina, who said that it had been caught the previous day, by a James Marshall, in a farmyard 18 miles East of Big Beaver, Saskatchewan, in the Big Muddy valley.

Ron Tillie, of the Museum staff, identified it as an Eastern Yellow-bellied Racer, *Coluber constrictor flaviventris*, and the snake was left at the Museum. I had been out of the building when it was brought in, and did not see it until several hours later. I asked what was to be done with it, and when told that it would probably be killed for a specimen, offered to take it home. I took it away that night, and kept it until released, again in the Big Muddy valley, over a year later.

The Eastern Yellow-bellied Racer is a rare species in Canada, so far recorded only from extreme southern Saskatchewan. First recorded in 1964,<sup>5</sup> it has been found in the Val Marie area in the southwest,<sup>1 4</sup> and the Big Muddy valley in the south-central part of the province.<sup>2</sup> My specimen was the third Big Muddy record. For a complete summary of the distribution and habitat requirements of this species in Saskatchewan, see the preceding article by Finley and Jasieniuk.

My specimen was an olive green

colour on the dorsal surface with a faint brownish cast. There was also a series of brown saddle-shaped blotches from behind the head to the end of the tail, but these were rather faint. The underside was a dull yellow, without any markings; the underside of the chin was a dirty white, and the tongue was black. It measured 29 inches in length, and was quite slender, showing only moderate thickening of the body. Based on the colour pattern, the snake was probably in its second or possibly third year.<sup>3</sup> As the tail tapered gradually, without any abruptness from the end of the body, I assumed it to be a male.<sup>6</sup> However, I did not attempt to evert the hemipenes to confirm this.

I constructed a terrarium for it using an iron-framed aquarium, filled with sand to a depth of two inches. Several flat pieces of slate were arranged to form a cave at one end, and a potted plant called a Panimiga (*Pilea in volucrata*) was at the other end. A branching piece of driftwood was placed length-wise across the terrarium for climbing, and a heavy glass ashtray four inches square and one and one-quarter inches deep, was sunk into the sand to provide a water dish. I covered the top with window screen secured to a tightly fitting wooden frame for ventilation, and an aquarium light hood, with two 40 watt bulbs, for heat and light.

During capture, the racer had been

pinned down with a stick, resulting in several broken ribs and a bad wound on the left side, ten inches back from the head. A section of muscle had been severed, and was protruding from the wound. Rather than try to do any surgery, I simply swabbed the wound with disinfectant and let nature heal her own, which turned out to be the best course. The wound healed completely within about five weeks.

In the first few days I had it, the racer was very inactive and showed no inclination to bite. Even when left on an open surface it would not attempt to escape, but would just wind itself into a coil, head on top, and remain motionless. In light of later more active behaviour, I can only assume that the wound was quite painful and made movement difficult.

The racer, and its relatives the whipsnakes, (*Masticophis* spp.), are regarded as being very nervous snakes, making poor pets and not adapting to captivity.<sup>4,7</sup> In most cases, these snakes refuse to feed, and spend all their time frantically searching for escape from their confinement. The ultimate end of these snakes in captivity is usually death from starvation and exhaustion.

My racer did not feed the first day, but was feeding well within a week, and although it never truly reconciled itself to captivity, seemed to do well. I suspect that if it had not been forced into a docile state by its initial disability, it might not have adapted as well as it did.

From the start it was fed mainly on field crickets, (*Gryllus* sp.,) which it was very fond of, and seemed to prefer to all other insect prey. It was also given mealworms, grasshoppers of several species, large moths, dragon

flies, and an occasional caterpillar or beetle. On the vertebrate side, I offered it boreal chorus frogs, (*Pseudacris triseriata maculata*), and young white mice, (*Mus musculus*), and gerbils, (*Cerbillus* sp.). I once showed it a Smooth Green Snake, (*Opheodrys vernalis*), which it immediately struck at and no doubt would have consumed if I had allowed it to do so. This diet corresponds well to the natural diet of the eastern yellow-bellied racer as described by Fitch.<sup>3</sup>

Its method of capturing prey was simply to strike and grab its victim, and then to work the prey around in its jaws so that it could be swallowed head first. It did not seem to be able to recognize an animal as potential prey until it moved, at which time it usually struck at it directly without much preliminary stalking.

During the winter months it did not show any indication of going into hibernation or any semi-dormant state, and still fed regularly, though not as often. At this time, its diet consisted exclusively of meal worms, (*Tenebrio*), and young mice or gerbils, from pet shops. Both of these food items offered special problems.

The mealworms, which are the larval form of a species of flour beetle, did not move very much, and sometimes it would take the snake over an hour to consume only twenty of them. A slight movement would attract his attention, but until the mealworm moved again, the racer would not take it. Besides, I do not think he liked them much, and sometimes would leave half of them, showing little enthusiasm even when quite hungry.

The racer particularly relished newborn white mice and gerbils, but I was not always able to get them this young.



*Eastern Yellow-bellied Racer*

Gary W. Seib

He was able to handle larger mice up to slightly over an inch in body length provided their eyes had not yet opened, but could not catch older mice or gerbils whose eyes had opened. The problem seemed to be not one of prey size, but getting a good hold on the rodent through the body hair. On one occasion he did catch a half-grown white mouse by surprising it and grabbing it on the snout before the mouse was aware of its presence. One other time, he ate a dead mouse which died before I could get it home. By this time the racer had been fed white mice regularly, and had not been fed for almost a month. I did not expect any results, but dropped the freshly dead mouse into the terrarium anyway; the snake grabbed it immediately and consumed it without hesitation.

After feeding the racer would retreat into his cave, and remain there until the meal was digested. This usually took about three days, though a large mouse might take up to a week for digestion. He was fed once or twice a week during the summer and early fall but during late fall through to spring only every two or three weeks.

He did not seem to require much water, but would drink readily from his bowl if he had not had water for a week or so. He spent a lot of time curled up in the Panimiga plant, and seemed to particularly enjoy it when watered the plant at these times providing him with a shower and drink, which he would "lap up" from the quilted surface of the leaves using his tongue. When drinking from his bowl, he would immerse his head

about half way and appeared to be pumping the water in by suction. On rare occasions he would coil up in the water bowl, particularly on hot days, but only for a short period of time.

I handled the racer infrequently, and made no attempt to tame him. After he recovered from his initial disability, the racer became very active and spent a lot of time prowling around the terrarium. At times it was obvious he was seeking a hole or crack by which to escape, but after three or four months seemed quite resigned to his situation. He enjoyed basking on the driftwood branch, and also curling up in the Panimiga plant, which brought him closer to the warm lights. Racers have good eyesight, and this very alert snake always seemed conscious of anyone in the room outside his terrarium.

He was docile enough if left alone, but at times would become highly nervous and aggressive, striking against the glass even if you crossed the other side of the room. He would usually strike if you put your hand in the terrarium or tried to pick him up. Once caught he would not bite the hand holding or supporting him, and usually calmed down. He enjoyed exploring any holes or crannies, such as pockets or shirt sleeves, and seams in the upholstery of the living-room furniture. I was fortunate that he never got away from me or escaped from his terrarium, as he would have been very difficult to track down.

I was bitten about half a dozen times, but he managed to break the skin on my hand and draw blood only once. The lacerations were small, but stung smartly. In contrast to a single lunge and hold used in capturing prey, he would make several strikes in very

quick succession when defending himself from my "attacks".

The yellow-bellied racer shed his skin three times while I had him, during August and November of 1976, and again in May of 1977. Each time his colours became very dull and the spectacle scales over his eyes clouded over a week to ten days before shedding. Schmidt and Davis state that snakes cannot see when this eye scale is clouded,<sup>6</sup> but it did not seem to blind the racer, at least not totally. Within 24 hours of these lenses clearing, the racer would shed. I unfortunately was not ever present to see the process, and would come home to find the cast skin wrapped around the slate rocks and other objects in the terrarium. On one occasion he shed during a space of two and a half hours. I went out briefly and he had shed when I returned.

After his first shedding, the wound incurred during his capture appeared to be completely healed, leaving an inconspicuous scar where the scale row pattern had been disrupted.

Following shedding, the colours were much brighter, especially the yellow on the belly. The saddle-shaped blotching on the dorsal surface became progressively fainter with each shed, being barely noticeable by the time I finally released him. Also, the brownish cast on the dorsal surface seemed to fade, making the green colour less drab.

Only after the second shedding was the shed skin in one piece without a break; the other times it was broken into three or four sections. Following the third shedding, I measured the racer to find he had grown to a length of 31½ inches.



*Eastern Yellow-bellied Racer*

Wayne Lynch

I enjoyed keeping this unusual snake more than any other I had kept previously. He was always alert and usually active, and was a real conversation piece whenever company came over. However, it was never my intention to keep him as a pet forever, realizing that he belonged back in his native habitat and not in a glass cage.

On the afternoon of July 17, I released the racer in thick grass at the head of a lightly wooded coulee in the northeast end of the Big Muddy valley, about 3½ miles south-southeast of Big Muddy Lake.

He took off without so much as a look back or a "thank you", not that I really expected one. I can only hope that he will be successful in finding a mate and that he lives happily to the end of his days.

<sup>1</sup>COOK, F. R. 1966. A guide to the amphibians and reptiles of Saskatchewan. Popular Series 13, Saskatchewan Museum Nat. Hist.

<sup>2</sup>COOK, F. R. and C. G. VAN ZYLL DE JONG. 1975. Eastern yellow-bellied racer in central southern Saskatchewan. *Can. Field-Nat.* 89:174-175.

<sup>3</sup>FITCH, H. S. 1963. Natural History of the Racer *Coluber constrictor*. Univ. of Kansas Publ., Lawrence Kansas. 15(8):351-468.

<sup>4</sup>FROOM, B. 1972. *The Snakes of Canada*. McClelland & Stewart Ltd., Toronto.

<sup>5</sup>MAHER, W. J. and W. H. BECK. 1964. Two records of the yellow-bellied racer in Saskatchewan. *Blue Jay* 22(4):174.

<sup>6</sup>SCHMIDT, K. P. and D. D. DAVIS. 1941. *Field Book of Snakes of the United States and Canada*. G.P. Putnam's Sons New York.

<sup>7</sup>SMITH, H. M. 1965. *Snakes As Pets*. T.F.H. Publications Inc., New Jersey.