

imum of pressure corresponding to the least and greatest heat of the day.

The point that I wish especially to urge, as bearing upon nearly all the inhabited portions of the globe, is the dynamic force of vapour affecting the atmosphere at fixed hours of the day, acting independently although it may be at times assisting the static density of the air. In storms and any atmospheric disturbances these regular tides disappear—shrouded by the greater temporary forces then at work—but at those periods they are of great use to the observer in his forecasts. For instance should they still be appreciable in bad weather, the disturbance is certainly local and short lived. On the other hand, should the barometer fall, even slowly and to a small extent during the morning—say between sun rise and 9 o'clock—a serious disturbance will surely ensue, while if the barometer rise during midday, between 9 a. m. and 3 p. m., you may count at least on a fine night, with the sole exception of the accompaniment of an east wind, which fair or foul raises our Atlantic coast barometers. This, in itself, is a subject worthy of investigation; but to-night I will not longer try your patience, but conclude with thanks for your attention.

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ART. VII.—NOTES ON THE SERPENTS OF PRINCE EDWARD ISLAND. BY JOHN T. MELLISH, M. A.

(Read May 8th, 1876.)

FAMILY-COLUBRIDÆ.

*Genus*—EUTÆNIA

*Eutænia Sirtalis.* Baird and Girard.

*Coluber Sirtalis.* Linn.

GARTER SNAKE.

*Genus*-BASCANION.

*Bascanion Constrictor.* B. & G.

BLACK SNAKE.

*Genus-STORERIA.**Storeria occipitomaculata.* B. & G.

## RED BELLIED SNAKE.

THE Fauna and flora of Prince Edward Island are different in some respects from those of Nova Scotia and New Brunswick. This can be accounted for in part at least by the insular character of the Island, and also by its geological formation, the latter being carboniferous and triassic—much more recent than the older formations which so largely predominate on this side of the Strait. If the Island always was an island and not a peninsula joined to the main by a neck of land of which Cape Tormentine and Cape Traverse are the only visible remnants, we may find it difficult to trace the introduction of all the varieties of fauna found there. If on the other hand the Island was formerly joined to the continent, we can readily account for the fauna being nearly identical with what we have here in Nova Scotia. No animals of the deer species are to be found on the island, nor is there reliable evidence as far as I know, that there ever were any. In a diary kept on the Island about a hundred years ago by a gentleman who evidently relished a good dinner, I find many entries of moose having been included in the bill of fare, but at the same time I find in the scant lists of freight conveyed in the small craft of that day from Baie Verte or Tatmagouche to Charlottetown, frequent mention of moose or moose-meat—a fact which would argue that there were then no moose on the Island, and that the meat was imported for use. Foxes have been known to cross the Strait of Northumberland at its narrowest part (about nine miles) in winter. Bears have been known to swim several miles voluntarily, and it is not improbable that they have crossed the Strait by swimming in summer. In regard to snakes, however, the notion that they would cross either by ice or water is untenable.

## THE GARTER SNAKE.

*Eutænia Sirtalis.* B. & G. Smithsonian Institute.*Coluber Sirtalis.* Linn. Storer.

*Trophidonatus Sirtalis.* Hol.

*Trophidonatus tænia.* DeKay.

This snake, so common in almost all countries in the temperate zones, is found on the Island in large numbers. It seems to attain to a much greater size than in Nova Scotia. I have frequently seen them from  $2\frac{1}{2}$  feet to  $3\frac{1}{2}$  feet in length; and from  $2\frac{1}{2}$  inches to 5 inches in circumference at the thickest part. I think the colour too is generally darker than that of the Nova Scotia Garter Snake, although in some cases the belly is nearly white. They often resist when attacked. The largest one I have seen measured 4 feet 9 inches in length, and was  $4\frac{1}{2}$  inches in circumference. It was beautifully coiled up beside a decayed tree, enjoying the afternoon sun of an August day. It is believed that they receive their young in their stomachs, on the approach of danger. I have seen them with toads in their stomachs; in one instance the snake had three toads in his stomach at once, and was almost completely torpid. These snakes have frequently been seen swimming across the Hillsboro, near Charlottetown, where the river is over a mile in width. They look very pretty in the water—the head erect several inches above water, and moving about from side to side with the motion peculiar to the serpent, and the body and tail sweeping behind.

#### THE BLACK SNAKE.

*Bascanion Constrictor.* B. & G.

This snake is not as rare on the Island as it is in Nova Scotia. Dr. Thomas Dawson, of Charlottetown, informed me that he once found four together in the woods. They seemed to be very torpid, and were just recovering from their long winter sleep. It is generally much smaller than the Garter Snake, although in a few cases I have known them to exceed three feet in length. One of these, which was accompanied by several young ones, became very furious when struck, and actually sprang several yards at its assailant, who succeeded in killing it, but not without considerable effort. The epidermis (of all the varieties I presume) is frequently found entire,

as if the snake had crawled out of it, and sometimes apparently as if burst asunder and dropped off.

### THE RED BELLIED SNAKE.

*Storeria Occipitomaculata.* B. & G.

This variety is numerous, is smaller in size, and seems to be less courageous than some of the other species. It is generally found near woodpiles and old buildings. It is of a dusky brick color, the belly being of a lighter shade than the back.

I do not think the King Snake (*diadolphis punctatus*, B. & G.) is to be found on the Island. The Green Snake (*Chlorosoma vernalis*) so common on the continent, is entirely unknown there.\*

### THE STRIPED SNAKE.

*Coluber lineatus?* Mellish.

I have frequently seen a small snake striped with black, white and dark green. This I have not been able to identify; and I regard it as a new species. It is found in the grass and among bushes, but not in the vicinity of dwellings. I have not seen any of them as small as the smallest of the red bellied snake, nor yet any as large as the largest of the garter snake and black snake. It is suggested that the name *Coluber lineatus* be given to this species provisionally, until it be more fully described.

A gentleman who saw a snake charming a bird, told me that the sight was very interesting, if one could forget the bird's fate. The snake held the bird's eye, and moved forward almost imperceptibly, the bird being motionless, with its head stretching forward towards its destroyer. Stronger the attraction grew, nearer the snake approached, until suddenly his red jaws closed on his prey.

Several years ago, I saw a singular looking creature which more nearly resembled a snake than anything else. It was killed in harvest-time by a mower in an oat-field. It was of yellow or straw color, and was about 21 inches in length, and 2½ inches in circum-

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\*Since this Paper was read I have learned from James L. Mellish, Esq., of Pownal, P. E. I., that the *chlorosoma vernalis* was sometimes to be seen on the Island forty or fifty years ago.

ference, being of even thickness from the head to the tail. The tail ended abruptly as if cut square off. The form was not perfectly round, but the back and belly as well as the sides were somewhat flattened, the eyes were black, in striking contrast with the colour of the creature. It was not smooth, but was surrounded by raised rings of about a quarter of an inch in width. The colour, however, was uniform.

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ART. VIII.—NOTES ON SOME NOVA SCOTIAN PLANTS. BY  
 GEORGE LAWSON, Ph. D., Ll. D., *Professor of  
 Chemistry, Dalhousie College, Halifax.*

CALLUNA VULGARIS.

It may be recollected by some members of the Institute, that a patch of Scotch Heather (*Calluna vulgaris*) was found about fourteen years ago in the State of Massachusetts, and that a good deal of discussion ensued as to whether the plant was really indigenous to the American soil, or had been intentionally planted, or accidentally introduced. One set of American botanists held to the belief that the plant was not native in Massachusetts, whilst Professor Gray and others believed that the evidence was so far, in its favour. This latter view was strengthened, and the favourable evidence increased by a circumstance that occurred in London. The Linnean Society had in course of many years accumulated in their rooms a large quantity of bundles of dried plants. These were cumbersome to move into the Society's new quarters, and it was therefore determined to select from them what appeared to be necessary for the Society's Herbarium; and all that were regarded as duplicates or rubbish, were sold off at auction. Amongst these was a parcel of Newfoundland plants, collected by Mr. Cormack, the first scientific explorer of that Island, and that had long lain neglected. The parcel was purchased, with others apparently as valueless, by Mr. Hewett Cotterell Watson, a veteran botanist, residing at Thames Ditton, who in early days explored the Azores, and who has devoted a large portion of his life to collecting and digesting