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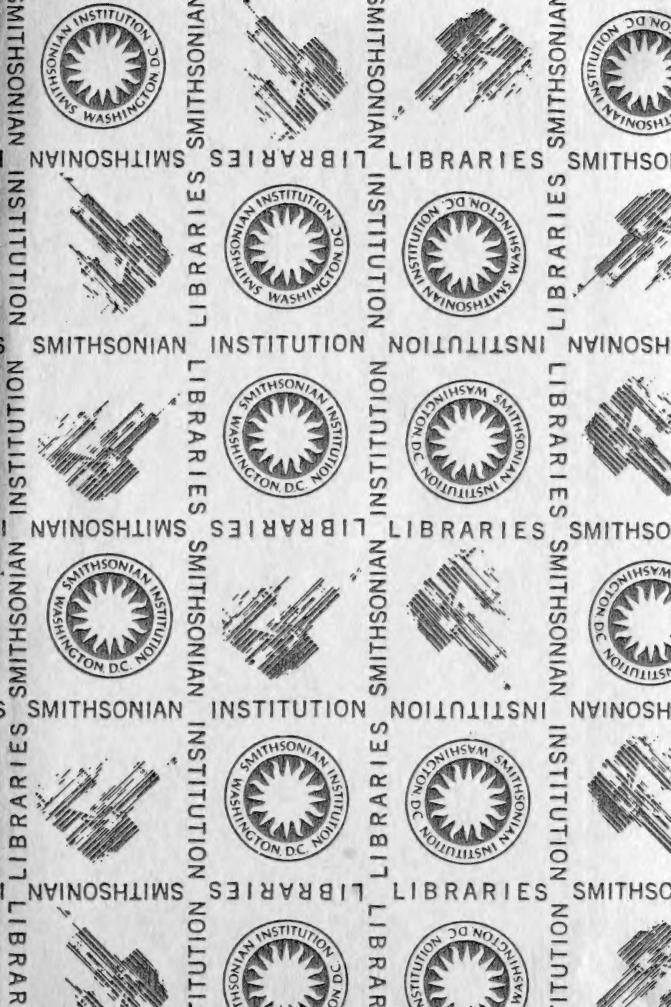
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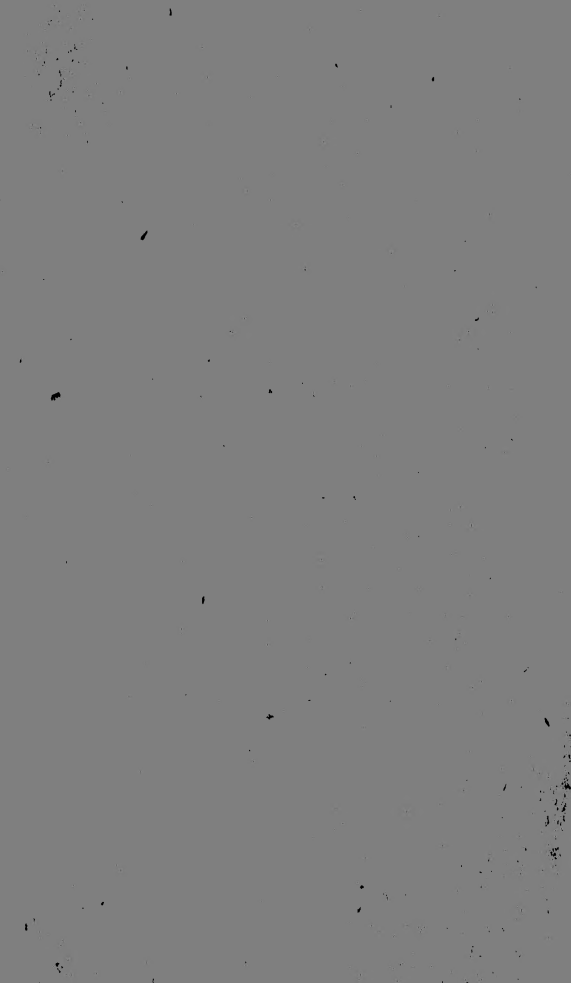






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THE

Hermit Naturalist

BY

Fred. Alexander Lucas.

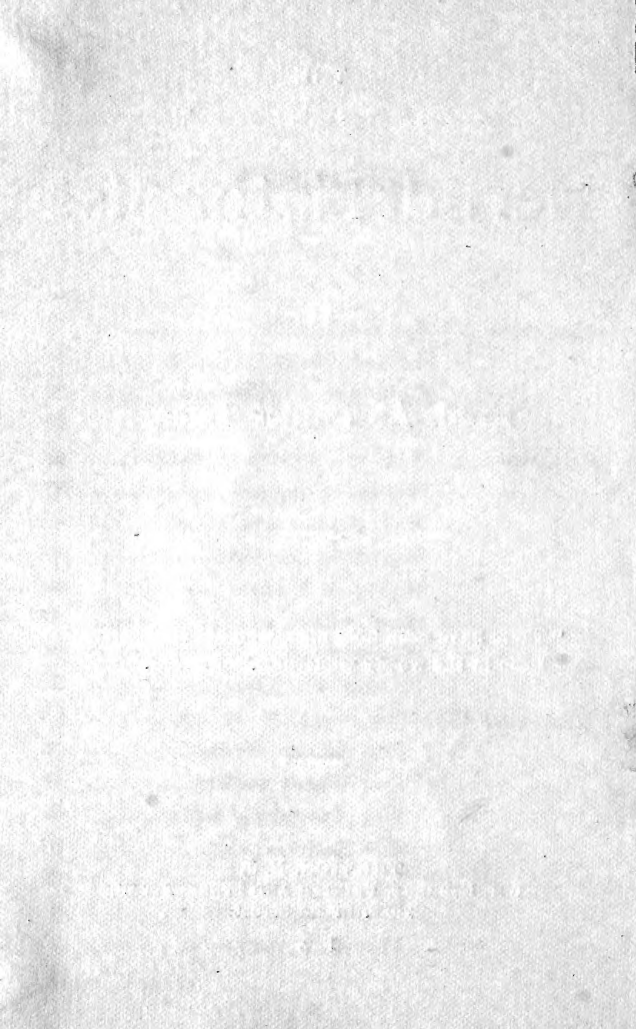
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“There have been holy men, who hid themselves,
Deep in the woody wilderness.”—BRYANT.

TRENTON, N. J.
WM. HIBBERT, PRINTER AND STEREOTYPER,
210 S. Broad Street.

—
1899.

121 Jap.



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THE Hermit Naturalist

CHAPTER I.

THE OLD HERMIT.

“He can behold,
Things manifold,
That have not yet been wholly told.”—LONGFELLOW.

In a historic vicinity in the Delaware river lies a small island. One would hardly deem this isolated spot a pleasant abiding place. Yet a small, white-washed, rough, stone dwelling, with shutterless windows, and destitute of porch or balcony, stands in the center of this island. A short distance from the dwelling there is a low, rambling wooden building, used for the accommodation of live-stock. A small vegetable patch, showing evidence of careful cultivation, occupies a portion of the contracted area. A few storm-beaten, yet still sturdy trees, and a rank growth of berry-vines, bushes and shrubbery constitute the physical attractions of this quiet solitude.

Frequently, during my walks along the Delaware's shores in pursuit of knowledge of Nature's mysteries, I have reclined on a grassy

bank on the mainland opposite the island, and endeavored by critical observation to learn something of the mystery environed tenants of the cheerless isle. I have noticed a short, stout old man attending to the live-stock, or at work in the garden, or otherwise engaged, but I felt impressed that he was not the only human dweller on the island. Several times during my numerous visits to my point of observation on the mainland, I noticed a stalwart, white-haired old gentleman in a boat, that was usually anchored some distance from shore; I could hardly decide at times whether he was fishing or dreaming, so quiet would he remain while I watched him. In my romantic fancy this was the mysterious individual, who, doubtless for some good purpose, had taken up his abode on this desolate spot, anxious to be apart from human society and its disappointing experiences. The more I observed the mystery veiled dwellers on this isolated spot in the Delaware, the stronger grew my desire to become acquainted with them. Fortune at last granted my heart's earnest longings, and brought me into closer fellowship with "the old hermit"—as I had grown to style the lone fisherman—than my strongest desires could crave.

On a frosty morning in the autumn of '93, when I was laboriously rowing against the strong current of the Delaware, above tide-water, in search of a specimen of wild fowl for my cabinet, I saw the "old hermit," sitting like

a statue in his anchored boat. His shotgun rested on his knees, and he was evidently awaiting a shot at the wild-fowl that occasionally fly over at this season of the year. Anxious to secure a nearer view of my hermit friend, I rowed towards him in such a manner as not to arouse his suspicions of my curiosity inspired purpose. I rowed but a short distance when I observed a fine flock of wild ducks fly over me. At once I turned my attention to the lone sportsman. He also saw the game and was standing easily in his boat and taking careful aim. As the flock passed directly over him he fired, when to my surprise and horror, he lost his balance, dropped his gun and madly grasped at the side of his boat as he went overboard and disappeared from my anxious gaze, in the swiftly rushing current. Believing the current would carry him far below his anchored boat, I pulled with all my strength to intercept him as he came down stream. Soon his head appeared above the surface of the water, a hundred yards or so from me. Increasing my efforts I soon rested in his way as the swift current swept him toward me, and I called to him to seize hold of my boat. He was an expert swimmer and soon grasped the stern of my boat, when I shipped my oars, and helped him aboard, chilled from the effects of his untimely bath.

When safely seated in my boat, and having recovered his breath after his exhausting efforts,

he seized my hand and fervently thanked me for my timely assistance.

“Did I bag my game?” inquired my shivering companion, when fully restored to strength and composure.

“Yes sir, one of the flock dropped on the shore almost at the feet of the old man that stood there wringing his hands in anguish when your accident occurred.”

“Poor Petro, he was doubtless horrified by my mishap. I much feared I had lost my game as well as my balance. You will understand, that just as I drew a bead on the flock and fired, a strong gust of wind so rocked my boat, that its motion in conjunction with the recoil of my fowling-piece, caused me to suffer an inconvenient bath, and gave you an opportunity to demonstrate a vital truth, that man *is* his brother’s keeper. I feel assured that, but for your timely aid, the accident would have proved disastrously serious. I must therefore consider you my literal saviour, and I sincerely hope and believe that time will prove how fully I appreciate your kindly services. Now if you will allow me to man the oars, I will be able to keep my chilled blood in healthy circulation, and soon land us on the island, when we will allay Petro’s fears of any serious results following my narrow escape.”

I was glad to comply with my companion’s request, as I could then enjoy the opportunity thus afforded me to critically view my new

friend. As we shot over the surface of the swiftly rushing river, from the impetus given by his strong, steady strokes, I decided that my companion was a foreigner. I noticed that he was a strongly built, well proportioned gentleman, whose life had experienced the vicissitudes of quite a half century. His face was a study ; soft, full, smooth cheeks ; a firm, sensitive mouth, with well preserved teeth ; a strong square chin, and high intellectual forehead ; deep set, piercing gray eyes, well shaded by shaggy eyebrows ; a shapely head crowned with a full growth of almost silky white hair. His hands were white with tapering fingers ; his feet were neat and shapely, while his general bearing impressed a casual observer with the fancy that he was a military character.

This quick scrutiny, which I made while my companion was propelling the boat rapidly towards shore, convinced me that my new associate was a gentleman born, used to the conventionalities of the best society, and, withal, a man of education and refinement. Doubtless some strange and powerful influence had caused him to flee the associations of his fellowmen and seek relief, and perhaps forgetfulness, in a hermit's cheerless, lonely life.

We had hardly reached shore, when Petro, with eyes moist with joyous yet anxious tears, rushed into the water to seize the boat's bow and draw us ashore, so solicitous was he for his master's welfare. As soon as my companion

stepped ashore, Petro fell at his feet in exuberant joy inspired by the happy termination of the accident. The hermit spoke kindly to the faithful and devoted servant in a peculiar foreign tongue, when the poor fellow arose, his eyes beaming with genuine joy as he looked into his master's face. A short dialogue between these two strange beings, resulted in a hearty welcome extended to me by Petro, and unmistakable evidences of his full appreciation of the services I rendered to his master.

“You will pardon my use of a foreign language in addressing my servant, as he is utterly ignorant of other speech. He is a Sicilian, and since leaving his native isle, he has enjoyed no opportunity to converse with anyone but me, whom, I sincerely believe, he loves with a superstitious affection. Now, you will kindly pardon my absence, while I remove my wet garments, and Petro will make you as welcome as our poor accommodations will permit.”

Thus, gracefully, the old hermit left me. Petro beckoned to me to follow him; this I did readily, as the opportunity to solve the mystery surrounding these lone dwellers on this island retreat was at last presented in a manner not to be anticipated.

HIS HERMITAGE.

I followed Petro to the hermitage, with all my senses active to absorb all the facts that

my fancy had invented relative to my new surroundings. The dwelling proved to be far neater in external appearance than my distant views of it led me to believe possible, while its environments gave evidence of cleanly attention. Following Petro through the front door-way, I observed that the hall continued through the house and allowed exit through another door-way in the rear. The ground floor contained but two rooms, one on each side of the hall, while a narrow, but substantial stairway led to the upper floor. The room on the right of the hall, as we entered the front door-way, was evidently the kitchen, as I noticed, through its door-way, a polished cooking stove, with a most inviting fire peering through the grate, and quite an assortment of shining cooking utensils hanging on the ample chimney. Petro ushered me into the room opposite to the kitchen; this was certainly the dining-room and sitting-room combined. It was neatly furnished with a round center-table, several cane-seated chairs and a substantial, hard-wood sideboard. The walls were decorated with unique old prints of foreign scenery, and a few tastily framed paintings of a sporting character; trout fishing, snipe shooting, etc. A grate wood-fire in a roomy old-fashioned chimney place warmed this room. A box of smoking tobacco, several pipes, Indian relics, and shells embellished the wide mantel. Sportsman's equipments—rifles, shot-guns, and fish-

ing tackle—filled the corners of this cosy room, while several old military relics hung on the wide chimney.

Petro left me to enjoy my associations; which I did with true satisfaction. While I was seated before the genial warmth of the cheerful grate fire, endeavoring to decipher the nationality of the old prints on the walls, my new friend entered the room.

“Ha, my young friend, I feel honored indeed by your apparent ease and comfort in my humble abode. As we become better acquainted you will gradually learn my peculiar ideas of true home joys. Now kindly follow me upstairs, where I spend the rapidly speeding hours of my but few lingering years, and you will learn how I compensate myself for the loss of human society.”

“I sincerely hope, my dear sir, that your natural desire to manifest your true and full appreciation of my slight services, will not induce you to sufficiently restrain your very proper aversion to a stranger’s trespass within the sacred retreat of your private study. Doubtless manifold evidences of your sacredly quiet and isolated life are there discernible. I shall feel keenly the serious error of my presumption in accepting an invitation to enter the sanctuary of your private life, simply to gratify a natural, though perhaps foolish, inquisitiveness.”

“Quiet your honest misgivings, my young

friend. I extend this hearty invitation to become acquainted with my inner life, so far as my secret associations will enable you, not merely from courtesy, or as a partial recompense for the kindly service rendered me, but because I earnestly hope, and I shall endeavor, to establish an honorable and lasting friendship between us. I have long realized the need of a human associate capable of understanding and appreciating my labors within the limited extent of this isolated piece of earth. I am sincerely impressed that your friendship and association will prove most congenial as well as truly profitable to me. Ah, here we are, allow me to usher you into my den. Down Pluto, sir, this is my friend."

This abrupt command of my companion proved timely indeed, for my advance into the "den" was most defiantly challenged by a fierce specimen of a powerful blood-hound, that evidently resented this seeming sacrilege of his master's sanctum. Having quieted this faithful guardian of the sacred precincts, my host led me to an easy chair near the warmth of an open grate-fire; then calling Pluto to accompany him, he gracefully retired and left me to my quiet meditations.

This "den" as my kind host facetiously titled his sanctum was peculiarly adapted to the necessities of a cultivated mind and a refined nature, separated from daily intercourse with the great, busy, selfish world.

It was a roomy apartment, yet every available space was utilized with tact and neatness that impressed one with its orderly, yet cosy arrangements. All its furnishings gave evidence of the refined nature of its intellectual tenant. Several neat book-shelves securely fastened to the walls of two sides of the room showed by their well arranged contents, the literary tastes of my hermit friend. Science, history, philosophy, biography, poetry and the higher class prose, were all well represented to succor the mental and emotional cravings of their favored student. Quite a variety of late editions of newspapers and periodicals showed that my host kept abreast of the times, and was fully acquainted with the doings and the prevailing sentiments of the outside world. I was especially pleased with the numerous specimens of Nature's wonders, neatly arranged in a commodious cabinet that occupied one side of the "den." This proof that my new friend was assuredly an ardent student of Nature, accomplished much toward strengthening the esteem I already entertained for him; as I realized that he was a co-worker with me among the inexhaustible riches of Nature's extensive realms. Birds, reptiles, fishes, crustaceans, insects, etc. in interesting variety and careful preparation composed this treasury of science. In one corner of the room, there was placed an oak stand on which rested a costly microscope; while near at hand stood a neat cabinet con-

taining the valuable requisites for successful microscopical work. A well mounted specimen of the Osprey or Fish-Hawk, with wings spread, and a goodly size fish in his talons, rested, as though just alighting with his quarry on a rocky ledge. Cocoons of the silk worm moths festooned the window-frames, while a large hornets-nest hung from the ceiling in the center of the room. A substantial oak desk well covered with notes and manuscript occupied a central spot in the "den;" and an easy chair and a student's lamp were proof that the hermit burned "midnight oil" in securing that surest means of earthly happiness, a well stored mind.

Two oil paintings hung on the south side of the room; these works of art riveted my admiring gaze. One was the portrait of my hermit host executed by a master when the subject was a young man. The other was a picture of the most charming womanly loveliness I had ever looked on; it also represented youth, but portrayed in virgin beauty and innocence. Never can that marvelous face be banished from my memory. While I was intently gazing at this handiwork of some master's skill my host re-entered the "den."

He stood for a moment, following, with his intelligent glance, my admiring gaze, then with a hardly audible sigh, he drew a chair to the fire-place beside me, and there, in silence, he sat for awhile, as though reluctant to disturb my attention. After some minutes, he arose

and went to an artistically fashioned closet neatly fitted into one corner of the chimney-place, then he returned to my side with a pouch of fragrant tobacco, and two oddly carved pipes made of some strange foreign wood.

“Do you smoke, my young friend?” inquired my host as he proffered me pipe and tobacco. “I shall be pleased to enjoy a pipe with you while we become acquainted with each other. In my opinion, a quiet smoke is very conducive to an interchange of pleasant confidence, and delightful congenialty between friends, and many weary weeks have flown since I last enjoyed a quiet smoke with a congenial companion.”

Accepting the hermit's friendly offer, I smoked on in silence, determined to give him an opportunity to invite mutual confidence, and thus prove to my perfect satisfaction that his earnest expression of a strong desire to establish a full confidence, and a lasting friendship between us was the true longings of his heart, and not merely the manifestation of his appreciation of my services in his behalf. After a silent meditative smoke lasting several minutes, the old hermit wheeled his chair directly in front of me and looking steadily into my eyes, calmly inquired:

“Now what opinion have you formed of my hermit's quarters?”

“I candidly confess sir, I almost envy your solitude among such associations and elevating

influences. May I so far presume on your hospitality as to ask how long you have separated yourself from human society to pass most delightful hours amidst such satisfying companionships?"

"Let there exist no formality or diffidence between us, my dear rescuer; let us at once be friends and confidants; let me entertain and nourish the hope that hereafter my life shall be brightened, and my declining years shall be made joyous by the intimacy and genial companionship of one whom I shall ever highly esteem, and whose presence I shall ceaselessly yearn for as the brightest ray in the sunshine of my but few lingering years. 'Tis but natural that you should crave some knowledge of the history of my past life, and some acquaintance with the causes that drove me to this secluded spot, where, far from the uncongenial associations of my fellowmen, I find rest for my weary soul, and edification for my active mind with Nature and my books. A brief retrospect of my, not all unhappy, life I feel assured will suffice to satisfy your natural desire to know who I am, and why here.

I am a Sicilian by birth, of noble lineage. While I was happy on my native estates, in devotion to Nature study, the idol of my affections, a beautiful daughter but twelve years of age, mysteriously disappeared from my home. I exhausted every resource at my command for her recovery, but without success. Nearly

maddened with grief and anxiety, I left my native land, and for years in this quiet spot I have not ceased to labor and to pray for her return to me, or the positive proof that she is no more.

But enough; my record is true, my hope is yet strong; my desire is to win your esteem and confidence. As to your credentials, based on the unstable estimates of social position and family relationships I care nothing; I hate the frigid, heartless, conventionalities of selfish society. Your face is a reliable index of your true character; future associations between us will prove conclusively to my perfect satisfaction, that I have made no error of judgment in taking you to my bosom as a beloved and trusted intimate companion. To me you shall be simply, Fritz; to you I shall be simply, the Count. Give me all the companionship of your genial nature that circumstances will enable you to steal away from the selfish exactions of the outside world. I need your presence; you may profit by my companionship; time will tell. Yonder beautiful face is the image of my lost idol, I will tell you something of her history in the near future; not to-day, my dear Fritz, not to-day.

HIS ISLAND RETREAT.

“But come, you have finished your pipe, let me show you my kingdom. Pluto, here sir;

this is my friend ; be kind and true to him, even as you have for years been faithful to me ; advance sir, pledge your deathless devotion." Thus commanded, the intelligent brute looked steadily into my eyes for a moment, as though really reading my true character, then he advanced to me, licked my outstretched hand, and prostrated his powerful form at my feet.

"Enough, Pluto will prove no mean companion, my Fritz ; but come, we will show our mutual friend our possessions, eh, Pluto, good dog ; hie on sir, and show us the way."

Leaving the house through the door at the rear of the hall, and facing the sunny south, we stopped for a few minutes beneath a grand old oak, under whose branches a rustic seat rested.

"Many pleasant minutes, with Pluto and my pipe, I waste beneath this old oak. I shall have Petro make another rustic-chair for you, my dear Fritz, when we can then pass pleasant hours here together, in contemplation of God's marvelous handiwork about us. Now let me show you my live-stock ; not much in quantity but best quality. Entering the shed we visited the cow, a fine Alderney, that gave evidence of the best care.

"Ah Uno, always ruminating in quiet contentment ; a penny for your thoughts my beauty." The mild-eyed bovine seemed to appreciate her master's caresses, for she turned her handsome face towards him and licked his hand. Next we visited the hennery, where sev-

eral fine specimens of the best poultry stock were comfortably housed. In another portion of the shed were piles of potatoes, turnips, cabbages and other hardy vegetables; while hanging from the roof were strings of red and white onions, peppers and soup herbs. Carefully packed away in barrels in a corner of this shed were luscious apples, all well protected from the biting frosts of winter.

“These are products of your farm and orchard, I suppose?”

“Yes, my dear Fritz, all evidences of Petro’s faithful industry and commendable thrift; a valuable servant is Petro, I could hardly spare him.”

Beyond the shed we next visited a low, substantially built, rough stone building, neatly whitewashed, about twenty feet square, and ten feet in height. Here were stored barrels of sugar, flour and molasses; boxes of tea, coffee, rice, split-peas and beans, and several varieties of canned goods, also several fine large cheese. Beneath a trap-door, which my companion raised, I saw quite a number of firkins of sweet, yellow butter.

“You surely need entertain no fear of famine while these ample supplies continue.”

“No, my Fritz, we are careful to provide for the needs of the body, and to look well to our supplies, lest winter’s inclemency catch us unprepared to withstand its rigors. From our well cultivated little farm, our cow, our chick-

ens, and our orchard; besides what an occasional shot at the game birds in season, that visit us, and such fish as the river affords, we manage to live very comfortably and even enjoy quite a variety of dishes. Petro is a good provider. Such articles as we cannot raise he secures from the village in barter for eggs, butter and farm produce above the demands of our limited needs. Our wearing apparel and household furniture seldom require replenishing, and when demanded, are usually secured by Petro."

Leaving the food supplies we traversed the contracted isle, viewing the numerous old trees and young saplings. Wild grape vines, in profusion, and vines and bushes of several varieties of small fruits showed the effects of Petro's judicious and careful attention. On the south side of the island, along the river's shore, Petro had erected a log hut, in which a row-boat and a commodious scow were housed during winter, while in one corner of it was stacked a large quantity of dry, tough cord-wood, prepared against the time of need, when winter's frosty breath made a blazing fire not only cheerful but absolutely necessary.

"During winter, I imagine your surroundings are dreary indeed."

"Out of doors, doubtless, my Fritz, but within we have the crackling logs, the genial warmth, and my books, you know, my books."

"Ah, yes, to a scholar cloistered with his

books, what matters how the winds howl, the trees moan, the snow covers the face of Nature, and all about appears cheerless and desolate."

"True, my Fritz, quite true. But let us return, we have but little of cheerfulness to show on our isle at this season, but wait till budding spring and summer's warm breath revive our now desolate realm, we can then show you a piece of paradise. You shall see and enjoy for yourself then, my Fritz."

Returning to the hermitage we learned that Petro had prepared a tempting meal for us in the cheery dining-room. After fully satisfying our sharpened appetites we retired to the hermit's sanctum, where we enjoyed a restful smoke. Here for an hour or more the old hermit entertained me with a most enjoyable account of how he secured his fine zoological collection. He found the greater number of his specimens on the main-land, where, during pleasant weather, he spent much of his time in search of Nature's objects of study.

As evening was rapidly drawing nigh I was compelled, though reluctantly, to bid farewell to the old hermit, promising to repeat my visit early, and boarding my boat I was soon swiftly gliding down stream, homeward bound.

Arriving again within the busy whirl of town life, I felt that my visit to the old hermitage and the day's experiences were but a pleasant dream, from which I was now rudely awakened. But frequent renewals of this pleasant

intercourse with my mystery environed hermit friend soon dissipated this peculiar delusion, and most happily assured me of the true reality of my pleasant and profitable relationship with the "old hermit."

Enjoying his fullest confidence, I soon learned during my pleasant associations with the "old hermit," that he had suffered a most trying sorrow in the loss of a beautiful daughter, the whole joy of his quiet, earnest life. Of noble lineage, his great wealth and vast territorial estates enabled him to give full and devoted attention to the study of Nature, the love of which was strong in him.

HIS LOST IDOL.

He was a born naturalist; and eschewing the empty dissipations of high life, he was happiest, when with his only child, the idol of his heart, he rambled among the wide expanses of Nature within his own possessions. His lovely daughter, left motherless at an early age, was the sole companion of the Count during these delightful rambles, and as she grew into beautiful young womanhood, he watched her daily with the keenest solicitude and the deepest affection. One day, while he was absent on one of his usual rambles, after a prolonged stay, he returned at evening to his luxurious home, and was surprised to receive no demonstrative welcome from his idolized child. Entering the house he inquired of the servants where their

young mistress could be found, and he was both shocked and alarmed to hear that they had seen nothing of her since noon, and supposed naturally enough, that she was with him. At once, almost frenzied with solicitude for his darling child, he instituted a careful search for her; soon the villagers became aware of his sad state and everyone joined in a careful search for the missing daughter. Every resource was exhausted; months of most careful and shrewd investigation by skilled detectives, accompanied with lavish expenditure of money; the offer of almost fabulous sums for her recovery and return to her home, with sacred pledges that no prosecutions would follow, all, all failed.

On that charming May day the Count's idolized child dropped out of his life as completely as if supernatural influences had caught her up into another sphere of existence and she was no more of this earth. Well, year followed year, and the tireless and love-inspired search for his lost child after the expenditure of large sums of money, simply secured to the grief-stricken father, a slight ray of hope that she still lived. He learned that on that cruelly memorable day in sunny May, a band of brigands from the mountain retreats of the far Apennines passed through the village on its way to the wilderness, and it was proved that this band abducted the Count's child while she was on her way to join her father in his ramble.

The primary object sought in her abduction was doubtless a heavy ransom from her wealthy parent for her safe return. The appearance of the lovely captive at the rendezvous of the brigand band at once gave rise to a peculiar complication that hardly any amount of money could possibly settle. The manly young son of the stern old chief of the band at once fell in love with the beautiful maiden. His eccentric yet iron-willed father so encouraged the son's tender fancy as to issue a decree, that went forth to the tribe, that in the sweet, young captive, the band saw their future queen. Of course such an edict, issued by the head and despotic ruler of the band, warranted to the beautiful but sad maiden the full devotion and personal service of every member. But there was one dissenting voice among the usually strictly obedient band; this was the gallant young leader of the small party that abducted the lovely prize. He hesitated not to vehemently protest against the unjust procedure of disposing of his hostage without the consent or agreement of the band that secured the prize. He boldly declared his depthless love for the fair maiden, and further stated that for weeks he, with a few picked and trusted associates, had time after time sought the occasion that so opportunely placed her in his hands. He would pay the ransom for the mutual profit of the band if it was demanded, but he sternly protested against such an unpre-

cedented act as to deliberately give his prize to another without his knowledge or consent. The old chief was inexorable, however; his royal edict had been proclaimed, nothing could recall it.

Time passed; the sweet young captive, under the tender care of most solicitous attendants grew into the band as a member of it. After two years of captivity, yet royal liberty, it was proclaimed that within two short weeks the chief's gallant young son would wed the lovely stranger. All was excitement and joyous expectation among the members of the tribe; every preparation was made for a gala time. The days flew by swiftly till the morning of a short week preceding the festal occasion, when the greatest surprise and benumbing consternation seized hold of the tribe. Lo, the bride was missing. The most careful search discovered that her trusted attendants had been stupefied by some chemical influence and left bound and gagged. But the most important fact explaining all, was the discovery that the jealous suitor of the beautiful maiden was also missing. The most searching investigation proved that the traitorous brigand and his lovely captive had set sail for some foreign port in a fruiter that just left Messina, whose destination it was believed would be the United States of America.

This meagre yet welcome information relative to his idol's experience was secured by the

nearly heart-broken parent from a member of the band whose queen the abducted daughter was to be. Confident that his lost child was somewhere in the great New World, the Count disposed of his vast estates, and accompanied by faithful Petro, he sailed from his native land for New York. Arriving in the great metropolis of the western world, the Count secured the skilled services of noted detectives and prosecuted an earnest search for his loved lost-one in the great city. After weeks of fruitless effort, disheartened and almost distracted with grief and anxiety, he sought out the quiet isolated isle in the Delaware river, and there in the privacy of a hermit's life he has ceased not to labor and pray and wait for the return of his lost darling. After securing his island home, the Count furnished it to suit his humble tastes and depending on faithful Petro to manage the estate, he devoted his time to a studious observation and investigation of Nature's mysteries.



CHAPTER II.

THE LIFE-HABITS OF SNAKES.

My heart is awed within me when I think
Of the great miracle that still goes on
In silence, 'round me; the perpetual work of Thy crea-
tion.

During the winter of '93 I spent many days in most profitable association with the "old hermit;" and I learned much of Nature's mysteries from his wide experience and extensive knowledge. I never left the hermitage, however, without casting one tender glance at the beautiful face that smiled down on me from its place on the wall. It seemed to inspire me with an inexpressibly happy conviction that somewhere, at some time in the near future, it would be my sacred privilege under Providence to enjoy the thrice blessed opportunity to meet the original of that enchanting picture, and to be in God's hands the honored instrument to return a long lost idolized daughter to a sad and grief worn, yet still hopeful father.

Professional duties had prevented my presence at the hermitage for several weeks. Finally I succeeded in my efforts to sever all exacting demands on my time that prolonged my absence from the "old hermit," and I made arrangements of such a character as to allow me the rich enjoyment of a protracted visit

with my greatly esteemed naturalist friend. So on a stormy morning in December I breasted wind and snow in a laborious tramp along the Delaware's shore toward the hermitage, crossed the frozen river, received a hearty welcome from both Petro and Pluto, and was soon after cozily seated in the warm embrace of the old hermit's cheery "den."

The Count's reception on that stormy December morning, after weeks of grievous separation, was hearty and affectionate. I was impressed by his kind welcome that my presence was most congenial to, and highly prized by my sincere and honest naturalist friend.

"I am so pleased to see you again, my dear Fritz, that I am tempted to lay aside my labors and devote my whole time to-day, to insuring your comfort and enjoying your return to me."

"Ah, my dear Count, you know full well it needs no waste of precious time to assure me of your true and hearty delight to again welcome me back to the hermitage. Our mutual pleasure on this occasion of our happy re-union after weeks of grievous separation will be most fully and satisfactorily manifested in an earnest and profitable consideration of the labor that fell to our hands while absent, one from the other."

"You speak truly and wisely, my Fritz, so I will at once return to the enjoyable labor in which I was engaged when your most desired presence interrupted me. I will now devote

myself to the work with greater zeal and delight because of your association and assistance. For several days I have been busily employed arranging and carefully revising my notes of observations and experiments made during the year now closing. You will be a most valuable aid in the satisfactory completion of my task. I have here quite a voluminous record of what I have seen and learned of "snake life," with special reference to "our common snakes." I sincerely hope you are not among the unreasonable despisers of snakes."

"I am too ardent a lover of Nature to despise any of God's creatures. But I have given but scant attention to the life habits of the serpents, simply because my time has been almost fully occupied in other departments of zoological research. I am anxious indeed, to learn what that mass of scientific notes contains, to which you are so attentive."

"Of course, my Fritz, I am not surprised to hear you say candidly, that snakes have held no charms for you, ardent naturalist though you are. The beautiful things of Nature; the songful birds, the marvelously painted butterflies and moths, the charms of fragrant flora, the wonders of the mineral kingdom, and the shells of old ocean; these incomparable decorations of Nature tempt the naturalist to study their charms and mysteries. But the crawling, gliding, repulsive things of Nature; the worms and caterpillars, the snakes and lizards, the

toads and frogs, the crawling insects, are so frequently either disregarded by Nature-loving souls, or despised by the average mortal, that our knowledge of their life habits is meagre indeed, yet every intelligent person must admit that repugnance and prejudice in nowise justify ignorance of Nature or anything else. We are the losers when such sentiments prevent our knowing the characters and purposes of the obnoxious creatures in Nature's extensive realms. Now let me convince you, from these absolutely reliable notes, largely the results of my own personal observations, how really interesting and also instructive are the life habits of our common snakes.

Early in the Spring my attention was drawn to my real ignorance of the complete life habits of even our most common snakes. I at once gave the subject careful consideration and I was amazed to learn how few observations I had made of the life habits of these creatures during my years of active work in Nature's wide domain. I decided to procure specimens of different species of our common snakes, and confine them in comfortable quarters to study their life habits. Petro built several commodious "snake boxes" and in a short time I secured several individuals of the different species, common in our vicinity. Other species not to be found in our territory I secured in my "hunts" for specimens of Nature's wonders. Sometimes these rambles in search of objects of

interest and of study lead me miles from the hermitage, when several days would elapse before fortune favored my search and I returned to Petro. During these prolonged wanderings in Nature's wildwoods, o'er rugged hills and along beautiful water-courses, Pluto was my sole companion, and many were the occasions when we slept on the mountain side, in a grassy meadow, or on a mossy bank beneath a sturdy oak along some musical brook.

Thus I secured my specimens, and I kept them in my ophidarium to closely observe their true natural life habits. So when summer was well advanced I had a fine collection of individuals of several different species of our common snakes, and from daily, careful observations of my pets, I learned almost the perfect life habits of these ignored yet highly interesting creatures.

Now, my Fritz; before discussing my valuable scientific notes on snake-life, allow me to present a few introductory facts relative to the classification, distribution, etc., of snakes in general. You know that reptiles are members of that great division of the animal kingdom, scientifically termed Vertebrates; that is, animals having a back-bone or spinal column. Certain characteristics peculiar to snakes confine these creatures to a limited division of the reptile class termed Ophidians. Again, to more simplify the proper study of animal life, snakes are divided into two distinct classes, as, veno-

mous or deadly, and non-venomous or harmless snakes.

The number of known species of the snake family is about sixteen hundred. Of this large variety comparatively few species are to be found in our temperate climate. In a territory extending from Canada to Virginia, and from the Atlantic ocean to the Ohio river, not more than twenty-five species of the snake family will reward the diligent search of the student of snake-life. Snakes seek warmth and shrink from cold, thus the greatest number of species are found in tropical climates, where, naturally enough, the venomous or deadly snakes abound, and there thousands of human lives are yearly sacrificed as victims to the deadly powers of the venomous species.

The form of the snake is easily distinguished from nearly every other vertebrate animal. It is an elongated, cylindrical or semi-cylindrical body, terminating in most cases in a tapering tail, and destitute of limbs. In size, snakes vary from the pretty little brown snake of about a foot in length and as large around as an ordinary lead pencil, to the great Boa which at times attains a length of twenty feet, with proportionate size of body. So much for generalities, my Fritz, now let me claim your interested attention to my "notes," which I feel assured, will prove both entertaining and instructive.

As the snake is destitute of limbs, its progress

is entirely dependent on the peculiar arrangements of the back-bone, the ribs and the large over-lapping scales that cover the under side of the body. The back-bone is arranged on the wonderful mechanical principle of the ball-and-socket joint, thus allowing a freedom of action that explains the snake's ability to twist and turn with lightning swiftness, fearless of injurious consequences. Just examine this spinal column that I removed from a large black snake, and you will see the exemplification of the wonderful ball-and-socket joint in the connection of its numerous vertebræ. Now this same principle exists in the connection of the numerous ribs to the spinal column or back-bone, and as these ribs are controlled by strong muscles you can easily comprehend the snake's swift and graceful motions. You will observe from this skin which I removed from a large specimen of water snake, that these large scales, or scutes as they are called, on the underside of the body over-lap; now just feel how rigid this lap is. Well, when the snake is in active progress over the rough surface of its natural habitat, it raises these numerous stiff over-lapping scales against the surface over which it glides, and, when you consider their conjunction with the numerous ribs, in some specimens three hundred pairs, you can secure a very satisfactory understanding of locomotion in snakes. The true explanation of locomotion in snakes is simply pushing curved portions of the body

against obstructions in their path, and raising the numerous large over-lapping scales or scutes on the underside of the body against the rough surface over which they swiftly glide. "You have certainly placed a snake on a smooth surface, as a dish or a polished table, and noted with amusement how vainly it endeavored to escape."

"Yes, my dear Count, I have enjoyed that experiment, and I noted its futile efforts to make progress over the smooth surface of its resting place; then I have removed the subject and placed it on a carpeted floor, and noticed how quickly it glided away. Such experiments convinced me that the large scutes were in some important manner very necessary aids in snake locomotion. But what is the explanation of a snake's progress in water?"

"In water the snake's progress is dependent on pushing curved portions of its graceful body against the resisting fluid. Snakes never advance in water by vertical curves, but always from side to side, or in horizontal curves."

SENSES OF SNAKES.

The senses of snakes are not acute. But I am convinced, by the results of careful study of my pets, that snakes are very sensitive to motion and to touch. Frequently I have quietly approached my "snake box," raised the lid very gently, and watched my snakes in

their natural behavior by the hour, without detecting any sign from them that my presence was noted. Again, while studiously observing my pets, Petro has suddenly approached the box to speak to me, when, presto, every snake was all activity either in flight or on the defensive; his sudden appearance had instantly attracted their attention, and alarmed them till they sought safety in flight, or coiled for fight.

The snake's eyes are lidless; they are, however well protected by a thin, transparent skin, which covers the eye like the crystal of a watch. This protecting skin comes away with the "slough" during the act of "shedding." You will notice how well the sight is guarded if you examine this fine specimen of "shed skin" that I removed from a large black snake.

The sight is deficient. As a rule, objects must have motion to attract the attention of a snake, though in some instances the tongue acts as a reliable guide in distinguishing natural food from other objects. I have repeatedly dropped live food in my snake box and I have carefully noted what followed. I have observed that if the unfortunate victim remained quiet, the snakes gave it but indifferent attention, even gliding over it at times as though really unaware of its presence. But as soon as the captive moved about, then, alas for it, the snakes instantly gave chase, and ere long the poor victim was seized by one, and frequently by two or more of its relentless pursuers. Now

toads and frogs, the natural food of most of our common snakes seem to possess an instinctive knowledge of the deficiency of sight in snakes. Many times have I observed a frog or a toad when pursued by a hungry snake, suddenly "squat" with its head pressed close to the ground, and its body "humped up," when the pursuing snake actually glided over the object of its pursuit, as though ignorant of its presence. Sometimes the snake has stopped in its chase beside the suddenly squatted victim, critically examined it, and then deliberately left the terror stricken creature as though fully satisfied that the object thus investigated was not the animated morsel of food which the snake had so energetically pursued. But as soon as the victim hopped about it at once attracted the eager attention of the hungry snake and paid very dearly for its indiscretion. Again, to illustrate this scientific fact, I have witnessed, many times, a snake pursue a toad, which eluded capture, when the snake has struck another snake that happened to be in its way and at once resolutely endeavored to gorge its prize, evidently convinced that it had made a capture of the victim it pursued; but the violent struggles of its relative soon impressed the stupid snake with a realization of its foolish error.

The snake's tongue is a very interesting object to study, my Fritz. It is generally supposed to be the "stinger" of the snake; even

intelligent persons who should possess a fuller knowledge of snake life than to entertain such a foolish error, sincerely believe that this ever active darting organ, the tongue, is the snake's deadly "stinger." Of course you know that snakes do not possess a sting. They have teeth and the deadly species have poison fangs in addition to the teeth ; with these they bite, but never sting.

A snake's tongue is a thread like muscle possessing considerable elasticity. It is smooth, soft and entirely free from the slimy exudations so common to a snake's mouth. This organ lies in the middle of the snake's lower jaw and directly beneath a sheath-like fold near the opening of the trachea or wind-pipe. About one-third of its full length is secured by two knotty muscles, one on each side of it and concealed from view by the trachea. The anterior or forward portion is entirely free and capable of considerable extension. This active part is generally red in color and black-tipped, sometimes it is entirely black and it is divided from the finely pointed tips to about one-third its full length.

When in action, the snake's tongue darts with lightning swiftness between the closed jaws ; when at rest it is withdrawn almost its full length into the sheath-like fold that holds it. The functions of the tongue are simply to feel where the snake is going, to taste, I sin-

cerely believe, and principally to terrify the natural enemies of the serpent family."

"You doubt then, that the tongue possesses any power to charm by reason of its terrifying dartings?"

"Charming by snakes is a myth, a superstitious fallacy, my Fritz. The snake's tongue may and doubtless does terrify the ignorant, but it positively possesses no mesmeric power. When the snake quietly glides along in its natural haunts undisturbed, it darts out its tongue, ever and anon, as though feeling its way. But when irritated or molested the snake manifests its fury by a continuous swift darting of this interesting organ as though it would pierce its tormentor to death. I believe that it is also a sensitive taster. The tongue of the snake is perfectly harmless. It is as soft and pliable as a silk thread, and it is utterly powerless to sufficiently harden itself to puncture the most delicate fabric. This organ is in nowise connected with the poison apparatus of our deadly snakes.

HOW SNAKES FEED.

"You have certainly seen a snake enjoy a meal of frog or toad or other natural food, my Fritz."

"Yes, I have witnessed snakes feeding; but, on deliberate consideration of the matter, I have seldom been so favored during my ram-

bles as to witness many of the natural life habits of even our commonest species."

"Very true; and the fact that snakes are so difficult to study in their natural haunts largely explains away many of the ridiculous sentiments and superstitions relating to the life history of even our most frequently met species. Now there is special interest attached to the feeding of snakes, because these creatures, unlike most other animals, feed by deglutition or gorging; that is, they swallow their food whole and entire, and positively do not rend and masticate their prey. All snakes, venomous and non-venomous species, have their mouth well provided with teeth. The harmless species have teeth closely set on the outer edge of each jaw, and as well, a semi-circular set placed on the upper jaw on the roof of the mouth. Snakes teeth are small, sharply pointed and curved backward towards the throat, thus it is a difficult matter for our common snake's prey, which is generally captured alive and active, to escape from its captor's grasp. In addition to the small, curved teeth common to all snakes, the venomous species possess poison fangs; in some species these fangs are set or fixed, but as a rule they are erectile. These fangs are generally placed one on each side of the upper jaw. They are provided with a canal through their whole length, through which the venom or death dealing poison is forced from the venom sac on the back part of the jaw, to the wound

inflicted by their bite. But we will discuss the deadly powers of the venomous snakes at some future season, at present we will confine ourselves to the consideration of our common snakes.

Snakes capture prey much larger round than their own bodies, so Nature has made a wonderful provision in the formation and the arrangement of the bones of the head and the jaws for a marvelous expansion of the jaws and the throat. The bones of the upper jaw are but loosely joined by ligaments and the arches of the palate are movable. The bones of the lower jaw, where they connect with the skull, are lengthened out into pedicles. From these facts, my dear Fritz, you secure a comprehension of the possibility of snakes gorging the large objects, that, in the act of deglutition, pass through their delicate throats. Carefully examine this skeleton prepared from one of my pets and you will then understand how truly Nature plans the structure of her creatures according to their life habits.

While gorging, or swallowing entire its food, the snake's mouth exudes copious secretions of slimy saliva. This greatly aids in the act of deglutition or gorging, as it serves as a most effectual lubricator. After securing its prey, the snake forces the hopeless struggling victim, if it be animate food, down into its capacious gullet by pushing forward first one side of its upper jaw, then the other side moves forward,

then the lower jaw is pushed forward till even with the upper jaw."

"Truly, Count, the snake pulls itself over its food in the act of gorging?"

"Yes, that is the real explanation of the act of deglutition in snakes. Now, however a snake may seize live prey, it generally works toward either extremity, preferably the anterior part of its victim's body before beginning the act of gorging. You can readily perceive the great advantage of swallowing its prey head-first, as it then has far less trouble with the limbs of its victim which are thus pressed close to the body and easily disappear down the snake's dilatible throat.

To illustrate the marvelous expansive powers of the snake's jaws and throat, and to prove the ability of the snake to gorge objects much larger in diameter than its own body, let me detail a case that came under my critical observation. I had confined in my snake-box a medium size water adder that persistently refused the tempting food dropped into the box for its nourishment. After many days fasting I finally tempted the adder with the following results. I secured a big toad, one of the largest specimens I have ever seen. This I dropped into the box and quietly sat by to watch developments. The snake was comfortably coiled in the water-vessel, with its head gracefully resting on the edge of the vessel. Soon the movements of the active toad attracted the

snake's attention. Then the snake glided over the edge of the water-vessel till its head and a few inches of the forward part of its body rested on the ground, the remainder of its body was coiled in the vessel. In this watchful position the snake patiently waited, when presently the unwary toad hopped within reach of its natural foe, then, quick as thought, the snake seized the luckless toad and at once attempted to drag its unwieldy burden back with itself, into the vessel of water. The toad struggled bravely, but the pointed curved teeth of the determined snake held it securely and after some effort on the part of the snake, the big "hopper" was soon struggling for life and liberty in the water. I felt convinced that the snake could not by any possible means master such a large victim. Naturally I was keenly interested in the apparently unequal struggle. The snake was not over two feet in length and its head was not over one inch in width, while the toad was fully three inches wide and plump and solid. The snake seemed confident of its ability to master its big prey and while keeping it under water as though intent on drowning it, the adder deliberately proceeded to prepare its big meal for gorging. After consuming considerable time in an apparent effort to compress the toad into as compact a form as possible, the snake worked towards the toad's head and there began the act of gorging.

I considered it an impossibility for such a

large object to pass between such small jaws and through the snake's delicate neck. Yet the adder continued the interesting exercise till I really feared those small jaws would tear asunder from the severe strain experienced in forcing such a large body between them. Little by little the toad was drawn in; wider and still wider the snake's jaws expanded, till after experiencing some trouble with the toad's plump fore-legs, the big meal gradually disappeared within the snake's nearly bursting throat. After an hour and a half of determined effort the toad was snugly resting within the snake's roomy stomach. So swollen was the snake at the point where the toad rested as to be unable to move about, so I carefully raised the adder from the ground where the struggle was finished and placed it in a corner of the box to digest its big meal in undisturbed comfort.

After the toad disappeared down into the snake's gullet, the jaws regained their normal condition and appearance, and except for the large lump midway in the snake's body no one could hardly credit the fact that but a short time had elapsed since those delicate jaws appeared as if they must fly apart from the apparently unnatural strain they experienced. Witnessing the whole interesting event I was both surprised and impressed. That hearty meal sufficed the adder for two weeks.

The snake's food passes through the throat,

and it is then forced into the stomach by a strong contraction of the ribs immediately in front of the object swallowed. As the ribs are not joined to a sternum or breast-bone, but have a freedom of action, the body also possesses a wonderful power of expansion, thus easily accommodating the large objects gorged by the snake. The digestive fluids of a snake's stomach are indeed chemically powerful. As the snake gorges its food, the stomach receives it in an almost natural condition, sometimes even alive and active; frequently I have noticed a spasmodic movement, or heard a mournful croak from a toad or frog but lately swallowed. Now, with the food in this nearly normal condition, digestion begins and flesh, bones, skin, fins and feathers, whatever the character of the food may be, must be assimilated. That the digestion of these seemingly indigestible substances is almost perfect, is proved beyond doubt, in the fact that seldom do the snake's excrements show any trace or vestige of what has been swallowed.

“Do snakes ever over-estimate their powers and seize prey too large for them to master?”

“Frequently, my Fritz; snakes seem to exercise no judgment in seizing their prey. Often have I noticed my pets seize and tenaciously hold prey so large as to be far beyond the snake's ability to gorge it and after being pulled about by the struggling captive, the snake has been compelled to reluctantly free the intended

victim. A hearty meal will nourish a snake for many days, yet when conditions make it necessary a snake will fast for several weeks and still be active.

Snakes drink water readily. I have many times observed individuals of my numerous pets gracefully glide over the edge of the water-vessel, immerse about one-half of the head in the water and drink till satisfied. When drinking, the jaws move slightly from side to side, while the swallowing of the fluid can be easily traced by the action of the throat."

"Do snakes always demand living food to satisfy their appetite?"

"As a rule they do. Some species of snakes subsist entirely on eggs; but the greatest proportion of the snake family subsist on live prey. Occasionally I have tempted my pets to seize and gorge dead food; but in such cases the victims were but lately killed and being fresh and palatable the snake's dull senses were sufficiently deceived to warrant the snake in gorging its truly unnatural meal. Of course you know that venomous snakes usually kill their prey before attempting to gorge it; and large snakes of the boa family crush their prey to death and then prepare it for gorging. These facts are due to the truth that the natural food of such species of snakes consists of animals sufficiently large and strong as to give the snake a serious struggle if it attempted to gorge its fierce victim while in the full possession of

the frequently formidable means of defense of such prey. Now the natural food of our common snakes is generally weak and unable to seriously injure the snake during a life struggle, so it soon succumbs to the snake's superior strength and it can thus be easily gorged even when live and active.

“Have you noticed whether snakes interfere with each other when feeding, or does the law of possession protect the fortunate snake against the attempts of relatives to contest its possession?”

“The law of the ‘survival of the fittest’ prevails among snakes as elsewhere, my Fritz. Frequently I have observed several snakes persistently contest the possession of a hopeless toad or frog. It is a common occurrence among snakes in confinement, for two individuals to seize a toad or frog at opposite extremities and fiercely and determinedly struggle for the possession of the luckless victim. Such struggles at times continue till one snake not alone swallows the contested meal, but as well, a large portion of its determined contestant. Here you see in this jar a garter snake and a water adder, each about two feet in length. Now neither of these species feed on snakes, yet you will perceive that about six inches of the forward part of the garter snake is down the water snake's gullet. How much more of the garter snake's body would have disappeared if I had not interrupted the interesting event

I am unable to state, for fearing I might lose a good cabinet specimen by waiting too long a time, when they would be sure to separate, I prepared them for keeping in this condition.”

“You really do not mean that after swallowing a portion of its unfortunate contestant for the meal, the water snake would free its captive and the two would separate without injury to either?”

“Yes, I mean exactly what I stated. I have observed two baby garter snakes fiercely contest the possession of a wee baby toad that they had both seized at opposite extremities, when one succeeded in securing all of the toad and besides swallowed all but an inch of the struggling relative. Then when disturbed by my handling them, each hastily wriggled free from the unnatural embrace and neither showed any injury whatever from their strange experience. Of course the successful contestant retained the toad.”

“Well, well, my dear Count that is indeed an interesting insight into the life habits of these strange creatures.”

SHEDDING THE SKIN.

“A highly interesting feature in the life habits of our common snakes is the act of shedding the skin or ‘slough.’ When the growth of the snake, which by the way, is quite rapid in baby snakes, causes the epidermis to become

uncomfortably tight, Nature provides a new epidermis and enables the snake to cast or 'shed' its old skin. Previous to this experience the snake appears to be 'stone blind,' because the protecting skin over the eyes becomes loose and dead, giving to those organs a bluish white appearance as though the sight was entirely lost. At this time the snake seeks seclusion, seeming to realize the fact that it moves about at a serious disadvantage and risk while its sight is covered by the loose, opaque skin. Thus, being unable to distinguish clearly objects about it the snake patiently awaits the gradual loosening of its entire epidermis in some quiet shelter. In young snakes but a short time elapses during the whole process of 'shedding,' while in adults a week or two passes during the preparation and execution of this change. While awaiting this peculiar experience in a snake's life the subject feeds but little, evidently realizing its handicapped condition, and safely sheltered in some safe retreat, it seldom ventures forth till able to 'cast' its old skin and appear in a new dress, bright and attractive and in full enjoyment again of all its faculties.

When the skin is ready to be 'cast' it parts about the jaws first and can then be easily pushed off the body. The snake now leaves its seclusion and by pushing its way among weeds, vines and other obstructions in its path, it soon frees itself from its cumbersome old skin, turn-

ing the 'slough' inside out in the operation, and appears bright, active and hungry in a new dress.

Often, when aware that my pets were ready to shed their old skins, I have taken one in my hands and carefully freeing the skin about the jaws, I have firmly held the loosened portion, when the snake has gradually worked itself out of the old skin, as you would remove a tightly fitting kid glove, leaving in my hands a perfect cast 'slough.' "

"During the act of shedding, does the snake quickly glide out of its loose skin?"

"No, my Fritz; the process of 'casting' a 'slough' is attended with considerable deliberate exertion on the part of the snake and frequently consumes hours, but when receiving unnatural assistance but a few minutes elapses during the act. After the skin is freed about the head, the snake in its natural haunts, slowly forces its way among the grass or weeds, or rubs against hard substances and these gradually push the skin back over the snake's body, while the snake contracts its body immediately in front of the free part of the skin; and thus, by rubbing and contracting, the skin is slowly pushed off. When assistance is rendered of course the snake has only to contract and advance and in a short time is entirely free from its uncomfortable vesture. Sometimes when shedding its skin there will be a 'green' spot in the 'slough' and this will so tightly adhere

to the body, that after the loosened portion of the skin is shed, this patch will remain and several days will pass before it is sufficiently dry and loose to be 'cast.'

These shed skins or 'sloughs' are always a yellowish white color and very seldom show any markings, however attractively the snake may be marked. Yet the scale arrangement is so true that an advanced student of snake life can easily distinguish the species to which the 'slough' belongs. It is a common occurrence for snakes to lie in water when about to 'cast' their skins, and the 'slough' then becomes softened by the soaking it receives, when it can be easily discarded."

"How often do snakes 'cast' their skins? You know it is generally accepted as a scientific fact that adult snakes 'shed' about twice a year. Now how do your observations along this line agree with this prevailing opinion?"

"Well, you will of course appreciate the fact that animals in confinement differ somewhat in behavior from their relatives in the natural wild state of the species. Now, naturally enough, young, growing snakes 'shed' frequently, but large adult specimens must be well fed indeed to 'cast' their 'slough' more than two or three times during the period of activity of our common snakes in their natural haunts. In the early spring, after awaking from its prolonged winter's sleep, the snake 'casts' its skin soon after becoming fully interested in its sur-

roundings. Then later in the season when food is comparatively plentiful another 'slough' is shed, and towards the close of the warm term still another one may be 'cast' even by large full grown specimens. In captivity, where plentiful supplies of natural food are at hand to be enjoyed without the exertion necessary to secure prey in a wild state, I have known very large specimens of black snakes, water adders and garter snakes to 'cast' four or even five 'sloughs' in a season."

"Why is it true that in my numerous rambles over Nature's expanses of field and forest, meadow and marsh and along the banks of streams, I seldom find a perfect 'shed' snake skin?"

"It is true, my Fritz, that rarely indeed, will even an observant Rambler secure a perfect 'slough' in his walks abroad. This is explained by the fact that a snake while casting its "slough" and pushing its way through rank vegetable growths to aid in the process, almost invariably tears the skin and leaves portions of it here and there as torn off by the grass or weeds. Allow me to show you my collection of 'shed' snake skins, all of which are perfect because my careful assistance during the process of 'shedding' prevented the usual severe treatment the skins receive when 'cast' in a natural manner. Here, you see, I have a fine assortment ranging from a foot to nearly seven feet in length. This fine large one, which is

about as broad as your hand and nearly seven feet in length was 'cast,' with my assistance, by a large specimen of Pine snake that I had among my pets. The others are from black snakes four and five feet in length, and other species of our harmless snakes. These small ones are from the little burrowing snakes that attain a length of less than a foot. You will notice these are as soft as silk. When 'cast,' snake skins are soft and pliable, but when dried you will notice they generally become hard and brittle, especially large specimens.

A snake in its new dress, after casting its 'slough,' is as smooth as china, and it is entirely free from the 'sliminess' that prevailing ignorance of snake life persistently attributes to these despised creatures. Eels are slimy; snakes are as dry, and in some species as silky in texture, as ivory."

MODES OF DEFENSE.

"We will next consider the means of defense possessed and exercised by our common snakes. Escape is the first impulse of our common snake, when suddenly surprised in its natural haunts. Seldom, if ever, does an innocuous snake seek combat with man or beast, but when escape is seemingly impossible and the natural instinct of self-preservation inspires defense, then even very small specimens of our harmless snakes manifest a strong disposition

to fight. The threatening appearance of a snake on the defensive generally suffices to arrest an attack till the snake is able to glide into some convenient shelter. Bear in mind this fact, my dear Fritz, that but comparatively few persons are willing to attack a snake that suddenly appears in their way, unless sticks or stones are at hand, and you will readily understand why snakes do not really require dangerous defensive powers. You know a bad reputation is frequently as effectual in guarding one from assault as a coat of armor.

When suddenly surprised and unable to escape attack, our common snake immediately assumes a defensive attitude, and if tormented will unhesitatingly dart the forward part of its lithe body at its tormentor and endeavor to fasten its small sharp teeth in the person of its enemy. Large specimens of our common snakes, such as attain a length of several feet, are capable of inflicting quite a severe wound, causing blood to flow. In such cases, persons wounded by a snake's bite, naturally experience some alarm lest the wound should prove to be a very serious matter. I have been frequently bitten by large non-venomous snakes, when the blood has freely flowed from every puncture of the needle like teeth, yet I have never suffered any serious effects from such attacks. The wound usually appeared like a severe pin scratch and was really less painful than a pin scratch generally proves to be.

To attack its tormentor, the snake draws back its head and several inches of the forward part of its body in a graceful curve, and then, with mouth wide open it darts this erect portion of its body with lightning like swiftness at the object of its assault, immediately regaining its defensive attitude if the blow falls short of its mark. Except in quite small specimens, the body never wholly leaves the ground during the fierce attacks of the irritated snake."

"Do you really mean to state as a scientific fact that the body of a snake does not wholly leave the ground during its vicious assaults, when the enraged snake attempts to fasten its teeth in the person of its tormentor?"

"Most assuredly I do, my Fritz, never except in small, vicious specimens of our most savage species, is more than half of the body clear of the ground during its fierce attacks. Thus statements declaring that snakes spring bodily at their enemy is positively without foundation in facts."

The safest method of securing a specimen of our common snakes, except large black snakes, is to hold the subject firmly to the ground in such a manner as to allow you to seize it immediately back of the jaws; then it cannot bite and you are master of the situation. When capturing large black snakes, which not only bite severely but as well exercise the power to squeeze peculiar to this species, seize your captive back of the jaws with one hand

and about midway of the body with the other, thus preventing it from biting or using its powers of constriction. The common snakes that are not over a foot in length when full grown, do not attempt to bite and can be handled with impunity, fearless of injury.

Though a wound of any character is to be avoided, yet the bite of one of our common snakes is really insignificant, as there is no secretion of venom in the jaws of our innocuous snakes. However, as it is not at all impossible to handle our harmless species of snakes without fear of their bites, it is still unwise to be careless in securing specimens. You know, my Fritz, that some persons are very susceptible to poisonous influences. What would be but a mere scratch to one individual might prove a serious wound to another, whose physical condition was exceedingly sensitive to the slightest presence of poison associated with a bite inflicted by even a non-venomous snake. To illustrate my point, I may carelessly capture a large specimen of harmless snake, irritate it and receive a severe bite from the sharp teeth of my prize. Now suppose the snake thus captured had but lately enjoyed a hearty meal of natural prey, and as a natural and very reasonable proposition, the saliva of the snake and the blood of its victim freely flowing while the snake was gorging its meal were dried and decomposed about the teeth of the snake at the time it inflicted the wound. If

my physical condition was keenly sensitive to poisonous influences when I received the bite, would it be a cause for surprise if the wound from a bite under such circumstances should prove a serious matter? I think not, and I am strongly convinced that many so-called deadly snake-bites are nothing more than wounds inflicted by a harmless snake at a time when the teeth of the snake were in this poisoned state, and the physical condition of the person bitten was most susceptible to the slightest presence of poison associated with the bite.

Some persons are sadly afflicted by the mere presence of poison-ivy, while others may heedlessly and without serious results move about in its poisonous midst. Now, this is simply a matter of susceptibility to poisonous influences. So it is with the bite of a harmless or innocuous snake. Though generally insignificant, yet under certain conditions in the snake and also in the victim of the snake's bite, a wound inflicted under these circumstances has proved a very serious affair."

"There is certainly considerable food for thought in your propositions, my dear Count. I have given but a superficial attention to the life habits of snakes and I must therefore acknowledge a woful ignorance of the interesting characteristics of these too generally despised creatures. But I can easily comprehend from your lucid statements, how a truly and scientifically innocuous snake can become, under

certain unusual yet possible conditions, a veritable deadly serpent."

"Yes, there is no doubt that the really venomous snakes bear the burden of reproach for bites of a serious nature inflicted by innocuous snakes. But to return to the consideration of modes of defense of our common harmless species. The large over-lapping scales on the under-side of a snake, or 'scutes' as they are called, frequently serve as a most effectual means of defense when the snake is so fortunate as to glide into a convenient hole beneath a stump of tree or in a bank or wall. Often have I seized a snake by the tail as it was disappearing in shelter beneath a rock or a stump of old tree, and I have been compelled to reluctantly allow it to escape or dismember it. So strongly has it resisted my efforts to drag it from its shelter, by the firm hold its scutes secured on the rough surface of its retreat, that the stretching of the body warned me to release it, or it would part and leave only its tail in my hand. Now if you will pass your finger over the surface of the underside of this specimen, and from tail to head, thus, you will receive an intelligent idea of how firmly a snake can hold on to the rough surface over which it glides. When this 'lap' is raised in this manner, then you get a satisfactory conception of how important these numerous strong scales, in conjunction with the many pairs of loose ribs, become as means of both locomotion and defense."

“Truly, the innocuous snakes possess but inferior means of defense against the destroying hand of man, their chiefest foe. In my opinion the universal sentiments of detestation and fear with which these creatures are regarded constitute their best protection from injury at the hand of man.”

“You speak truly, my Fritz. Though ‘cursed above all cattle, and above every beast of the field’ is the still existing reproach under which the serpent lies, yet but few persons seek an encounter with a snake, while the great mass of humanity is content ‘to pass by on the other side’ when a specimen of this much feared as well as universally despised creature is met. The fierce and threatening dartings of the tongue of an infuriated snake serve as a very effectual means of defense.”

HOW SNAKES BREED.

“In my pursuit of snake-lore I have been peculiarly fortunate in my observations of the breeding habits of our common snakes. I am surprised to find such a serious dearth of reliable information on this subject so evident in the great mass of scientific literature that professes to record the life habits of serpents. Thus, you can appreciate my feelings of satisfaction, inspired by the pleasing and instructive observations I have been able to make

along this important line of strictly scientific investigation.

The propagation of snakes is especially interesting from the fact that it is generally conceded by scientific authorities on this subject that snakes are oviparous, viviparous, or oviviviparous. More simply speaking some species lay eggs, other species give birth and still other species either lay eggs or give birth, according as conditions are favorable to either mode of generation. Now it is not my purpose to discuss the scientific verity of this generally accepted belief, but to simply present in as lucid manner as possible the results of my personal observations on this subject.

Early in the spring, soon after awaking from its prolonged nap, the adult snake seeks a mate. I have been favored on several occasions with an opportunity to note this interesting feature in the life-habits of our common snakes, but I am unable to present the strictly scientific discussion of this subject in a popular work of this character.

In the oviparous snakes the period of gestation is about ten weeks, when the female seeks a suitable place in which to lay her eggs. These are laid in a slight excavation a few inches deep in the soft earth where they are left to be hatched by the moist heat of their resting place. Beneath old stumps of trees, in an open field, or along the edge of a wooded district bordering an open field, these snake eggs are to

be found. Frequently these eggs are plowed up by the husbandman, who conscientiously believes he is doing society a great service by destroying all he finds. But he commits a serious error to his own immediate injury, as snakes feed on field-mice, moles and insects hurtful to the farmer's products.

The eggs of our common oviparous snakes are a yellowish white in color and vary from $1 \times \frac{1}{2}$ inch, to the size of a pigeon's egg. In form they are either irregularly elliptical or cylindrical. When cylindrical in form they have flat ends and several of them are connected by a thin thread-like skin about a half inch in length between each egg. The shell is a tough leathery skin, sometimes covered with small hard pimples. The number of eggs laid at one time varies with the species. My pets have laid from a dozen to as high as twenty-two eggs at one time."

"You are inclined to be skeptical in your acceptance of reports that individuals of our common snakes have been found with thirty or forty eggs?"

"Such cases may occur, my Fritz. But in treating of the life habits of our snakes I speak of the rule and not of the rare exception. As there are strange and unusual births among the higher forms of animal life, so there may be 'freaks' of Nature found in reptile life. I speak of what I know from my own personal observations. So follow me closely as I give

you the results of my careful observations relating to generation in snakes,

One of my large black snakes, whose mating conduct I had witnessed with keen interest in the early spring, laid twenty-two eggs. This event occurred July 5. The eggs were deposited one at a time, with apparent effort on the part of the snake. Some of them were $1\frac{1}{2} \times \frac{3}{4}$ inches in size and elliptical in form. Others were $\frac{3}{4} \times \frac{3}{4}$ inches in size, cylindrical in form with flat ends, and several of these were connected at the ends by a thin, thread-like skin, about a half inch in length. Cutting through the tough skin of an egg I found the contents to be similar to the 'white' of a hen's egg. Leaving the eggs where the snake deposited them for a period of about three weeks I again opened one. On cutting through the tough skin at this time, a small quantity of albumen fell out; next I observed a ball of fatty tissue which occupied nearly the whole space in the shell. Opening this yoke I found the baby snake coiled in its center. Carefully removing the little snake I ascertained that its length was seven inches; its body was almost transparent, its eyes were very prominent and the scale arrangement was beautifully distinct. The color of the baby snake was grayish-white, with dark markings. Although I noticed a slight pulsation of the heart, showing life, yet the snake died when removed from the egg, because immaturely developed.

Now follow me closely, my Fritz. In the fore-part of August a garter snake, that mated in April, gave birth to sixteen active baby snakes. During the delivery of these interesting little creatures, the parent snake laid in an irregularly curved position with her body pressed close to the ground. The birth of each little snake required such muscular exertion as to plainly show the snake's numerous ribs during the muscular contraction required to deliver the little thing. At birth the baby snake was coiled in a mucous envelope and as soon as delivered it vainly attempted to free itself from this mucous covering, but so elastic was it as to defy the puny efforts of the little prisoner. After a few minutes this elastic, mucous covering dried, when the baby snake easily parted its bonds, gaped several times as though really testing the expansive powers of its dilatable jaws and then started in active search for nourishment. The length of the baby snake was about six inches, and the body was slight and graceful in form, with markings much lighter and more delicate than on the parent snake. Here you have an intelligent idea of the peculiar features in the propagation of the young of the oviparous and the viviparous species of our common snakes.

Now to prove to your satisfaction that snakes may possibly be only oviparous, let me give you the results of my careful observations that must assuredly arouse doubts in a thoughtful

mind relative to the scientific reliability of viviparous snakes. I had a fine specimen of full grown garter snake that I daily expected would give birth to a family of little ones. Well, one day one of my large black snakes attacked the garter snake, and before I could prevent it deliberately began to gorge its big victim. I rescued the garter snake but not before it had received such injuries as to cause a premature delivery of about a dozen little dead snakes. Nearly all of these little snakes were delivered with a mass of fatty tissue enveloped in a mucous covering. Again, a large water adder that had been caught and severely injured on a fish-hook was presented to me, to all appearances dead. Well, I revived it, and in a short time it also gave premature birth to several little snakes, all dead and accompanied with the mass of fatty tissue as in the previous case. Again, late in October one of my water adders gave birth to about a dozen active little snakes, and in addition to them expelled several egg-shaped masses of fatty tissue. Now, does not the appearance of the baby snake prematurely delivered with its accompaniment of fatty tissue, and the appearance of the baby snake in its fatty tissue within the egg, prove a strong argument in support of the proposition that snakes are oviparous, but some species hatch the eggs in their own body, while others deposit the eggs in conditions favorable to their full development by the influence of solar heat? ”

“Certainly, my dear Count, your critical observations and your very plausible proposition must accomplish much toward disposing of the generally accepted belief that snakes are both oviparous and viviparous. I shall hereafter feel fully convinced in my mind that snakes are only oviparous in their generative habits.”

“Well, my Fritz, nearly all scientific beliefs are open to contradiction through the results of careful observations of critical investigators, and it is only by the honest efforts of such careful observers that science becomes a reliable source of truth.”

“As a rule snakes pay but indifferent attention to their offspring. I have never witnessed an instance when the parent snake manifested any concern for the young she had brought into existence. Yet it is a well authenticated fact that the parent will temporarily swallow its young to protect them from threatening danger.”

“Is there any positively reliable external marks or peculiarities by which the sex of our common snakes can be distinguished?”

“No. Though I have frequently witnessed the mating habits of my pets, yet even after the most critical examination I have utterly failed to secure any distinguishing features that would at once give the sex of a specimen secured in its natural haunts. The female is generally larger than her mate, but this is a most unsatisfactory proof of sex, as I have seen

males over eighteen inches in length mate with large, full grown females three feet in length. Again, I have seen females of this same species not over twenty inches in length give birth to sixteen baby snakes, all well and active. In species that are prominently marked and colored there may exist a slight difference in appearance that will positively distinguish sex, but I am not yet able to lay down any law that can be assuredly relied on to distinguish sex by any external appearances of our common snakes found singly in their native wilds. Dissection is the only positive proof of sex."

HIBERNATION.

"Another interesting feature in the life-habits of the ophidians is hibernation. Frequently this question is asked, 'What becomes of the snakes during winter?' Of course you know that all reptiles hibernate during the cold season. The period of activity of snakes in our temperate climate is about seven months. Naturally enough this term is largely dependent on the character of our winters. If we experience an 'open winter,' snakes remain abroad later than when a severe frigid season prevails. As a rule the 'cold snaps' in Autumn drive all our snakes into winter quarters. Occasionally during the 'warm spells' in the beautiful season of Indian summer, individuals may be met enjoying a quiet 'siesta' beneath

the sun's warm rays, protected from the chilly north winds; but as a rule snakes 'turn in' for a prolonged sleep with the first real evidences of winter's advent. Now this long term of slumber is called hibernation, a period of absolute inactivity in a state of torpidity, insensible to the pangs of hunger and the chilling frosts of winter's inclemency. This condition of insensibility is a happy provision of Nature especially beneficial to such 'cold blooded,' animals as reptiles.

The natural food of snakes is almost entirely lacking during the freezing cold of winter, so to lie dormant during this season of serious scarcity of sustenance is certainly an agreeable way to escape starvation. Frogs, toads, and other batrachians subsist largely on insects, and our common snakes depend for their sustenance on frogs, toads, small mammals, birds and insects, nearly all of which disappear with the arrival of the first chilling frosts of winter. Thus deprived of their natural food the snakes are compelled during this season of 'short rations' to lie torpid or to starve. Nature has endowed these creatures with an instinct that leads them to hibernate during the season of limited food supplies, and thus pass weeks in a state of absolute freedom from gnawing appetite.

Another cause for hibernation among the ophidians is found in the fact that due to an imperfect aeration of the blood from a defective circulation of the vital fluid, the snake would

soon freeze to death if it attempted to pass through winter exposed to the deadly rigors of this season. So snakes hibernate to escape death by freezing."

"Is hibernation a strict necessity? Cannot a snake under favorable conditions live through winter and neither starve nor freeze?"

"Hibernation is not a rigid law of Nature. Domestication removes the causes for seeking escape from death by starvation or freezing, and a snake may remain both active and healthy during the long term of frigid weather with comparatively little food. I have kept specimens during winter, housed in comfortable quarters, with absolutely no food, and in the early Spring they were active and healthy, some of them even shedding their skins; frequently during their protracted fast they were quite active.

I am not aware that snakes hold any preference for special places in which to hibernate. So long as they can find shelter from the freezing cold of winter, they seem indifferent to special localities, I have noticed that the places selected in which to hibernate are generally sheltered from the piercing north winds. The snake evidently possesses an instinct that leads it to seek its place to hibernate out of the reach of killing frosts. During this hibernal torpidity the snake succumbs to sudden severe changes in the temperature.

I have surprised snakes just awakend from

their prolonged slumbers in various situations and conditions. I have caught them in early spring basking in the sun's warm rays on leaves and flat stones on the south side of a sunny bank. I have secured them beneath decayed vegetation along meadow streams, snugly sheltered from winter's cold blasts among the aquatic plants peculiar to such localities. I have unearthed a colony of different species, so twined and tangled together as to make it a difficult task to distinguish individuals. After a few warm days in early spring an observant Rambler will notice numerous round holes in the soft mold of meadow-land, and in the banks of high ground facing the south, all unmistakable evidences of the places of hibernation used by our common snakes.

During this lethargic state of hibernation, respiration and circulation in the snake are almost entirely suspended. When brought into association with a moderate rise in temperature the hibernating snake soon regains activity."

DO SNAKES CHARM?

"Now, my dear Count, there is a much debated question, relative to the peculiar powers of snakes, that I wish to ask you: Do snakes charm?"

"That simple question has been asked time and again during decades of scientific research, and it still remains a controverted point. It is

my honest conviction that the question is incorrectly worded; careful observations of the life habits of our common snakes, confirms my opinion that the ophidians possess no mesmeric power, which, when exercised, places the victim in easy reach of the expectant snake; rather the inherent dread of snakes universally entertained by man and the higher orders of brutes, so affects some individuals, possessing a highly nervous temperament as to make them powerless to flee or fight when suddenly encountering a snake in their path.

The great majority of the human family, learned and illiterate, accept with little or absolutely no hesitation or doubt a prevalent belief that snakes are endowed with certain mesmeric powers, through the exercise of which they stupify or paralyze their prey and thus are enabled to make an easy capture. The most absurd and unreasonable instances of 'snake charming' are readily accepted and cherished, and frequently grossly exaggerated as evidences of the terrifying potency of the snake's power over man and beast. Careful investigation of these 'authentic cases' results in the fact that the victim was paralyzed with fear, rather than made powerless by the exercise of any mesmeric influence exerted by the snake. Now, in nearly every human mind a strong sentiment of repugnance, and in some cases an actual horror of snakes in general finds lodgment. Strong men, as well as delicate, sensitive women

turn pale and are subjected to intense mental perturbation when even small specimens of the snake family come in contact with their person. Herein lies the whole secret of the prevailing erroneous belief that 'snakes do charm.' So we conclude it must be accepted as a scientific verity that the power to 'charm,' so generally granted to the snake, does not exist; but rather, animate Nature, in its highest and most sensitive forms, entertains such strong feelings of fear and repulsion towards the snake as to frequently suffer temporary paralysis of their powers when suddenly meeting a terror-inspiring snake."

"Your intelligent consideration of this much mooted question, certainly goes far toward dissipating the general belief that 'snakes do charm.' I remember distinctly an instance in my own family, when a highly sensitive young lady relative was so overpowered by fear on suddenly meeting a large black snake ready for fight, that assistance was necessary to remove her from the spot, when she fainted and afterwards became seriously hysterical. For weeks after her terrifying experience she was visibly affected when the event was mentioned. Now my dear Count, I have long entertained an honest conviction that but for the timely arrival of aid, so intense was her terror as to have resulted in dementia or even death, especially would her terrible experience have resulted fatally if the snake in its assaults had fastened

its teeth in her garments; and thus have become attached to her person. But I have never doubted that her serious condition was caused by fright and horror and in no degree inspired by any subtle power 'to charm,' exercised by the snake."

"You are certainly correct in your conclusions, my Fritz. The snake would have been but a passive factor in any fatal results following the young lady's experience, for terror only was the cause of her serious condition."



CHAPTER III.

OUR COMMON SNAKES.

THE GARTER SNAKES.

“The garter snake is beyond doubt the ‘common snake’ of the eastern and middle states of our union. It is surprising, my Fritz, to notice the readiness with which so many, even intelligent persons, call nearly all snakes which may cross their path during a quiet walk abroad with Nature, ‘garter snakes.’ Yet, as you have doubtless frequently noticed, this species is so strongly marked as to allow no excuse for confusing it with other species of our common snakes.

The garter snake is readily distinguished from other species of our common snakes by the presence of a prominent dorsal stripe, that runs along the back from head to tail. This stripe is usually yellowish in color and very distinct. Besides this dorsal stripe there is always present along each side and running parallel with the dorsal stripe a duller, yet easily distinguished lateral stripe. These three stripes are always present on the garter snakes, and thus they comprise a positive proof of the species to which the individual belongs that possesses the stripes.

In the eastern territory of our country we find but two distinct species of garter snakes. One of these is very variable, with two strongly marked varieties. This species is the common garter snake frequently called the 'striped snake.'

The common garter snake or striped snake has a stout body and attains a length of three feet when full grown. Its general color is dull greenish above, light greenish below and along the sides. The dorsal stripe is narrow but prominent, the lateral stripes are much broader but duller than the dorsal stripe. Rows of dark spots along the sides between the stripes; these are not prominent in this species—*Eutania-sirtalis*. No marks or spots on under side, yet there are always present on the outer edges of each scute or large overlapping scale on the under side, a row of small semi-circular dots. The tail is about one-fifth the total length of the body and it tapers to a fine point. So variable in coloration is this species that I have found specimens from light pea-green to almost black in color, yet because of the ever-present stripes I never hesitated to immediately distinguish the individuals as members of the garter snake family.

The varieties of this species are the *ordinata* which is grayish or brownish green with dull stripes but very prominent spots, generally about eighty-five in number. The *dorsalis* which has a broad dorsal stripe and a row of

distinct spots above the lateral stripes ; and the *obscura* which is dusky gray or brown in color, with a faint dorsal stripe, while the lateral stripes merge into the color of the under parts. This is the least attractive of the garter snakes.

The common garter snake is active in its habits, rather irritable in temper, readily defending itself against attack, yet in confinement I have found it to be an interesting and tractable pet.

The ribbon snake, or swift garter snake is a really pretty and exceedingly graceful little creature. It is slender in form, and grows to a length of about three feet. The tail is about one-third the full length of the body and gracefully tapers to a fine point. The general color of this species (*Eutania-saurita*) is bright chestnut brown above, greenish below, with bright yellowish stripes. Below the lateral stripes the color is a clear light brown. No spots.

This snake is exceedingly swift in its movements. Frequently when I have attempted to catch a specimen in its natural wilds, so quick has been its movements to elude capture as to really appear as if it literally sprang clear of the ground. It seldom attempts to bite and makes a pleasing pet.

The garter snakes are usually found in the vicinity of streams, where frogs and toads abound. Their food consists of frogs and toads mainly, yet I have witnessed my pets greedily seize and devour earth worms and also small fish.

About the first week in August the female seeks a suitable place to bring forth her young, usually sixteen in number.

Of course you will understand, that my statements relative to the life-habits of snakes, as I have observed them, apply to the general rule; but I have also witnessed rare and exceptional cases in the different habits of my pets. Now, though garter snakes generally bring forth their young in the early part of August and the number to a birth seldom exceeds eighteen, yet I have witnessed peculiar cases of birth as late in the season as the middle of October, and one of my large female garter snakes had a peculiar and strangely unusual experience of double birth that is worthy of record. Early in my spring rambles I captured a large specimen of garter snake. I put this in my 'snake box' and after a few days witnessed it mating with a smaller garter snake. About the middle of the following August, as I fully expected it to do, it gave birth to sixteen active baby snakes. After this experience I was much interested in it because of its abnormally large size. Day after day it seemed to grow till it was exceptionally large and round, and as I did not notice any unusually greedy behavior on its part, but rather noted that it was clumsy in its action and ate but rarely, I became much interested in finding out the cause of its abnormal size. Finally it became so plump and unwieldy as to be hardly able

to move about. At last the secret of its odd appearance was made known and just three weeks after it gave birth to the sixteen little snakes I made my usual visit to the box to see how my fat garter snake was progressing, when I was amazed to find my snake reduced to but little more than a skeleton, while the box was swarming with active little garter snakes. These I removed to another box and while so doing I counted sixty lively little baby garter snakes all about the usual size. It was a remarkable case of 'freak birth' in snakes, so I preserved the prolific parent snake in alcohol. You see here it is, no larger than an ordinary full grown garter snake, while it is so emaciated that its ribs are perceptible through the skin."

"That was a strange case indeed. I suppose such cases are inexplicable. Like strange freaks of Nature evidenced in higher forms of animal life there is hardly any satisfactory explanation of such cases."

"You are right; seldom can such unusual instances in generation be explained.

The baby garter snake is a miniature of its parent; it is usually about six inches long, active and graceful. A short time after birth it is in earnest search for its natural nourishment, worms, tadpoles and baby toads. I have frequently watched individuals of my large family of baby garter snakes fiercely struggle for the possession of a wee baby toad, contested by two or even more resolute little snakes till

one snake not only swallowed the toad but as well the greater portion of its unfortunate relative; then when I freed the imprisoned little snake it was soon eagerly in search of another toad.

Garter snakes are partial to water. I noticed that they are graceful swimmers and pass much time in harmonious company with the water adders in the water-vessel placed in the box for my pets. They become quite tame in confinement and seldom attempt to bite."

THE WATER SNAKES.

"We find but three species of the water snakes in the eastern part of our country.

The common water snake or water adder is a stout, strong snake, which grows to four feet in length. This species—*Tropidonotus sipedon*—is the most savage of our common snakes. Although a really timid snake, escaping if opportunity permits, yet when cornered it bites viciously. It is aquatic, and a rapid and graceful swimmer. Let me show you a fine specimen I lately secured, my dear Fritz. It is three and one-half feet in length, seven inches round, and it weighs two and three-quarter pounds. No doubt this fellow is many years of age. Seldom are they found as large as this one.

The general color of the water adder is brownish or dusky above, with large, dark blotches, alternating with smaller, triangular,

reddish blotches on the sides and back. The underside is yellowish brown, with two or more rows of irregular, semi-circular brownish spots. In some old specimens the color above is dusky brown, and the markings are hardly discernible, while the underside is marked with dull yellowish and brown blotches. The eyes of this species are small, with a reddish caste, possessing a vicious expression, true to the irritable temper of this snake. The scales on the back are coarse, forming a keel along the dorsal line.

Although fitted to seize its natural prey in the water, and capable of remaining beneath the surface for considerable time, yet the water adder frequents the shore in search of frogs and toads, and to enjoy a noon-day nap beneath stones and refuse matter. It is very quick in its movements, and readily attacks large fish. The old fishermen along the Delaware have entertained me with interesting accounts of exciting life struggles between large eels and full grown water adders. And they have also told me of instances when water adders have compassed their own destruction in attempting to gorge large cat-fish, the sharp spines of which have pierced through the distended skin of the snake's neck, and thus caused the death of the gormand snake.

Early in August the female water adder brings forth her young, in some suitable spot on land. Her family usually numbers sixteen,

yet I have seen instances when my pets gave birth to as high as twenty-two little ones, and I have also noted cases of birth among this species as late as the middle of October. The baby water adder is quite a pretty snake, with bright and distinct markings. The alternating yellowish white triangular spots and brownish rhomboidal blotches along the sides, with whitish lines across the back and delicate pencilings of yellowish and brown on the under side, all combine to make a pretty effect. The baby snake is about seven inches in length, quite stout, very active and full of fight. It feeds on tadpoles, baby toads and small fish.

The water adder when irritated, flattens its body to the ground and fiercely attacks its tormentor. The teeth of this species are large and strong and my experience is that their bite is more severe than that inflicted by any other species of our common snake. It cannot be considered a pleasing pet because of its timid, suspicious and irritable disposition. It makes sad havoc among the fish in a stocked pond.

The stiff snake—*Tropidonotus rigidus*—is greenish brown above, with two brownish dorsal stripes. Beneath it is dull yellow with two rows of brown spots. This species seldom grows more than twenty inches in length.

The leather snake—*Tropidonotus leberis*—is quite an attractive reptile ; it attains a length of about two feet. It is chestnut brown above, with three narrow, black dorsal stripes and a

yellowish lateral band. Beneath it is pale yellow with four rows of dark spots.

Both of these species are comparatively rare in the Delaware valley. They are not as predaceous among the fish of our streams as the water adder, as their food consists mainly of toads, frogs and tadpoles.

THE SPREADING ADDER.

“Now, my dear Fritz, grant me your special attention to my notes on the most interesting species of our common snakes. This is the hog-nose snake, spreading adder, blowing viper or flat adder, as it is variously called in different parts of the country. The spreading adder—*Heterodon platyrhinus*—attains a length of about thirty inches when full grown. It has a stout, ungraceful body, with abruptly tapering tail. The skin, especially about the neck, is quite loose, thus giving to the snake a clumsy, soft appearance, so different from the compact, graceful form of all other species of our common snakes. This species is quite variable in coloration, but generally it is yellowish-brown above, marked with about thirty dark brown spots along the back, growing into bands along the tail. Beneath it is yellowish, clouded with slate color. The name hog-nose snake gets its derivation from the peculiar shape of its muzzle; this is pointed triangularly, slightly turned

up, and thus somewhat resembles a hog's snout.

Although the spreading adder is sluggish in its habits, yet when irritated it assumes a most threatening attitude. It coils quickly, fills out its loose skin with air till nearly twice its natural size, flattens its body close to the ground, expands its neck to a wonderful degree, emits a long drawn hiss, and viciously strikes at its tormentor with lightning like strokes of wrath-inspired fury. But all this terrifying manifestation of deadly ire is but harmless bluster, as it never opens its mouth during its savage attacks, and it is as harmless as a little kitten.

A peculiar characteristic of this snake, not existing in any other species of our common snakes, is its practice of 'playing possum,' when unable to frighten away its tormentor with a manifestation of serpentine rage. When resorting to this deception it rolls over on its back, with mouth wide open and tongue protruding, and lying perfectly quiet it thus simulates death perfectly. In this state it may be roughly handled, and even knocked about, yet it remains limp and apparently lifeless. It will continue this deception till its captor, even though sometimes a naturalist, thoroughly deceived, casts it away in disgust, when, presto, it suddenly revives and quickly glides out of harm's way into the nearest shelter. I have secured specimens of this snake, when it feigned death so perfectly and continued the deception

for so long a time, that before I became thoroughly acquainted with its life habits I was tempted to throw it aside, under the impression that perhaps its vehement exhibition of rage when first I caught it had really re-acted on it in some fatal manner to cause its death. But, my Fritz, the old schoolmaster, experience, soon taught me that I was being duped by the clever trick of a despised snake, so now, when a specimen tries to impose on my sympathies by practicing the 'possum trick,' I cruelly place it in my snake box and coolly watch it recover its senses.

The hog-nose snake or spreading adder, is found in open fields, generally near streams, where its natural food, toads, frogs and salamanders, are to be found. It burrows readily in search of grubs and insects. It is very deliberate in its movements, and does not possess the ability to glide as swiftly out of danger as the other species of our common snakes.

During the early part of July the female spreading adder lays about a dozen yellowish white, pointed eggs, about one inch long and one-half inch in diameter. These are deposited in some suitable spot to be hatched by the moist heat of their resting place. The little snakes are much lighter in color than the parent and interesting little creatures.

The species *niger* is black or dark brown above, slate color below, a truly formidable appearing reptile, yet perfectly harmless."

“Is not the spreading adder frequently mistaken for the deadly copper head?”

“Yes, my Fritz, because of its vicious behavior when irritated, and its fancied resemblance to the venomous copper head, the farmers kill it under the erroneous impression that they are destroying a death dealing serpent. This is a serious mistake as the spreading adder is not only absolutely harmless, but it is a valuable adjunct to the farm and garden. You know, my Fritz, that no one has a greater need of knowledge of Nature than the farmer, as he frequently kills his best friends among the lower animals through ignorance of their true life habits.

The spreading adder is a most interesting pet, because, though most vicious of all our common snakes in behavior, yet it is positively harmless, and can be handled with impunity.”

THE BLACK SNAKE.

“The truly representative species of our common snakes is the black snake, my Fritz. The black snake—*Bascanium constrictor*—is exceedingly graceful in form, swift as thought in its movements, fearlessly irritable in temper, and a most interesting subject for study.

The body of this snake is comparatively slight, tapering gracefully towards the fine point of its prehensile tail. The general color

is a glossy blue-black on the back and sides, and slate color below. A glistening white patch is always present on the chin and throat of this species. Its scales, as you may observe from this fine specimen, are large, smooth and hexagonal in shape. The tail is about one-fourth the full length of its supple body. The eyes are large, bold and jet black. This species grows to a length of six feet; occasionally specimens are found over seven feet in length, but as a rule a black snake six feet long is an uncommon find.

The natural haunts of the black snake are in the vicinity of marshes and streams, where a dense growth of vegetation assures a safe shelter, into which it glides like an arrow when disturbed. Its food consists of frogs, small birds, such small animals as field mice and moles, etc. It climbs trees readily to rob bird's nests of eggs and young birds. It attacks other species of snakes fearlessly, even the deadly rattlesnake, and frequently gorges its victim after securing one. I have, on several occasions, witnessed my black snake pets seize garter snakes and water adders nearly two feet in length and deliberately proceed to swallow the hapless victim. After seizing a snake, the black snake quickly throws a coil of its lithe body on the struggling captive, and thus holding it firmly to the ground, begins the act of deglutition, or gorging its meal head-first.

This species has a peculiar habit of beating

the ground with lightning-like strokes of its finely pointed tail when irritated, as if in imitation of the warning given by the deadly rattlesnake just previous to striking."

"Is not this species commonly called the 'racer,' from its practice of chasing persons who unwarily disturb it?"

"Yes, my Fritz, it is generally believed that the black snake or 'racer' as it is commonly called, really chases persons, who, startled by the sudden appearance of one of these ill-reputed ophidians flee in terror from its presence. I have never learned of an authentic case when the black snake literally chased a human being. I have captured many specimens of this species, in one instance securing five fine specimens in about five minutes, one of which was over six feet in length. Repeatedly I have met well grown black snakes in my rambles and though I have noticed that they were slow to move at my approach, yet when I resolutely advanced towards them they invariably attempted to escape, and I found it necessary to be exceedingly quick in my endeavors to seize them. I have seen large specimens of garter snakes, water snakes and pine snakes when severely irritated swiftly glide for a short distance directly at their tormentors. So I know no reason why a black snake, with its characteristic pugnacious disposition, should not do the same thing when cornered and teased, but I am hardly able to credit the extravagant stories that find circula-

tion relative to black snakes actually chasing and attacking human beings when fleeing in terror from them.

About the first week in July the female black snake lays from eighteen to twenty-two yellowish white eggs, covered with a tough leathery skin. These eggs vary in size and form. One of my pets laid twenty-two eggs; some of these were laid singly and were elliptical in form, pointed, and one and one-half inch long and three-quarter inch in diameter. Others were cylindrical in form, with flat ends, and about $\frac{3}{4} \times \frac{3}{4}$ in size; several of these were connected by a thin thread-like skin about a half inch in length between each egg. In its natural haunts the black snake lays its eggs in a shallow hole in the soft earth, generally along the edge of wood land, or beneath old stumps of trees in open plowed fields. About three or four weeks elapses after the eggs are deposited when the moist heat of their resting place hatches the young snakes.

The baby black snake is a pretty creature, very active, of a dark olive color with a row of irregular brown spots, bordered with darker margins along the back. The sides of the body and the under side are also generally spotted."

"It seems to be a prevalent belief that the bite of the black snake is a serious affair. Is there any foundation for such opinion?"

"None whatever, my Fritz. The bite of a black snake is comparatively insignificant, a

mere scratch compared to a wound inflicted by the bite of a water adder. I have repeatedly allowed my black snake pets to bite me after severely teasing them, and I have thus learned by experience that the slight wounds they can inflict, even during a furious attack, amounts to less than a severe pin scratch, and they are truly less painful than a pin scratch generally proves to be. Of course the wound inflicted by the needle-like teeth of an enraged black snake will naturally enough draw blood, but it is really unworthy of notice, as the black snake is a positively harmless snake.

Although this species possesses a power to squeeze to a very perceptible degree, yet it is not sufficiently strong to do any injury to a human being or other large enemy in the exercise of its powers of constriction.

The black snake when not abused proves to be a very tractable pet, and when handled gently makes no attempt to bite; but when abused it is quick to resent injury. It delights to bask in the sun's warm rays. Frequently during my early Spring rambles I have met several individuals, generally in pairs, gracefully coiled on a grassy spot enjoying the solar warmth.

The black snakes, after mating, are generally found in pairs, and there seems to exist quite an attachment between mates of this interesting species."

THE PINE SNAKE.

“The largest of our common snakes, my Fritz, is the pine snake or bull snake, as it is called in some localities. This snake attains a length of over six feet; it has a stout, strong body.

The general color of the pine snake—*Pityophis molanoleucus*—is yellowish white. The scales of the back anteriorly are well spattered with brown; posteriorly these brown markings are developed into spots and bands. Along the glistening white sides are irregular rhomboidal blotches and spots of brown and slate color. The underside is yellowish white with slate color blotches.

The head of the pine snake is ungraceful, with thick neck. The tail is about one-seventh the total length of the body and it terminates in a peculiar horny point. The scales of the back are pointed and keeled, while along the sides they are smooth.

The pine snake derives its name from its natural habitat, the ‘pine barrens.’ The ‘pine hawkers’ or charcoal burners give it the name of bull snake and declare that it ‘bellows like a bull’ at certain seasons; this assertion is not satisfactorily authenticated, yet it hisses viciously when irritated.

This snake is slow in its movements and of equable temper, thus it can be readily handled if not abused. When tormented it hisses furi-

ously and strikes viciously at its tormentor. It makes an interesting pet and can be fed on small animals, small birds, frogs and hen's eggs.

"It is the pine snake that is so frequently seen in museums, where 'snake charmers' awe the horrified audience by their reckless handling of large deadly (?) serpents. I have seen them brazenly caressed by representative 'snake charmers' in sadly abbreviated skirts at our agricultural fairs, when I could not help deciding that the snake was far less dangerous than its blase 'charmer.'"

"You are right, my Fritz, quite a trade has been developed for good live specimens of this species; and the dealers in this peculiar merchandise ship so many pine snakes to the big cities, that this species is likely to be soon exterminated.

The pine snake in its natural haunts is generally found alone. It feeds on young rabbits, small birds and will venture near houses in search of hen's eggs, while it never refuses an opportunity to regale itself on the contents of a 'stolen' guinea's nest. The female lays from six to ten blunt pointed or rather elliptical eggs, about the size of a pigeon's egg, white, with tough leathery skin; these are deposited in the sand. The baby snakes are about seven inches in length and nearly white, markings quite obscure."

THE CHAIN SNAKE.

“The king snake, chain snake or thunder snake—*Ophibolus-getulus*—is an attractive reptile, my Fritz. The color of this snake is a deep lustrous black above, with about thirty yellowish white, irregular rings along the sides and back, forming a delicate chain. Beneath it is slate color, with large yellowish white blotches. It grows to a length of five feet. In its general life habits it resembles the black snake.”

THE MILK SNAKE.

“The milk snake, house snake or spotted adder is peculiar in the fact that its various names in no wise apply especially to it. The milk snake—*Ophibolus triangulus*—as it is generally called, grows to about three feet in length and has a graceful form. General color of this snake is pinkish white, with a row of large red brown spots, bordered with black running along the back. On the sides are alternating small spots of pinkish white and dark brown. The under parts are artistically checkered with whitish and slate colored square blotches. A prominent pinkish white arrow shaped mark always present on top of the head. The young milk snake is a very pretty little reptile. General color whitish, with numerous clear, bright red spots.

The milk snake is useful about the farm as a field mouse destroyer, but the slanders against it as a 'milk thief' are not founded on facts. I have secured it miles from any dairy, feeding on frogs."

THE FOX SNAKE.

"The fox snake—*Coluber vulpinus*—is a fine representative of our common snakes. This snake grows to about five feet in length and is graceful in form. It is of a yellowish brown color, with a series of square chocolate brown blotches along the back and a row of smaller spots of the same color along the sides. Beneath it is yellowish white with square, black spots. The favorite resorts of the fox snake are the hilly wooded districts of the northeastern part of our country. A friend sent to me a fine specimen from the hilly district of Pennsylvania which gave birth to fifteen little ones; these were miniatures of their parent.

The fox snake is of a docile disposition and thus makes a pleasant pet."

THE SUMMER GREEN SNAKE.

"The summer green snake—*Cyclophis æstivus*—is an exquisite little creature. This species is also indigenous to the mountain districts. It has a small, conical head, very delicate neck and slight graceful body. It grows

to about thirty inches in length. The summer green snake is bright brilliant green above, and creamy white or delicate pale green beneath. It frequents low bushes in search of its insect food.

Now, in addition to the species of our common snakes already discussed, and which attain a length of over two feet when full grown, we have several species of small harmless snakes that do not grow over twenty inches in length. These little snakes are perfectly harmless, never attempting to bite. They subsist on tadpoles, grubs, earthworms and small insects, and most of them burrow in search of their food."

THE RING-NECKED SNAKE.

"In my opinion, the prettiest species of all our snakes is the beautiful little ring-necked snake—*Diadophis punctatus*.

This pretty little creature has a slight graceful form, with head depressed and large eyes, and it attains a length of fifteen inches. The general color above, a rich blue black ; beneath, bright pale orange, with each scale dotted on its outer edges with small black dots, one on each edge. Generally a row of small black dots runs along the middle line of the under side, one dot to each scute. A yellowish white ring around the delicate neck is an always present distinguishing mark.

The ring-neck snake frequents secluded local-

ities, where it burrows beneath decayed logs and bark in search of its food, slugs, salamanders and insect larvae. Although it may be found throughout nearly the whole country, yet it is not often met, because of its love of seclusion.

DE KAY'S BROWN SNAKE.

The DeKay's brown snake—*Storeria de Kayi*—has a stout body that tapers toward its delicate neck and small head. It is grayish brown above, with a prominent clay-colored dorsal band, dotted with minute black dots along its edges. Beneath, grayish. This snake seldom grows over a foot in length. It is one of our commonest snakes and is usually found near water where it secures tadpoles, grubs and earthworms for sustenance.

RED-BELLIED SNAKE.

The red-bellied snake—*Storeria occipitomaculata*—is less common than DeKay's brown snake and is slighter in form. Color above chestnut brown, with a narrow grayish dorsal stripe. A distinguishing mark peculiar to this species is three pale blotches on the back part of the head; these are seldom absent. Color, beneath salmon red. Length seldom over a foot. General habits same as the DeKay's brown snake.

THE GRASS SNAKE.

A really pretty species of our common snakes is the grass snake or green snake—*Liopeltis vernalis*. This little creature grows to about twenty inches in length. It has a delicate graceful form, with an elongate head, small neck and large eyes. It is a bright grass green above, while beneath it is a yellowish green. It frequents grassy meadows and low bushes in search of its insect food.

“There, my Fritz, now you know something about the life habits of our common snakes.”

“I congratulate you, my dear Count, on the very valuable scientific facts that you have added by your own personal observations to science.”



CHAPTER IV.

A HAPPY "FIND."

"My spirit yearns to bring
The lost one back--yearns with desire intense."
—BRYANT.

In the Spring of '94, after a most enjoyable visit at the hermitage, I bade farewell to the old hermit and Petro, for a short absence among the wilds of Pennsylvania's picturesque hills. I had secured cozy quarters with a very congenial old couple right among the natural charms of a glorious country, and in a short space of time after leaving the old hermit I was comfortably domiciled in my mountain home. It was my purpose in selecting such a locality to carefully explore the mountain wilderness in search of specimens for my rapidly growing collection, such as can be found only in rugged, hilly country.

The first few days of my visit were consumed in a careful "hunt" in the immediate vicinity of my home. After securing numerous valuable "finds" in such contracted area, my trips were extended to considerable distances. Frequently my kind hostess prepared a generous lunch for me, when I prolonged my rambles for miles, returning often late in the evening. During one of these extended trips the following highly interesting facts were experienced.

HIGH BLUFF.

It was a glorious morning when I left my mountain domicile for a long day's hunt right into the heart of Pennsylvania's most rugged territory. I rambled for miles over a magnificent country, meeting with encouraging success, when suddenly my attention was attracted to a stately appearing building some miles distant, situated on a high bluff, from which a fine view of the surrounding charming landscape might be enjoyed. At once I decided to reach that high point of observation, and to enjoy the wonderful view it afforded of the charming country, stretching away from its base for miles in all directions.

Believing it would be wise to refresh my somewhat wearied body before starting for my destination, I soon found a clear, sparkling and enticing mountain brook, where I ate my lunch, examined my "finds," corrected my notes, then enjoyed a quiet smoke. Feeling refreshed and invigorated I started with brisk steps toward the rugged eminence. A short walk, a laborious climb, then fatigued and almost breathless I gladly dropped on a mossy bank near the edge of the elevated bluff. The view from my elevated position was full recompense for the labor expended in securing it. After fully enjoying the magnificent panorama of natural scenery spreading away before me for miles, feeling refreshed in body and mind, I started on a tour

of inspection of the fine grounds of the institution that occupied the high eminence.

While leisurely walking along one of the well-kept gravelled paths that led along the edge of the bluff, I suddenly stopped, riveted to the spot by an indescribable sensation, that thrilled my being, and left me almost incapable of action. A short distance in advance of me, and gracefully reclining on a rustic bench, was the most beautiful young lady I had ever seen. She was neatly attired in the garb of a trained nurse, and seemed deeply absorbed in pensive thought. But it was not that angelic face that unnerved me; so beautiful, so chaste, yet with a perceptible pleading pensiveness, that at once touched the sympathy of a keen observant student of Nature. What then so affected my usually calm temperament? Ah, it was not the chaste beauty of that lovely face; it was not the sympathy inspiring pensiveness of its sweet expression. No, no, but what thrilled my being, and overcame my usual self-possession, was the overwhelming consciousness, yea, positive conviction, that somewhere, at some previous time, I had seen that face before, associated with most tender remembrances, and also with terribly sad experiences. Still benumbed by my strange experience, and yet fully realizing my embarrassing position should the young lady discover my presence, I slowly retired, desirous of quietly, soberly meditating on the cause of my very unusual behavior.

Rapidly descending the precipitous mountain path I followed the highway with nervous, quick steps anxious to enjoy the privacy of my little room in the quiet farm house, where I could seriously review the extraordinary experiences of the day.

Reaching home under the spur of an all prevailing suspicion, that some wonderful and important discovery required most careful deliberation and judicious conduct, I bade the good folks an early good-night on the plea of excessive fatigue, and sought the calm solitude of my own room. There I gave myself up to an absorbing consideration of the causes, the plausibility, the consequences of my strong impressions relative to the true personality of the beautiful young lady, the discovery of whom had so peculiarly affected me. After devoting an hour or more in serious thought on the day's strange events, I finally decided on a judicious plan of action for the morrow, and then I retired.

“ IT IS SHE.”

The next morning dawned gloriously. Naturally anxious to at once investigate the peculiar events of the preceding day, I was soon wending my way towards the bluff. I was confident that the young lady would not occupy her, apparently usual place of reverie till after-noon, but I was so anxiously impatient that I was

compelled to, at least, be in the line of the fulfillment of my carefully prepared plan of action. The hours dragged along so slowly ; but at last the sun reached the meridian, when I sought out the sparkling mountain brook, where I lunched and decided to visit the bluff on the preceding day. Here again I refreshed my body and composed my mind before attempting the ascent of the steep path to my destination.

Again, almost exhausted, I reclined on the mossy brink of the precipitous bluff, and again felt fully paid for my arduous climb in the marvelous and inspiring view of natural scenery enjoyed from that high point of observation. Rested in body, and composed and resolute in mind, with a carefully prepared plan of action for the positive settlement of my honest convictions, should I be so favored as to again meet the charming stranger, I leisurely walked along the gravelled path towards the trysting place.

Fortune favored my heart's longings. At the same point where I made the discovery that so strangely affected me but yesterday, I again saw the same beautiful young lady. On this occasion she was deeply absorbed in the perusal of a magazine and she did not discover my presence. Slowly advancing toward her, as if I was quietly enjoying the magnificent grounds so well laid out about me, my footsteps attracted her attention, and as I drew

nearer to her, she dropped her book into her lap, and, perfectly self-possessed, awaited my approach.

“Good afternoon, I hope I am not an intruder on these beautiful grounds.”

“Oh, no sir, we are always pleased to welcome visitors to admire our quiet and beautiful retreat.”

“This is certainly a magnificent country. May I ask the character of yonder institution.”

“That is Cliffside Sanitarium; and these beautiful grounds belong to it.”

“Ah, a most appropriate locality for such an institution. I am a stranger in this wonderful country, and it was while eating my lunch beside a brook at the base of this high bluff, that I was tempted to enjoy the fine view of the surrounding landscape, promised from this high point of observation. I have been rambling for several days about this charming wilderness in search of zoological specimens, and I have never seen grander natural scenery than can be viewed from this elevated position.”

“You are a Naturalist, sir?”

“Yes, I am honored in being an humble disciple of Linnæus,”

“My dear papa was an enthusiastic Naturalist; many pleasant rambles we enjoyed together in search of specimens for his cabinet.”

“Is he deceased?”

“Ah, sir, that question I cannot answer. If I knew assuredly that papa was no more I

could be far happier than I am with my ever present hopes and doubts relative to his welfare. Many weary years have flown by since I last saw my dear papa, and I know not what has become of him."

"Pardon my inconsiderate question, if it has aroused sad memories. It was but natural that I should be interested in the experiences of a co-worker in Nature's extensive realms. Although a stranger to you, yet I may be of service in securing some satisfactory information regarding your father's fate. I enjoy an extensive acquaintance among scientific men, and thus I may be able to secure some knowledge relative to your father that may be of value to you."

"You are very kind. For years I have locked the secret of my great sorrow in my own bosom, but I feel it to be my duty to use every available means at my command to learn the truth respecting my dear papa's fate. You may be of most valuable service to me, as you go among the men and women who are the most likely to know something of my papa. I gladly accept your generous proffer of assistance and I shall prove my appreciation of your sympathy by confiding my heart's secret to you. It must, naturally, surprise you that I would thus make a confidant of a total stranger, but the fact that you are a naturalist, removes all doubts of your integrity, and again, the still more important fact that you associate with the

very people most likely to know something of my papa, compels me to accept your kind and sympathetic aid, as this is an opportunity I dare not let slip. Hear my story."

"I am a Sicilian by birth. At an early age, I was left motherless, and papa was my sole companion. He was a devoted naturalist, so I spent much of my time in his company, rambing about our beautiful estate searching for the creatures of Nature to study. When about twelve years of age I was stolen from my papa and my happy home by a band of brigands which occasionally passed through our territory. I was taken to the mountain home of the brigands and presented to the stern old chief. He at once became attached to me and issued a decree that I should be the future queen of the tribe. For two long weary years I remained with the band, till at last the chief issued still another decree, declaring that in two short weeks I would be wedded to his only son, and thus became the literal queen of the tribe. Great preparations for an extensive gala time followed this edict. But a week previous to the merry occasion I was abducted by a jealous suitor, aided by several faithful associates and we embarked from Messina for some continental point from whence we took steamer for New York City.

When a mere child I had read of the great metropolis of the western continent, and frequently papa had told to me interesting facts

concerning this great city. During our voyage my guardian died of a malignant fever, but before his death he cautioned me to be sure and seek out some Christian minister as soon as I landed and to tell him my whole story and follow his advice. After a tedious voyage I at last arrived in the great city, and on landing I inquired of an official at the dock the address of the minister of the first church that happened to my mind. He curtly referred me to a pleasant appearing old gentleman, who stated that he was a city missionary and would be pleased to take me under his care till I found my friends. I went home with him and there I told my whole unhappy story. His wife, a sweet, motherly old lady, decided that my case required graver consideration and care than they felt capable of giving it, so they made me very comfortable for that night, and told me they would refer my case to wise and good friends in the morning. On the following morning I accompanied the kind old gentleman to a handsome residence on a wide avenue, where I was introduced to another kind old gentleman, who listened attentively to my story and then decided to make me a member of his family till he could do something towards finding my friends.

Well, not to weary you with details, I spent two happy years with this grand old man, during which time he exhausted every means for the recovery of my lost relationships, but with-

out success. Then I decided that I would devote my life to soothing the wretchedness of other poor unfortunates so I became a trained nurse. I was recommended to the Cliffside Sanitarium and I readily accepted a position here when I saw its charming location. Six long years have passed since I was forcibly separated from my dear papa and I am yet ignorant of what his fate may be."

"I thank you sincerely for your confidence. Yours is indeed a sad story. I pledge you my honor to do all in my power to learn assuredly what has become of your sadly bereaved parent. Now have you any little trinket that you will trust in my care and that I may use as a positive proof of your identity?"

"Oh, yes. I have here a small locket that I always carry with me. It contains the picture of my mother. Papa has one like it. I will gladly entrust it to your care as it is a positive proof of my identity. Papa had two made after mamma died, and he told me never to part with this one, but as proof of my perfect confidence in you I place it in your keeping. Now I must return to the house. You will surely see me again within a short time. I feel indescribably happy and hopeful."

"Ah, my child, do not foster too bright hopes, only to be sadly blighted. I will do all in my power; but it is no small matter to unravel the mysteries of six long years."

"I know it, I know it; yet I cannot but feel

an assurance that you will succeed. Now, good-bye, and heaven bless your efforts."

She was gone. The awful nervous restraint under which I rested during the recital of her sad experiences now re-acted on my mental and physical powers almost to my undoing. I fell almost insensible into the seat that she had just vacated. My mind was in a wild tumult. The full proof of the happy reality of my suspicions almost over-powered me. I sat for a short time deeply absorbed in thought. "There is no doubt about it; I am right; it is she. How shall I act? What must I do? Ah, why craze my mind with such thoughts; I will go home, sleep over the matter and in the morning, happy and refreshed, I can carefully consider the important discovery and plan accordingly." These were my reflections. With one final, yea, longing look towards the house I started homeward with reckless speed. A short hour afterward I was in the quiet calm of my own room. Here I could not resist the temptation of putting aside the veil that hides the future, and fully enjoying the rich promises of mutual joy and happiness assured to my dear old hermit, his beautiful child and myself the humble instrument in the hands of an inscrutable Providence. With a happy heart I retired early anxious for the morrow when I would be the swift messenger of great joy to the old hermit.

The next morning I arose early, refreshed

and in good spirits. While awaiting the usual summons to breakfast I busied myself packing my specimens, and as well formulated a plan of action relative to my happy discovery. At the morning meal I informed my genial host and hostess that I wished to take my departure before noon. They were somewhat surprised by the abruptness of my unexpected information, but satisfied that I was the judge of my best interests, they expressed regret at so soon parting company with me and extended a hearty invitation to visit them if ever again in the neighborhood. I promised to pay them another visit in a short time, then while my host departed to the stable for the horse and carriage to convey me to the railway station, I completed my preparations for departure. Soon I was speeding homeward. Arriving home in the early evening I spent a few hours with my relatives and then I retired, anxious to hasten the morrow when I could turn my steps towards the old hermitage.

Early after breakfast the next morning I was making great haste toward my destination, the quiet, soothing influences of the island hermitage. A brisk walk soon brought me to the riverside of the mainland opposite the island. Soon my peculiar signal was noticed and I was delighted to see Petro push a boat from the shore and accompanied by Pluto row over to me. When we landed on the island I followed Petro's instructions and soon discovered the old

hermit enjoying a quiet smoke beneath the favorite old oak near the house.

As I advanced toward my beloved friend, I noticed that he seemed absorbed in deep reverie. Never before had I observed such an expression of mental anguish on his handsome face. The sight instantly touched my sympathy, for I at once surmised the nature of his grievously sad reflections. As I rapidly and cheerily advanced to him he recognized me and at once arose from his place to welcome me.

“Ah, my dear Fritz, you can never conceive my real delight on seeing you at this time. For days I have been under a crushing weight of almost maddening anguish, born of a slowly but surely dying hope of ever again seeing my poor, sadly bereaved Anita. Six long weary years have slipped into eternity; during this dark period of my life I have ceaselessly prayed and hoped that I might gain some clew to her whereabouts, either alive or dead. For several days I have vainly attempted to cast aside a crushing, heart-rending premonition that never again shall I either see or hear of my precious child, and my despairing soul has been slipping, slipping into the dark abyss of utter hopelessness. But, there, my Fritz, your timely return to me revives my depressed spirits and I will try to be even more than ever patient and hopeful. Yet, candidly, my dear Fritz, this gnawing, persistent doubt is slowly, surely eating my life away.”

“I fully sympathize with you, my dear Count, yet I sincerely believe that your years of patient hope and believing prayers will be rewarded far beyond your happiest anticipations.”

“You do, my Fritz; you truly believe that we shall be united again this side of eternity? Oh, my dear comforter, I thank you more than tongue can express for that sweet assurance.”

“But come, my dear Count, let us retire to the ‘den,’ I wish to enjoy a quiet talk with you along this line.”

A strange expression swept over the old hermit’s fine face, at my request. A mixture of terror born of awful forebodings of evil tidings, and of overwhelming joy inspired by happy expectations of good news.

GLAD TIDINGS.

When we were comfortably seated in our favorite places in the cosy “den,” facing each other I declared:

“Now, my dear Count, I have not the least shadow of a doubt that I enjoy your fullest esteem and confidence, yet you have but once during our long intimacy spoken of your great loss in my presence. You have never solicited my aid in finding some traces of your lost child, nor have you even given me any clues by which I could possibly trace her. I say this not chidingly but seriously. I know you

have the fullest assurance of my sympathy and you know I would do anything in my power to aid you."

"Oh, my Fritz, I see now my mistake. It was from fear of burdening you with my anguish that my lips have been closed. I should have been more confident of your love and sympathy; but I thought only of your happiness and not of my woe."

"I appreciate the kind sentiments that have caused you to hide your poignant grief in your own heart, my dear Count. But now I must make this demand on your love for me; tell me how I can serve you in this grievous matter. Let me know how I may be useful to you as I go among men, as a searcher for your lost idol. Give me some clew by which I shall know that I am on the right track, fully unburden your heart to me, hold nothing back and together we will pursue this serious matter to its final end, that we may assuredly know what has become of your tender Anita."

"Forgive me, my Fritz, forgive me. I will confide all to you and with heaven's blessing on our efforts, from this moment we will devote every minute of available time in fully unravelling the distracting mystery enveloping my lost child. Till death do us part we will persistently, hopefully and resolutely prosecute our search till we gain a full and satisfactory solution of this distracting enigma and we know positively that my child is dead and

where her body lies, or happier thought, that she is yet alive and where, and how circumstanced. Is it a compact my dear Fritz? Will you even at this late day accept my full confidence and give me your devoted aid in this holy mission? Speak, my Fritz."

"Ah, my dear Count, you need ask of me no such pledge. I give it voluntarily, happy indeed to be able to perform in the exercise of my best talents, whatever lies in my power toward the permanent, final settlement and explanation of this depressing mystery. Here is my hand and with it my heart. Death alone shall loose this compact."

"Bless you my Fritz. I gladly accept your kind offer and time only can prove my estimation of your sympathy and true friendship. Now to the work. I have already told you all the facts relative to the disappearance of my child so far as I possess them. From the time my sweet Anita left my stricken home I have learned nothing of her except the story of her abduction and her departure for the new world. I carefully traced these facts and substantiated them, but I have not been able to learn one single little truth relative to her since her departure from Messina. Whether she ever reached New York City or landed at some other port, I cannot tell. Let me show to you a little trinket that I value nearly as my life; it is the surest clew to her identity that I possess. I keep it always here over my heart, and I

have never shown this precious remembrance to a living soul since my Anita's disappearance."

Opening his loose shirt the old hermit took from his person a small gold locket that was suspended from his neck by a fine gold chain. He gently opened the locket, looked long and lovingly at the small picture it contained, and then with a heavy sigh he handed the precious trinket to me. It was the counterpart of the one that I had safely concealed in my pocket. As soon as I looked on the beautiful picture it contained I felt the blood leave my face, and for a moment I was utterly unnerved.

"In heaven's name, my dear Fritz, what ails you, are you sick?" the old hermit excitedly exclaimed; and then, as if possessed of a maddening suspicion, he sprang to his feet and seizing my arm in frenzied anguish, cried:

"Tell me, my Fritz, in mercy's name tell me, have you ever before seen that face?"

Calmly holding the locket in my free hand, and gazing firmly yet cheerfully into the agonized face of my beloved companion, I commandingly declared.

"Be calm, my dear Count, return to your seat and give your careful attention to what I have to say."

With a groan, the old hermit released my arm, fell heavily into his chair, and in a husky whisper he said:

"I am listening, my dear Fritz."

Slowly, carefully, and in studied detail I told

the old hermit the story of my wonderful experiences in the mountain wilderness. Several times during its rehearsal I was compelled to raise my hand warningly to quiet the old hermit's almost uncontrollable feelings. When I finished my story, he sat like a statue in his chair, as if benumbed with the weight of his joy; then, with a sob, he requested me to show him the little trinket with which I had been entrusted. When I placed the locket in his trembling hand he opened it with difficulty because of his emotion, and when he viewed the beautiful face that smiled from its golden resting place, his pent up feelings burst forth in uncontrollable joy.

"God be praised; it is she, it is she; my lost darling," exclaimed the over-joyed father. Then giving full vent to his emotions, his powerful frame shook with great sobs of joy.

Fully sharing the old hermit's great happiness, I patiently waited till he was calm again before continuing the discussion of the happy theme.

"Heaven's blessing rest on you, my Fritz. You have been a messenger of peace and happiness to me. Now, when can I go to her, my dear Fritz?"

"Be patient, my dear Count. We can wait the full development of my carefully laid plans. You will remain here, and I will bring her to your arms in a few short hours."

"Be it as you decide; I am so happy that a

few hour's waiting will but increase my joy. You will start at once, my Fritz?"

"Yes, I will at once leave you, to perfect my plans, accompanied by both of these precious clews. Then I will return in a short time with the idol of your heart, to fill to overflowing this, your cup of great joy. Now, good bye; let me to the completion of this happy task."

"Good bye, my beloved Fritz, and may heaven tend you in your mission."

A short hour after this joyous experience I was again speeding toward the charming hills of Pennsylvania's marvelous wilderness. About twilight I reached the cosy home of my late host. Naturally enough, the little family was delighted to welcome me back again, and of course surprised by my early return. I told my kind friends that I was back on important business at the Sanitarium.

The next morning I was up and about early, anxious to perform my duty of love and friendship. Provided with a light lunch, and warning my host that I would probably return late in the day, I wandered on through the inspiring influences of the wonderful wilderness toward my destination. Believing there must be a private road leading directly to the Sanitarium, I sauntered along at the base of the elevation on which the institution stood, till finally I found a good, level road, with gradual ascent, and this I decided was the regular carriage way to and from the Sanitarium. This

path was far easier climbing than the one I followed during my previous visits, so, when I reached the top of the high bluff I was but slightly fatigued.

As the sun was but at the meridian when I accomplished the ascent of the bluff, I wandered along over the beautiful grounds till I found a spring of sparkling water, half concealed amid a cluster of young maples. Here I decided to refresh myself with my lunch and Nature's purest, most wholesome beverage, and after enjoying a quiet rest proceed on my errand. An hour passed in delightful retrospect of the marvelous experiences of the few weeks now passed, then I decided it was time to seek the object of my visit.

I followed the now familiar path along the edge of the bluff, till again I stood before the almost revered rustic seat. It was vacant, I was evidently too early. Deciding that it would be best to await the young lady in her favored place of reverie, I made myself comfortable, and taking from my pocket my notebook I was soon absorbed in the pleasurable exercise of jotting down interesting items of scientific character noted in the natural wildness of my surroundings. How long I had been thus engaged I cannot tell, when I was suddenly startled by a sweet voice from behind me.

"Back so soon ; Oh, you must be the bearer of tidings."

Quickly rising from my seat I turned about and stood face to face with the object of my visit. Her beautiful face was radiant with happy expectation.

“Oh, please be seated, and tell me quickly what sent you back to me so soon; have you learned any tidings of my dear papa?”

“Yes, I am the bearer of some tidings; not sad in character either. But pray be calm and patient while I relate to you my interesting story.”

With almost bated breath, and eyes flashing with irrepressibly happy expectation my beautiful companion, trained by adversity to patience, attentively listened to every word of my wonderful story. Frequently, during its rehearsal tears welled up into her expressive eyes, till, when I had completed my tale, she covered her face with her hands and gave full and natural vent to her almost overwhelming feelings. Fully recovering her self possession and looking into my eyes with inexpressible gratitude she quietly asked:

“Did you secure a clew to his identity that will positively remove all doubts of the full reality of your happy discovery?”

I placed both little lockets in her hand as an answer to her natural query. She gazed lovingly at these certain proofs of her great good fortune, and exclaimed.

“Heaven be praised, it is papa—it is surely my dear papa. Poor dear papa, how grievous-

ly he has suffered during my long terrible absence. Now, sir, kindly tell me, when can I go to him ? ”

“To-morrow afternoon we shall take our departure. First acquaint your good friends at the institution with your great new joy ; then to-morrow morning I will visit you at the house and satisfy your motherly guardian the good matron that I and my mission are both honest and worthy of her fullest confidence. Afterwards we will take train for home and happiness.”

At once she arose from her seat, and extending her trembling little hand, she said.

“I will follow your instructions. I can never express to you my full appreciation of your kind sympathy and great assistance. Now good bye, to-morrow I will see you at the house.”

For a moment I stood and watched her graceful form disappear among the trees. My emotions can be guessed better than described. Then with joyous heart I rapidly walked homeward.

THE RE-UNION.

The following morning I bade the good folks at the farm-house farewell, and while all Nature was fully aroused to the charms of a bright delightful day, I turned my steps toward the Sanitarium. I received a hearty welcome on my

arrival, from the motherly matron, to whom I soon gave a full and satisfactory explanation of my happy errand, and thus gained the good lady's confidence and best wishes. It was a happy trio that sat around the cosy little tea-table enjoying the noon-meal and discussing the strange occurrences of the past few days. After dinner, the carriage was called, and we were driven to the train. After tender partings, exchanges of mutual best wishes, promises of early re-unions, my fair companion and I boarded the train, and as it slowly pulled out for its swift flight toward home, we could see the dear old soul still standing on the platform, alternately wiping her eyes and waving her handkerchief in sad farewell.

So busy were our thoughts during our rapid homeward course that our conversation was but desultory. My fair companion seemed wrapped in deep reflection, so I realized that I would be inconsiderate if not presumptuous to attempt to interrupt the course of her quiet meditations with uncongenial discussion.

Arriving safely at the point where our journey by rail came to an end, I ordered a carriage and we were driven to within a short walk of the river's bank. We soon reached the point on the mainland where a fine view of the island could be enjoyed. Here I directed the attention of my happy companion to the old hermitage, and I left her for a short time gazing intently at her future island home, while I went

in search of the boat I had carefully concealed in the rank growth of water birch and dwarf willows that skirt the river-side.

It was a delightful twilight when we reached the island. Petro was busy attending to the live-stock, so we proceeded immediately to the house without his knowledge of our arrival. Ushering my companion into the cozy sitting-room I at once went in search of the old hermit. I soon found him in his den gazing lovingly on the beautiful picture on the wall. He was nervously delighted to see me.

“You have brought her with you? my Fritz.”

“Yes, my dear Count, she impatiently awaits you in the sitting-room, allow me the great pleasure of escorting you into her presence.”

Trembling with suppressed emotion, my beloved friend descended the stairs with me and followed me into the sitting-room. I opened the door quietly, and stepped inside, thus allowing him a full view of the room. The old hermit stood motionless on the threshold for a moment, then with a wild cry of delight he sprang forward toward the young lady who had arisen to meet him.

“My child, my precious child.”

“Oh my papa.”

These exclamations of inexpressible joy were all I heard as I quietly retired leaving father and child clasped in each others embrace. I leisurely sauntered about the place and finally I dropped into the favorite rustic seat back of

the house, and with pleasantest emotions I here awaited the happy couple whom I knew would soon seek me. In a short time, father and daughter, united again after six long weary years of terrible separation, left the house and arm in arm came to join me beneath the old oak that had been silent witness to varied and numerous meetings between the old hermit and me.

After a most enjoyable half hour of happy discussion of the great joy that had come to all of us within a few short days, we returned to the house, where Petro was preparing the evening meal. I had previously informed him that we were favored with the presence of a young lady visitor, a friend of mine, and I warned him to prepare a meal worthy of the occasion. He proved equal to the emergency, and soon summoned us from the "den" to partake of the evening meal.

The old hermit and his truly happy child went into the dining-room, while I summoned Petro to his master's presence. I soon found the faithful fellow busy in the kitchen, and led him into the dining-room, where the other members of the party were awaiting him. As I entered the room I stepped aside and thus gave Petro a full, clear view of its occupants. Quickly gazing into the face of his beloved master to receive his commands, Petro became somewhat embarrassed by the presence of the beautiful young lady clinging to his master's arm. For

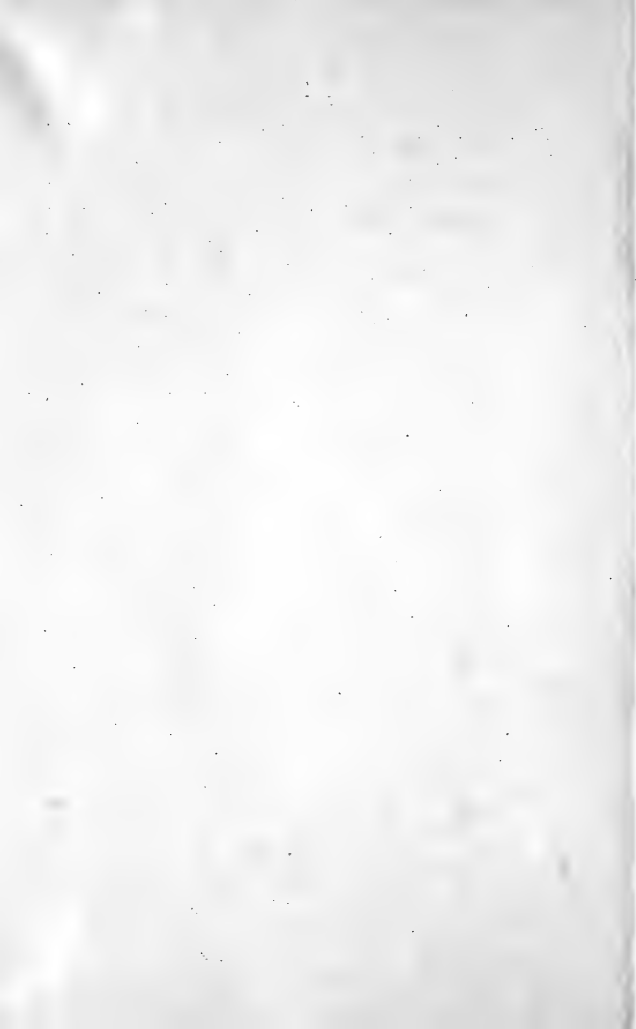
a moment his dull countenance was a study, as, with a nervous start, he caught a view of the young lady's face; then with a wild cry of uncontrollable joy he sprang forward and prostrating himself at the young lady's feet he poured out in a strange foreign tongue, his native speech, a hearty and joyous welcome. Anita tenderly responded to his vehement joy and bade him arise to his feet that she might look into his beaming face. Poor old Petro, he was almost beside himself with exuberant joy.

Well, my tale is nearly told. A short happy year soon passed at the hermitage, when at its close, Anita and I persuaded the old hermit to dispose of his island home, and consent to brighten the home nest that was in course of preparation for us, so cozily nestled among the wildest charms of Pennsylvania's most picturesque country. Petro and Pluto also joined our happy household and as we now look back over the marvelous experiences of but a few short years we cannot but declare

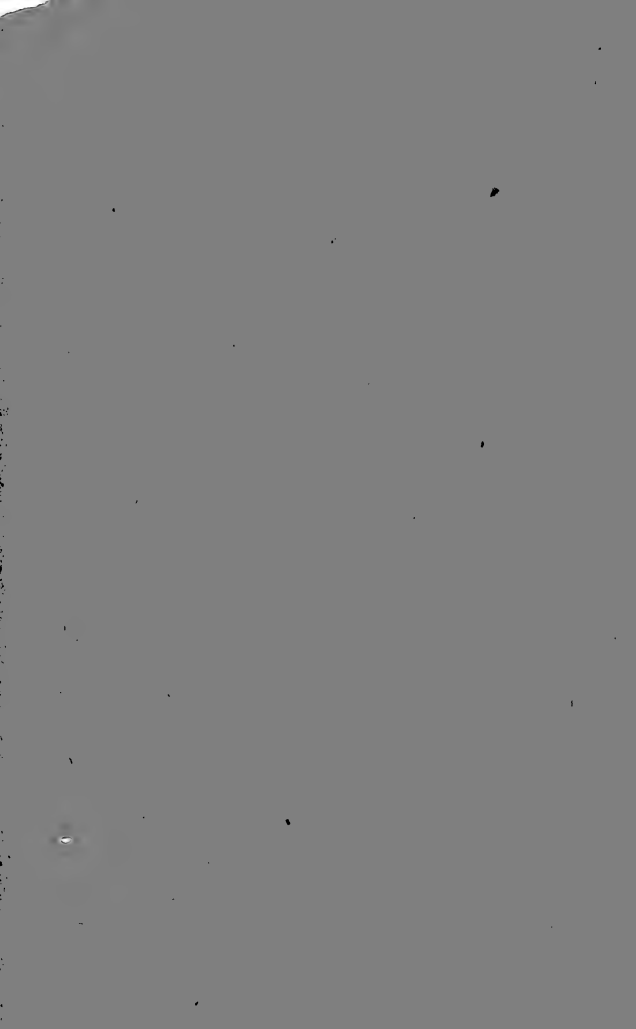
“There is a divinity that shapes our ends,
Rough hew them how we will.”

FINIS.

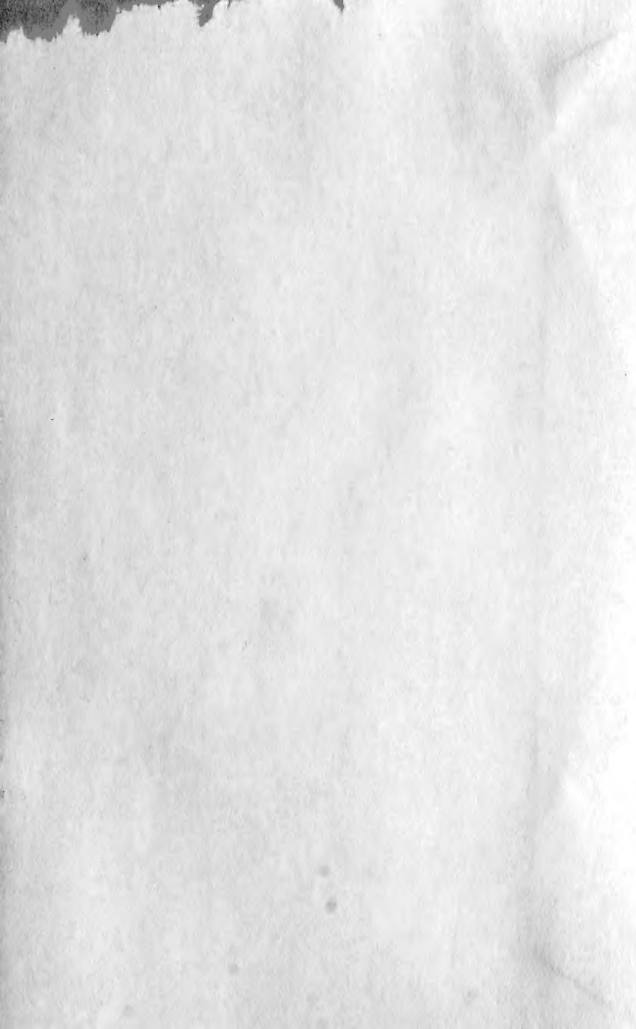


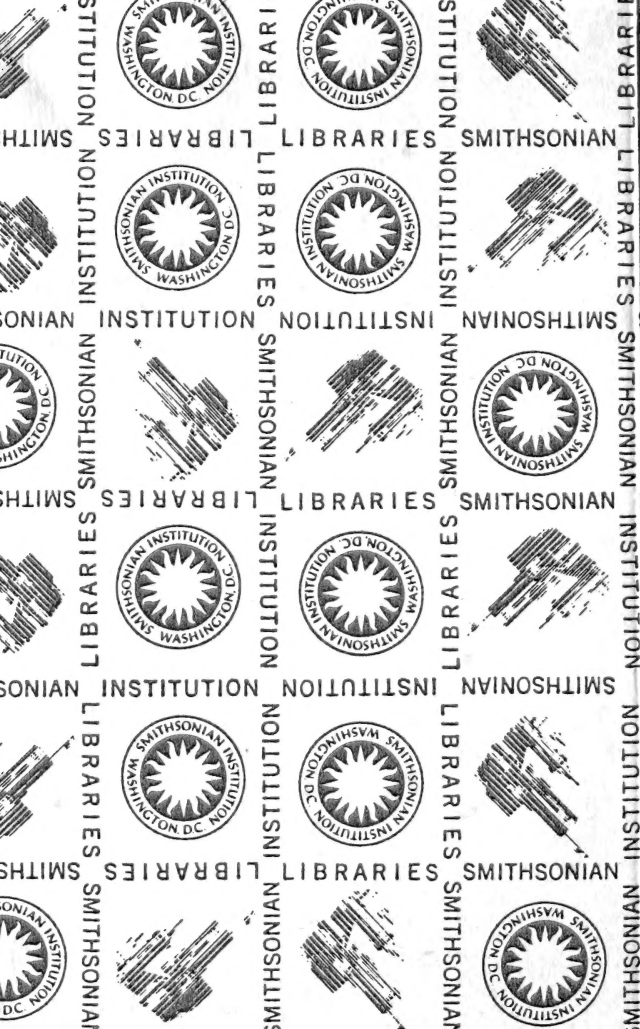


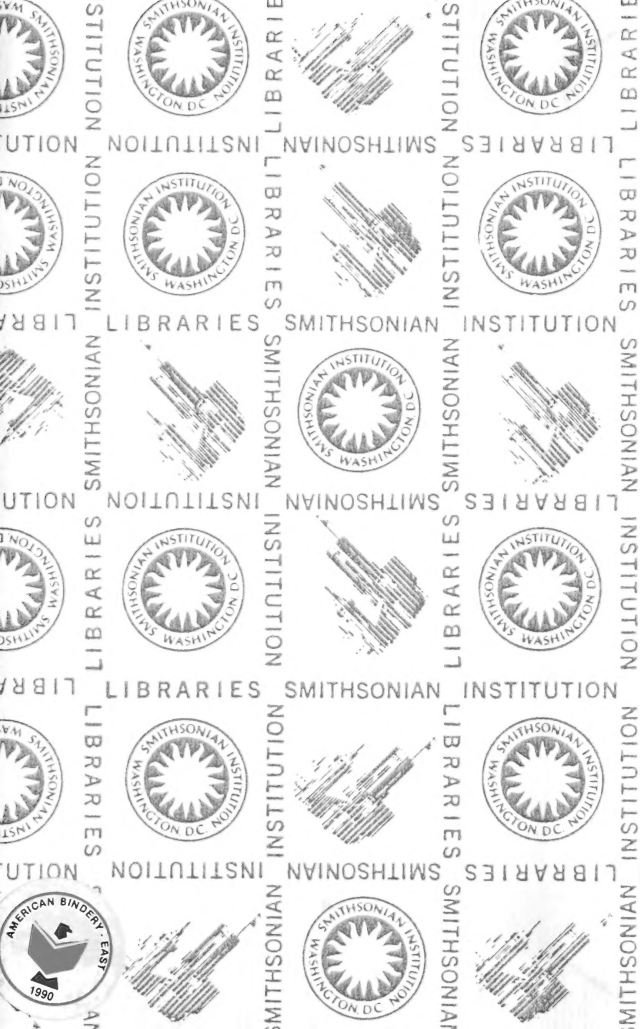




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