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UTINGS

AT

ODD TIMES

C. C. ABBOTT



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OUTINGS AT ODD TIMES

BY
CHARLES C. ABBOTT, M. D.

AUTHOR OF A NATURALIST'S RAMBLES ABOUT HOME,
DAYS OUT OF DOORS, ETC.



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P R E F A T O R Y.

Nature, and Books about it.

OFTEN, during a long and dusty walk in mid-summer, I have chanced suddenly upon a way-side spring, and stooping drank directly from the bosom of Mother Earth. Filled with the pleasant recollections of such moments, how tame is all other tipple, even though the crystal is a marvel of art, with "beady bubbles winking at the brim" !

So, too, I find it with matters of graver import. I would that no one should aid me in gathering my stores, but with my own hands I would delve at the fountain-head. The spirit of such an aim is a spur to youth, but becomes a source of amusement rather than a more serious matter in our maturer years. I am more than willing now to take nature at second hand. But is this safe? How far can we trust another's eyes, ears, and sense of touch and smell? There are critics scattered as thickly as motes in a sunbeam, veri-

table know-all's, who shriek "Beware!" when nature is reported; but, for all this, outdoor books are very tempting to a host of people, and in the long run educate rather than misinform. That ever two naturalists should wholly agree, after careful study of an animal, is not probable. There will be the same differences as exist between two translations of the same book. What a crow, a mouse, or a gorgeous cluster of blooming lotus is to me, these will never be to another; but, because of this, do not persist that your neighbor is blind, deaf, or stupid. I recently had a horse ask me to let down the bars; to another it would have been merely the meaningless fact that the horse neighed.

Having an outdoor book in hand, when and how should it be read? It is no doubt very tempting to think of a shady nook, or babbling brook, or both, in connection with the latest outdoor volume. Possibly, as you start out for a quiet day, you string together a bit of rhyme concerning the book, as Leigh Hunt did and others have done since. It is a common practice to carry a book into the fields, but not a logical one. How can a book, even one of outdoor topics, compete with Nature? Certainly if Nature is to the reader but a convenient room, a lighter and more airy one than any at home, does it not signify a serious lack in the mind of that person?

From a notice of a recent publication I clip the following: "A capital book to slip into one's pocket when taking an outing." If, because of its size, it could be readily slipped into one's pocket, then it was a capital way of getting rid of it. What sort of an outing can one have who reads all the while? Is not the cloud-flecked sky something more than a ceiling, the surrounding hills more than mere walls, the grass and flowers more than carpet? There is one pleasure even greater than that of reading, and that is being out of doors. To read at such a time seems to imply one of two things: either that the reader knows Nature thoroughly, or is indifferent to such knowledge. The former phenomenon the world has never seen; the latter, to speak mildly, deserves our pity. To escape ridicule, which is something, to insure happiness, which is more, to avoid great dangers, which is of even greater importance, one must know something of Nature. In one sense she is our persistent foe. She mantles with inviting cover of rank grass her treacherous quicksands; she paints in tempting colors her most poisonous fruits; she spreads unheralded the insidious miasma from the meadow and the swamp; but neither the quicksand, the unwholesome fruit, nor noxious vapors is an unmixed evil. Let us take them as they are, see them as parts and parcels

of a complete whole, and each hour of every outing is an unclouded joy. Nature never excuses our ignorance.

Whatever one's position in life, does a knowledge of Nature prove unneeded? Should we not know that potatoes grow beneath the sod, as well as apples grow upon trees? Gather a crowd at random on the streets, or corner a half-dozen at some social gathering, and how many can tell you the life-history of a mushroom or a truffle? "Do potatoes grow upon bushes?" was asked not long since. This was positively painful, but worse things have happened. A young lady, from a city renowned for its schools, startled her country cousins by asking, while toying with an ear of corn, "Which end, when you plant, do you put in the ground, the blunt or the pointed one?" If botany is impracticable in the curriculum of the public schools, ought not, at least, the natural history of our common articles of food to be taught? Can not such ignorance as this implied be banished from the land?

But I have wandered; let us come back to books. If books, even those descriptive of nature, are out of place in the woods, meadows, or by the brook-side, when should they be read? Clearly, when the scenes they treat of are not accessible. Why should we be entertained with a

description of a bird or flower, when they are both before us? It seems incredible that any one should be better pleased with another's impressions, however cunningly told, than with those of his own senses. It is a strange mental condition that can delight in the story of a bird, and yet have no desire to see the creature; to be a witness to all the marvelous cunning that this bird exhibits. Few are those among us whose outings cover a lifetime; and when the happy days of freedom come to us, let books be kept behind, and with untrammeled eyes and ears let us drink in the knowledge that comes to us at no other time. Summer is all too short a season for other occupation than enthusiastic sight-seeing and sound-hearing,

Long before autumn most of us must be back to the busy town. Business demands our work-day hours; and now, during the leisure of long winter evenings, with what delight one may recall vacation-days, reading outdoor books! The library now becomes the mountain, lake, or river. With Thoreau, Burroughs, or Jeffries at hand, one can hear the summer birds in the shrill whistle of the wind, and the babbling of summer brooks in the rattle of icy rain.

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C. C. A.

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PART I.
IN WINTER.

A Winter Sunrise.

THE waning moon was scarcely visible in the western sky and not a star shone overhead, when I ventured out of doors, at the call of the gathering crows. These noisy scavengers of the river's shore had evidently slept with one eye open, and at the first faint glimmering of the dawn signaled, in no uncertain tones, the coming day. Across the brown meadows floated their clamorous cries and roused me when my own slumber was most profound; but I responded promptly, willing at least, if not wildly anxious, to witness a winter sunrise.

I have said the meadows were brown; such was their color when I saw them last; but now, every wrinkled blade of last year's grass was daintily feathered with pearly frost. A line, too, of steel-gray crystals topped every rail of the

old worm fence, and capped the outreaching branches of the scattered trees. The glint of splintered glass filled the landscape.

Knowing the view would there be least obstructed, I walked leisurely to a high knoll in the lower meadows, leaving a curiously dark streak behind me where I brushed away the frost as I passed. Not a bird greeted me. The sparrows and chickadees of yesterday were still asleep. The crackling of brittle twigs beneath my feet was the only sound I heard, save, of course, the blended voices of the distant crows. The brightening of the eastern sky proceeded slowly. Cloud above cloud threatened to shut out the light until the day had well advanced; while from the river rose a filmy bank of smoke-like fog that settled in huge masses over the intervening marshes. But still the crows were clamorous, and I had been told that their songs at sunrise augured a fair day; so, 'twixt hope and fear, I reached the high knoll in my neighbor's meadow. It was at the nick of time. Without a heralding ray in the whole horizon, a flood of rosy light leaped through a rift in the clouds and every cold gray crystal of the frost glowed with ruddy warmth. Then deafening loud was the din of the foraging crows, as though they exulted at the fulfillment of their prediction; and from that moment on, the day was beautiful.

And if crows could be so enthusiastic over a bright winter day, why not other birds? What of that host of arctic finches that tarry with us until spring? I listened in vain for the foxie sparrow's warble, the call of the Peabody bird, and whistling of the purple finch. These were all here yesterday and making merry; now every one was mute. The ceaseless cawing of the crows may have drowned their voices, but I think not. However, in other ways and no less cheerful ones, the vivifying effect of sunrise was soon apparent everywhere about me.

My friends, the meadow mice, were in their glory. Their grass-walled runways were roofed with ice, and not a breath of the chilly breeze that fretted the outer world could reach them. I quite forgot the increasing beauty of the eastern sky in my eagerness to watch the mice. I could look down upon them, through the transparent roofs of their crystal palaces, and wonder what might be their errands. Every one was in a hurry, and none stopped to nibble at a blade of grass or tarried at a cluster of seed-pods. Was it the mere pleasure of activity that prompted them? It was very warm beneath the ice and far from cold above it. But all the while I might be frightening the poor creatures, so I withdrew, at the thought, to the cover of a clump of bushes. Quiet then seemed partially restored, and soon

one mouse came from an opening in the roof, where many runways met. It picked its painful way over the frost, as though every crystal was a pricking needle. I moved and away it darted, but not to tell its fellows. Another and another came, and, like the one first seen, they simply ran from post to pillar and back from pillar to post. Perhaps a weasel was on their track—but, if we commence surmising, there will never be an end to it. Let me declare dogmatically, these mice were taking a sun bath, and with this thought, leave them.

As I looked about me, the crows again became the most prominent feature of the landscape. They hovered in a loose flock over all the meadows ; literally, in thousands, and as the rays of the sun struck them, they too glistened as though the frost crystals had incased their feathers. Higher and higher they rose into the misty air and soon dispersed in every direction ; but they will gather again as the day closes, for over the river, somewhere in the woods, they have a roosting-place. I have seen this knoll, now thickly tenanted by mice, black with crows, day after day, within a fortnight. What then became of the mice ? Surely their cunning stood them well in need to escape these ravenous birds, and yet they have done so. Stupid as they seem when studied individually, these mice must have a modicum of

mother-wit, to thrive in spite of so many odds against them.

But now, as the day advanced, the wooded bluff a mile away and the willows on the river-shore gave evidence that not alone were the crows and mice awake to the beauty and warmth of a winter sunrise. The feathered world was now astir and music from a hundred throats filled the crisp air. There was, it is true, not that volume of sound that greets the daybreak in June, and no one voice was as tuneful as a thrush. This mattered not. The essential feature of a pleasant stroll, evidence that I was not alone, was present; for I can not keep company with meadow mice. I call it a dead day, when there are no birds, and he who would know what such a day is should be on the marshes or the river when not a sound rises from the wild waste about him.

I stood long listening to the afar-off choir, and then, turning my steps homeward, fancied I could distinguish the different birds that now made the woods fairly ring. There was a ditch to cross before reaching the hillside, and right glad am I that I looked before leaping it, for I saw a lazy frog slowly responding to the increasing warmth of the sunshine. All night long this creature had been sleeping in a cosy nook, a foot deep in the soft mud which was protected here

from the north and west and has never been known to freeze. One eye and a small fraction of the frog's head were visible, but the former was bright, and I was sure that no accident had happened to bring it even so far above the surface. I stood very still, expecting much, but it was like watching the hour-hand of a clock. In time the whole head was exposed, then the fore-limbs, and this, for many minutes, was the extent of the frog's activity. I ventured finally to assist, and lifting up the clammy creature, placed it on a floating fence rail, whereon the sun shone as in summer. The frog was happy. Its expression showed this, its pulsing sides proved it, and could I have heard it croak, my own satisfaction would have been complete; but this it would not do. But let it be remembered, the croaking can not be forced, either in June or January, and the voices of frogs have been heard frequently during the latter month. Even when the winter has been very severe, a typical January thaw has led them to give tongue, to croak unmistakably, although in thinner tones than during a summer's night chorus.

There were hours yet before noon, and my little adventure with the languid frog prompted me to explore the ditch in a rude way. All forms of aquatic life seemed as active as in spring. Fish, salamanders, snakes, turtles, and

insects, were not only active but alert, and as difficult to capture as I had ever found them. Actual sluggishness characterized the frogs only, and yet these creatures are supposed to be less susceptible to cold than all the others. The truth is, the winter habits of every form of life are little known, and what impressions, if any, most have upon the subject are more or less erroneous. We have had no winter as yet, but the same conditions that I found to-day were true of the ditch-dwellers last year and the year before, when we had not only winter, but winter intensified.

I did not enumerate the many birds aright as I approached the hillside. My attention was suddenly called from the ditch to the green-brier thicket beyond by a familiar sound, yet which now, late in January, seemed quite out of place if not out of tune and harsh. It was the querulous cry of a cat-bird. This familiar thrush is no *rara avis* at such a time, although probably in Audubon's day few if any remained in New Jersey during the winter. No author makes mention, I believe, of such an occurrence. The number seen each winter gradually increases, and the disposition to remain affects apparently these birds over a steadily extending area. So, at least, from correspondence, I am led to believe.

I found but three flowers as I neared my home—a dandelion, a violet, and a pale spring beauty; but earlier in the month, a friend had been more successful, and gathered not only those I have named, but others. Doubtless these superlatively early blossomings have to do with the present extraordinary winter, now more than half gone, but not altogether, perhaps. Many a plant is more vigorous than we suspect, and stray flowers are hidden beneath the fallen leaves more often than we know.

When, in the forbidding gloom of a winter dawn, I ventured out of doors, it was with the anticipation of a cheerless walk, if not fear of actual discomfort; but the brilliant sunrise promptly dispelled all this, my fears giving way to hopes that were more than realized.

Midwinter Minstrelsy.

IT is a common impression, I find, that when the Northern song-birds come in autumn from Canada to the Middle and Southern States, they leave their music behind them, and during their sojourn here they only chirp and twitter at best, and far oftener are moody and silent. This absurdity is not readily explained, unless it be that

lovers of birds are persistently indoors from November until May. I do not pretend to say that a keen, cold, frosty morning is rendered the more charming by reason of the best efforts of the winter wren, purple finch, or white-crowned sparrow, but that not one of them is necessarily mute because the mercury is down to zero. Indeed, temperature alone seems to have almost nothing to do with the movements or habits generally of our birds, either the resident or migratory species. All depends upon the food-supply, and a feast in winter is followed by a merry heart as surely as a successful wooing in May results in ecstatic song. I think this is borne out by the fact that during the present season—as yet winter only in name—there has been really less activity and disposition on the part of all our birds to sing than when we have had snow and ice in abundance. I worked my way recently through a tangled, trackless bit of swamp, and, while climbing over the prostrate trunk of a huge tree, startled a winter wren as it crept from beneath a smaller log near by. It seemed as astonished that I should have ventured so far from the open meadow as I was to see any bird less mopish than an owl. The wren stood contemplating me for at least one minute—a long time for a wren to remain in one spot—and then gave vent to its astonishment

by, not a chirp, but a short series of sweet notes, that well repaid me for my recent labors. Then, darting into the thicket, the wren was gone, but I was not left alone. At the same moment, a troop of tree-sparrows settled upon the clustered water-birches, and their united voices rose to the dignity of a bird's song. Such it evidently was intended to be, for the chattering of birds, when they merely chirp or twitter—which is but their conversation—is never so softly modulated, but pitched in a hundred different keys. This became noticeable directly afterward, for the birds scattered among the undergrowth, and the short, quick utterances that I soon continually heard bore no resemblance to the two or three notes, which, before they had separated, they uttered in concert.

And as I returned home, while crossing a wide meadow where the rank grasses afforded excellent cover, I found many small brown birds that ran through them as aimlessly as frightened mice; they were titlarks, as it proved. None sang until I was near at hand, when one after the other rose a short distance from the ground, flew a few feet, and uttered, while on the wing, a sharp, but bell-like note that was truly musical. Another and another started up, at almost every step, but only to alight again directly. At times there were four or five in sight at once,

and then their united voices sounded sweetly in the still air. Quickening my steps, the flock finally rose in a body, and, so fitful and irregular was their progress, had there been a stiff breeze at the time they might have been mistaken for drifting autumn leaves. I need not pursue this feature of winter bird life further, so far as the migratory species are concerned; but a word with reference to those birds which are here throughout the year—the resident species. The robin, Carolina wren, song-sparrow, and thistlebird sing, I am sure, with unabated ardor, in spite of the cold. A miserably damp, foggy, or even windy day has a depressing effect, and at such a time I usually find the woods, meadows, and the river shore quite silent, unless, indeed, there be crows in abundance. During the last week in January, 1889, when much of the time there was a chilly northwest wind and often a clouded sky, the song-sparrows thronged the willow hedges, and sang their May-day melodies. I heard them soon after sunrise, at midday, and once after the sun had gone down and it was fast growing dark.

There is yet another feature of bird music which is characteristic of winter—the singing of passing flocks when high in the air. Day after day, of late, soon after sunrise, a merry company of bluebirds fly over the house, and each one

sings as he passes by. Toward sunset they return to the cedar and pine woods across the river, and then, too, they may be heard. Their movements are as regular as those of the crows that roost somewhere in the same neighborhood. I have often failed to see them, they flew at so great an elevation, but their song is not to be confounded with that of any other bird; nor are they like the chats—ventriloquists. Somewhere in the upper regions they were floating along, and their music, drifting earthward, brightens the winter landscape until we think of early spring. But the bluebirds are not always so unsociable, There is a rick of cornstalks not far away, about which I find a pair almost daily, and did not the pestiferous house-sparrows worry them so much, I am sure they would sing more frequently. They appear to realize that their songs may be heard, and so bring down upon them an attack; so, if they warble at all, it is very softly, as though not quite discouraged, and hopeful of better times. They have held their little fort, however, since early autumn, and I am in hopes will outwit their enemies when nesting time arrives.

No, it is not true that the country is desolate, even in midwinter. I heard a bluebird sing during the great storm of March, 1888, and since then have been hopeful, although for more than

one mile, during my recent outings, comparative silence reigned. And now, what of to-day, the last one of the month? I heard the crested tit whistling in the far-off woods before the sun had risen, and not less musical was the distant cawing of the myriad crows that were just leaving their roost. Overhead, in the tops of the tall pines, were nuthatches and chickadees, and shortly after a host of pine finches. They were all fretting, as I fancied, because the wide reaches of meadow near by were still shut from view, but it was not harsh scolding, after all; and as the day brightened, their voices cleared, until later, when the birds had scattered among the hedges, they all sang sweetly; for at such a time the ear is not critical, and even the plaint of the nuthatch is not out of tune. On and on I walked, expecting in the wilder woods and about the marshy meadows to find birds and birds—many that sang and others that would interest by virtue of their ways. I confidently looked for the host of winter finches and the overstaying herons, but I saw none, heard none. By noon the whole country was sadly silent, and not even a crow passed by. Yet the day was perfect; save a little cooler, it was typical Indian-summer weather. Plant life responded to the inviting sunshine, and I gathered violets and spring beauty. Even the saxifrage shone through the brown leaves, its

white buds almost unfolded. It is in vain to conjecture what had become of the birds of the early morning. Let it suffice to say that I was greatly disappointed, and had I not been astir so very early would have been the more sorely puzzled. As it was, the birds had not utterly forsaken us, and proved in their own way and in their own time that midwinter minstrelsy is not a myth.

A Cold Wave.

WHEN Mr. Isaac Norris, of Philadelphia, merchant and man of observation, recorded the weather in the vicinity of that city, 1749 and earlier, he did not mention "cold waves," as such, but remarked that there was greater irregularity then than formerly, adding the significant statement, "at present it is warm, even the very next day after a severe cold, and sometimes the weather changes several times a day."

Whether since 1749 these sudden changes of temperature have become more frequent or not, I have no satisfactory means of determining, but am inclined to think such to be the case; but new or old as a meteorological freak, a cold wave is worthy of the rambler's study, in spite of the discomforts sure to be encountered, for it

necessarily affects all animal life that was astir before it reached us. Yesterday, there were birds in the woods and about the meadows; even spiders had spread their webs in the sunny glades, and stray flies hummed in the sheltered hollows of the hill; so that thoughts of an early spring came continually to the fore, as I watched and listened to the busy life about me, myself reclining at full length, on a prostrate tree.

Had there been no intimation of the cold wave's coming in the morning paper, it would have been suspected as on its way, for all day the barometer was suspiciously low, and soon after sunset a faint moaning in the chimney corner and a far shriller sound among the tree-tops suggested a coming change. The sudden up-leaping of sparks, too, from the back-log counts for something. For an hour or more the coals had been red or purple and scarcely a flame, however small, shot from the glowing mass; then, at the whisper of the fretful wind, suddenly long trains of brilliant sparks flew upward, and again, both the back-log and the black fore-sticks were ablaze. Doubtless, in the good old times, this never passed unnoticed and every one ventured a prediction when there was no likelihood of erring. So he who spake first, in the days of our grandfathers, became the greater weather-prophet.

During the night the cold wave came. As I write, we are having the first ice-making weather of the season, although February is well advanced. The chill, gray clouds scarcely concealed the sun as it rose, and later, when the sky was clear, a rosy blush tinted the drifted snow upon the fields. What now of the busy birds, the spiders, and humming flies of yesterday? Have they folded their tents like Arabs and silently disappeared?

Facing the north wind, I pushed through brake and brier, listening at every step for the chirp of a startled bird. For some time I neither saw nor heard a living creature, nor, indeed, did I wonder at their absence. At last a solitary crow struggled against the fierce wind and uttered at times a most melancholy plaint. It was all but sufficient to send me home, and I stood for a moment pitifully undecided; but the crow, I saw, did make some headway, and I took a hint of it. The icy gusts that swept the hillside soon forced me, however, to seek shelter, and I crept for some distance along the bed of a deep dry ditch overhung by blackberry canes and smilax. Here I found a more spring-like temperature, and was not surprised when from the clusters of dead grass blue jays hopped before me. They were evidently startled at my appearance in their snug retreat, but still were not timid, as when in the open woods. I often approached within a few

paces, and they hid, I am sure, in the tangled vines and bushes on the banks of the ditch, instead of flying out into the meadow. But if jays, there should be other birds I thought, and I stopped again and again to listen. It was the same old story—nothing was to be heard but the roar of the wind overhead. Weary at last with creeping through such cramped quarters, I sat down to rest at a convenient point, and never have I been so fortunate in the choice of an outlook.

It is clearly evident that our resident birds and mammals soon know every nook and corner of their chosen haunts, and more, that they pass from point to point in accordance with fixed plans and do not wander aimlessly about. If you overtake in broad daylight, as sometimes happens, any animal larger than a mouse, it is not likely to be confused, not knowing which way to turn. Such indecision would invariably prove fatal. Their actions under such circumstances indicate full knowledge of their surroundings, and convince one of this fact. If not true, then every surprised animal must take in at a glance every tree, burrow, ditch, and path, and select between them, in the twinkling of an eye. My own observations lead me to conclude that our mammals, which are largely nocturnal, survey at night the whole country and know every inch of the ground.

Every tanglewood is to them a city with its main thoroughfares and side alleys, and it is this knowledge that enables them to outwit their foes. Within a few days, a skunk came boldly into the yard, in broad daylight; defied the dog by assuming a bold front, and was making for the only near place of safety within easy reach, when in the yard, an opening under a side porch. By mere accident only it was run down and killed. This dreaded creature had evidently been belated, and coming home after sunrise used wonderful tactics when it encountered the dog. It played with him. It ran this way and that, but never far, and always faced the half-timid mastiff. It shook its huge tail, bristled its long fur, snapped, squeaked, and all the while approached in short stages the porch. At last, seeing more than an even chance of reaching it, the cunning creature bolted, and I am almost sorry that it did not escape.

So, too, with our birds. Not all of them act upon foreknowledge of a coming cold wave, and temporarily migrate. On the other hand, had they no places of refuge, the majority would perish. No bird could have weathered the cold cutting winds that prevailed last night, with the air, too, at times, filled with stinging sleet. Yet, hunt the country over, after such a night, and how seldom will you find a dead bird lying upon

the ground. Even after such a storm as the historic blizzard of a year ago, birds that had succumbed through exposure were comparatively few. The fact that the alien sparrows in our cities were destroyed in large numbers, strengthens my previous assertion, for they, unlike wild life, are largely deprived of the advantage of snug harbors, such as the country affords our native birds; and their semi-domesticated condition has rendered them less provident and observing. Such, at least, was the tenor of my thoughts while resting in my sheltered outlook.

Before many minutes had elapsed the expected chirping of winter finches was heard; at first in the distance, but directly almost overhead; then, everywhere about me. A moment later, and a dozen were in full view. Myself, a shapeless mass upon a mossy log, the birds mistook me for a part of it, and I had but to look and listen. Foxie sparrows threaded the tangled maze of vine and cane, singing a few sweet notes at times, as the wind lulled and the warm sunshine flooded the shelter with a brighter glow; white-throats warbled in their listless way, and one fearless winter wren peered into every cranny of the hollowed earth, spider-hunting wherever the waters of the last freshet had caverned the overhanging banks. As it drew near, I almost held my breath, hoping it would venture to creep

over me. Once it came very near, stopped and looked me squarely in the face, but without its suspicions being aroused. Probably I needed but a few cobwebs to have brought it even closer.

For long the light-hearted birds, in joyous mood, passed up and down this hidden highway, often within arm's reach, and not one recognized me. It was much like being alone in a strange city, where the feeling of desolate isolation can best be realized. Much as I might desire it, I could in no sense become a part of the happy world about me. Here, at times, is the shadow that rests upon the rambler's path—to feel that at best he is but tolerated, and to know that had these happy creatures the power they would drive him into the bleak world beyond.

One interesting feature of bird life was to-day very apparent. Never did two or more individuals meet upon the same twig but a low, scarcely audible twitter was uttered. I could often see a slight movement of the beak, without hearing a sound, and notice a gentle tremor of the wings, that doubtless meant much to them, but can not be interpreted by us. Then away they would go, following the line of the long ditch without grazing the tiniest twig that bent above them. Why many a sparrow, apparently in reckless haste, did not come to grief, is indeed a puzzle;

for never, I thought, had I found thorns so sharp, so slender, and so thickly set.

But not birds alone had sought shelter here; the mice also had been driven from the wind-swept meadows, and these ventured into the sunlight, but were cautious to a marked degree. None came very near, and when I was in full view they stopped, sat upon their haunches and felt sure, if I correctly read their thoughts, that all was not quite right. Not one passed by me. Their keen noses detected what the proverbially keen sight of the birds had failed to discover, that I was not a harmless bit of driftwood. Or did the sense of hearing catch the sound of my breathing? Explain it as one may, meadow-mice were never before so knowing, and I recall the charge that I have often made, that they are stupid.

So here I sat for two whole hours, yet not aware that so long a time had elapsed. It mattered nothing that the fierce wind raged above me; that the bending oaks echoed its heartless boast :

“I come from the fields of the frozen north,
O'er the waste of the trackless sea,
Where the winter sun looks wearily forth,
And yieldeth his strength to me.”

This lessened not my comfort nor quickened my homeward steps. Wrapping my cloak the

closer, I recalled the day's adventures as I withdrew, thinking how true it was that pleasant surprises are ever in store for the earnest rambler and many a loss for him who is faint-hearted. It is not well to judge the world through a window.

The Woods in Winter.

WHEN I walk in the woods in summer I think of the trees as a shelter. They go to form a protection alike against the sun and passing shower. And if I turn from the old cart-path it is but to enter some one-side compartment of a great labyrinth of rooms. No one tree calls for observation. They are as the inner walls of a great house, and what they surround alone commands attention. It is going out of doors as much to leave the thick woods as to pass from your dwelling. But now, during December's bright, cheery, winter days, every tree in these same woods becomes my companion. We are exposed to the same sunny sky, and as I wander from one to another, each has its pleasant greeting for me. This has been a life-long fancy of mine. Walk up to a century-old oak, and how promptly it speaks to you of giant strength and sturdy independence; turn then to a stately

liquid-ambar and you are greeted with exquisite grace. I can point out in the old woods here at home the counterparts of many a man I know. The lonely wild apple on a gravelly knoll is as crabbed as my crusty neighbor who begrudges me a few flint arrowheads. I think I should be soured by wandering half a day in a forest of wild-apple trees. There is no such feeling when with the oaks, beeches, chestnuts, and silver birch. They recall no unfortunates among one's acquaintance. Every tree of them is content with the world as it finds it, and so too am I when surrounded by them.

The woods were quiet when I entered. Not a twig trembled, and the dead leaves were too limp to crackle beneath my feet. Dainty frost crystals were plentifully strown over the dwarfed bushes by the roadside, and a film of glittering ice with jagged sides reached out from the banks of a little brook near by. Nowhere did the ice reach wholly across the stream, and so was the more beautiful by reason of the inky waters that flowed sluggishly beneath it.

Where, about the roots of a massive beech, the brook had become a little pool, I stood for many minutes, alternately watching the waters that here seemed roused to a semblance of activity, and then listening to the welcome cawing of the over-flying crows. Brooks, birds, and

trees! Your choice of such good company, and yet there are those who would have gone mad here from loneliness! For the time I gave heed to the brook, wondering as usual what might be beneath the surface, and all the while, as ever happens, the creatures of the brook were wondering about myself. If one turns to the textbooks he will find much said of the instinct that leads the lower forms of life to seek a safe shelter as winter approaches. The lower forms of life in this brook had no such intention. First, I detected dainty little frogs—the peeping hylodes—squatted on dead leaves and yellow pebbles, and so spotted, splotched, and wrinkled were they that it took sharp eyes to find them. Their idea of a shelter in winter is from enemies, and not from the frosty air; a little warmer sunshine to-day would have moved them to sing. Time and again during November they rattled and “peeped” almost as shrilly as ever in April, and they will again, if we are treated to a green Christmas.

The spirit of exploration seized me now, and I brushed the shallow waters with a cedar branch. Lazy mud minnows were whipped from their retreats, and a beautiful red salamander that I sent whizzing through the air wriggled among the brown leaves upon the ground. It was only after a hard chase that I captured it, and, holding

it in my hand until rested, I endeavored to induce it to squeak, for it is one of a very few that has a voice; but it was not to be coaxed. It suffered many indignities in silence, and so shamed me by its patience that I gently placed it in the brook. Soon, black, shining whirligigs—the gyrinus—suddenly appeared, and a turtle, as if wondering what might be the cause of the commotion, thrust its head in the air, stared angrily at me, and returned to its hidden home. There was no dearth of life in the brook, yet this is a winter day. The ground is frozen, and the rattle of wagons upon the highway penetrates even to this remote recess in the deep woods.

As a child soon tires of one toy, so I longed, after an hour's play, for a new field and other forms of life, and so much for serious study as that I might vary my amusement; but let not this apparent aimlessness be held unworthy of the rambler. Call it play, if you choose, but the incidents of such a day come back in bold relief when, with or without an effort, they are recalled. I have found it most fortunate that unconscious cerebration is so active when I wander about, toying, as here by the forest brook, with many forms of life. More than half the acts of every creature I meet are apparently meaningless at the moment of their occurrence, but their full significance is evident when in

thought I wander a second time over the same ground. Scarcely regarded incidents come well to the fore and throw a flood of light upon what lacked at the time any evidence, on the creature's part, of complicated thought.

Herein, I think, lies the secret of so much disappointment when some people—and they are many—wander in the fields. Filled with enthusiastic desire upon laying down the teeming pages of Thoreau and Burroughs, they expect to see with another's eyes and appreciate with another's brain. They see a bird, a mammal, or a host of butterflies, and then ask themselves upon the spot, Well ! what of them ? The bare fact of their presence is all that the minds of inexperienced ramblers encompass. The wild life they have met excites a passing thrill and they give no further heed to it. And it never occurs to many to recall the incidents. Being a bit disappointed then, why give heed to the subject later ? On the contrary, if at the close of the day, in the hills and hollows of the blazing wood upon the andirons, if the walk was in winter, we picture the scenes of the recent ramble, these same birds or mammals, or whatsoever else we saw, will be seen again in a new light. Why those birds and not others were where we found them ; why the field-mice or rabbits or a weasel were where we saw them or it, will become evi-

dent. The various features of every visited spot will be remembered ; and the cheery blaze upon the hearth tells us, as it were, the story that could not be read when facing Nature's open page. Some of us inveterate ramblers read more than others, when in the fields, but no one can afford to trust to this alone. To extract the whole truth, the past must be recalled again and again.

As I whiled away the time with the tenants of the brook, so I gave heed to every passing bird, and what a strange panorama, as one kind after another flitted by ! The happy association of woods and water here, as it attracted me, drew them to the spot, yet no one loitered long. The busy brown tree-creeper traced the crannies of the wrinkled oaks ; the nuthatches followed, and their complaining squeaks seemed expressive of disappointment that so little food was to be found. Was this true ? Were these little birds really complaining ? It certainly seemed so. But how treacherous is this impression of seeming so ! Too often, I fear, the rambler is content with it and goes his way convinced that what was vaguely apparent was the truth, the whole truth, and nothing more nor less. I hold it probably true that if every bird which found itself too late was disposed to complain, there would be a vast deal more quarreling than actually occurs. How little contention there is in the

bird-world ! While it is true that birds of a feather flock together, it is equally so that widely different species also amicably associate, and flagrant is the act that calls for punishment. Better luck next time is the homely proverb that actuates all non-predatorial bird life.

But the merit of birds is their suggestiveness. Promptly following the nuthatches came the ever-welcome song-sparrow. It hopped, with springtide liveliness, among the dead leaves near the brook, and then, flying to a hazel bush near by, it sang that sweet song that not even the mocking-bird ventures to repeat. The woods vanished, and the old garden with its gooseberry hedge was before me. I was a wondering child again, listening and looking at the happy bird, happy as itself.

It is December, the day is cold, the trees are leafless, the ground frozen ; but not a thought of all this had clouded my joy for half a day. There is the elixir of perpetual summer even in the woods in winter, and happy is he who can find it.

Old Almanacs.

IT is a dilapidated outbuilding now, and the merest ghost of its former self. Scarcely one of the many marked features of the old kitchen is left. The cavernous fireplace, the corner cupboard, the narrow box staircase, the heavy double doors, with their long strap hinges, the long narrow table by the south windows, have all been removed. And sad, too, to think that, one by one, the sturdy farmer folk that lived in and loved this now dark and dingy room have all passed away. For me, it is the Mecca to which I most fondly turn when indulging in retrospection. In and about it were passed many of those peculiarly happy days, the recollection of which grows brighter as the years roll by. From late autumn until spring, when for five months the nights were long, this kitchen was the favorite rendezvous, and conversation, rather than reading, the popular amusement. Not that there were no books in the house. There were fifty volumes, at least, in the old book-case, but I can not recall one in the hands of a reader. There are many of them now on my own shelves—Gibbon, Johnson, Goldsmith, Burns, and the journal of many a Quaker of colonial times. It would be unfair to say that books were unpopular, but rather that conversa-

tion was held in higher esteem. Then, certainly, every neighborhood had its characters, and their like has not been transmitted to the present generation. I saw the last of a native folk who had occupied my neighborhood since 1680. Now a new people, and as different as black from white, occupy the land ; but during my early childhood, my grandfather's help, like himself, had always lived in the neighborhood. They had been boys together, and little wonder that, when a day's work was done, the evening should have been spent in reminiscent talk. The farmer was not off to his book at candle-light, and the "hands" left to their thoughts.

How glad, now, am I, that I caught, even in early youth, a glimpse of simpler times ! In one way, however, the world has not changed ; conversation continually turned upon the weather, and there was one book to which reference was often made and quite frequently consulted—the almanac. How plainly I can see my grandfather adjust his heavy-rimmed spectacles and turn to the record of the current month ! "Yes, thee is right, Abijah ; the moon changes in the forenoon." Then the thin pamphlet was hung again in its place in the chimney corner. Hard-headed and alertly observant as were the farmers of fifty years ago, they all deferred to the almanac's dictum. Men might say, perhaps, what they

pleased; but if he who could write an almanac ventured to predict, who were they to dispute it? So they thought, and if snow had been foretold for the Fourth of July, they would have explained the reason why it did not come, and pity, not scorn, the prophet.

I do not know when the first almanac was hung in the chimney corner, but the custom, once started, continued to the end, and when the kitchen was dismantled, a great pile of "Poor Richards" were brought to light from a dark hole in the cavernous corner cupboard. The wisdom crowded upon those torn and tattered pages seems to have been lost, and the later generations were content, if I do not misunderstand them, with the commonplaces and predictions to which reference has been made. But with all their unquestioning reliance upon the almanac, the men who were daily out of doors were prophets unto themselves, and proud of the petty discoveries they claimed to have made. This it was that spiced their conversation and made the meeting of two or three in a cozy kitchen an attractive occurrence to young ears. I do not wonder that books were ignored, when every laboring man laid claim to peculiar knowledge, and, of course, formulated weather proverbs, the like of which have never got into print. For while the neighborhood had, like all others, its com-

mon stock of accepted "sayings," not a man for miles around but had some two or three that he had framed for his own guidance. Every discussion teemed with "according to Joshua," or "Jeremiah's saying is," but every man was largely a follower of himself. Looking backward, and studying my grandfather's "help," and even my farmer neighbors, I see, in the light of the present, that these men were both ignorant and wise; having a rich store of facts from which they drew illogical deductions.

Apropos of this, let me add that of a series of sixteen newspaper clippings, from papers published in October and November, 1889, fifteen of them were predictions of a winter of unusual severity in the Middle States. The one that maintained the coming of a mild winter gave no reasons for such a conclusion, but stated very briefly that "certain never-failing signs pointed that way." It is a pity that such signs were not generally known, now that the "ground-goose, hog-bone" theory has proved unreliable.

And so it was, a year earlier. During the autumn of 1888, I gathered, by the aid of several friends, a considerable number of newspaper clippings concerning the character of the coming winter. Most of them predicted a very severe season and a late spring; a few were somewhat more moderate in the use of superlatives, and

one long essay on the breast-bone of the goose made me shiver to read, although the day was warm, and in spite of the assurance that each of the "phenomenally cold periods" would be alternated by "spells of fall-like weather." Not one hit the nail upon the head and foretold that December and January would be winter with winter left out. And only to-day (January 31) I find in a local paper that the musk-rats are stopping up the entrances to their homes, and February will be very cold. Perhaps! On the other hand, I have just received Volume I of the Geological Survey of New Jersey, in which is a most interesting chapter on the climate of this State. Looking over a tabulated statement of the weather, as characteristic of seasons, I find that we have had six notably mild winters in the past forty years, that of '81-'82 being "one of the warmest on record." Armed with these facts, I hunted up our oldest neighbor, Zephaniah Blank, and plied him with questions. Of course, as I intended, the conversation turned upon the weather, as it usually does, and he was very positive that we had had no such winter as the present for "nigh on to thirty years." The old gentleman could recollect the moderately warm winter of '57-'58, but that of '81-'82 had passed from his mind. Had a reporter overheard our talk upon the subject, the local paper would

doubtless have recorded the present as the warmest winter in thirty years, which is not the fact. Besides, we are not yet out of the woods, for February is often very cold, and March, to put the best face upon it, exceedingly tricky. Considering that weather is the most talked-of of subjects, is it not strange that upon no other is so much ignorance displayed?

It has been said that every man is a fool or a physician at forty. Whether true or not, every sexagenarian hereabouts is a weather prophet, and their combined wisdom is, as might be seen, valueless. Every one of these worthy men, as such, is a delusion and a snare, but all have faithful followers. Uncle Zephaniah, for instance, was very impatient, to express it mildly, when I spoke of the winter of 1881-'82. The curl of his lip, the glitter of his eyes and wave of his hand, when he remarked, "As if I didn't know!" spoke volumes. Yet, in spite of his eighty years, he did not know. There is still another feature of weather wisdom, if I can call it such, that is even more remarkable—the proneness to forget the character of a season so soon after it has passed. It may be hard to believe, but many a person will stop to think when the question is put whether the great March blizzard was last year or the year before. Unless such a storm is coupled with some political

event or a great disaster, as fire or shipwreck, it passes almost directly out of mind, and its magnitude dwindles in comparison to some lesser event with which the world's history was connected. And the moral of all this is: keep a diary, swear only by it, and give nothing more than a respectful hearing to unlettered historians and weather prophets.

But if the people have changed, the country has not; and from the same woodland almanac from which they drew their facts we can draw ours. Can any one read it aright? Verily, is not Nature a tricksy author? There are the flowers that many a town dweller thinks truly report the seasons. Pshaw! Away up in Massachusetts, Bradford Torrey found over seventy plants in bloom during a November afternoon; and full well I know of a meadow where violets, bluets, dandelions, and blue-curl can be gathered, even at Christmas, and all the year round, when we have, as now (1889-'90) a typical open winter.

What of the birds? For of these and blossoms is a naturalist's year made up. The woodland almanac goes for little so far as they are concerned—unless, indeed, you have a trained ear for varying twitters. Bird music is never lacking, and I have long held it an open question if we may not spare the thrush, when there

are foxy-sparrows among the briars. So far as weather is concerned, we can not build upon our birds, and no one of our seasons lacks them. It is the whim of closet ornithologists and petty critics to assert that winter is comparatively birdless, but even this is not true. There are not so many species, but often quite as many individuals, and oftener more. Birdless, indeed! Redbirds, meadow-larks, song-sparrows, and blue jays at this moment are making merry in my garden. Notwithstanding all this, there will always be those who will strive to the end to decipher the woodland almanac, and where is he who claims not to have solved its meaning? It were well if every one spelled over a few pages of it every day. It is healthy exercise, fitting one to duties of all kinds, and never tending to sour the temper of a sane person if, at the close of threescore years and ten, he finds that he is sure of but the first lesson—there are four seasons. Weather wisdom, as we all know, meets us at every turn, and while usually irritating, occasionally proves a source of amusement. Some such experience as the following, may have been the fate of many more than I suppose.

John Blank is one of those unfortunates who desire to be thought a genius. To float with the current is beneath his dignity. Uz Gaunt described him well as one who persists in look-

ing toward the west to see the sun rise. Knowing my love for the open fields, this would-be genius has kindly treated me, of late, to innumerable accounts of recent observations of beasts, birds, reptiles, and wild life's less noble forms, and certainly the man has remarkable powers in one direction—he can misinterpret admirably. "Think of it!" he exclaimed excitedly; "here it is December, and I have heard a frog croak! It was not a springtime croak, of course, but a cry of pain, and I believe a muskrat dug it out of its winter quarters, and the sound I heard was a cry of pain." It is a wonder that he did not hear the musk-rat's chuckle over a good dinner, also. Here we have three assumptions—that frogs never sing in winter; that they habitually hibernate; and that muskrats dig them out of the mud. The aforesaid John Blank had lived forty-odd years on a farm, and did not know that frogs voluntarily sang or croaked during mild winter days. Like many another, finding that it is cold in December, he turns his back on winter sunshine.

Here are some statistics concerning frogs in winter. Previous to Oct. 20, 1889, there had been white frost, some chilly days as well as nights, and yet the frogs sang merrily on that date. There was frost, snow, and ice during the following week, and then these same frogs

were again in full chorus ; and later, in November, as late as the 19th, they rattled and piped, not only in the sheltered marshes, but among the wilted stalks of lotus in an exposed upland field. Then a long interim, when I was constantly in town, but at noon, December 19, I heard them again, and on Jan. 12, 1890, frogs of at least two species were croaking ; and, too, bees were about, snakes were sunning themselves, turtles crawled from the mud, and salamanders squatted on dead oak leaves in the full glare of an almost midsummer sun. When John Blank was told of this he looked his name ; but he was not disconcerted. "Did you ever examine the marshes in winter ?" I asked.

"Certainly not," he replied, and added : "What's to be found in frozen mud, cold water, and about dead grass ?"

"More life than you ever saw in midsummer," was the impatient reply, and with this I moved off.

Blank maintained his reputation and declined to take a hint. "Did you ever see wild violets at Christmas ?" he asked. I laughed, and assuming good-nature, said, "Come along," and started with the conceited nuisance to a sheltered meadow. The grass was not dead, although Christmas was at hand ; there were even green leaves on the sassafras sprouts ; the water was

not cold, although its surface had been frozen ; the mud was very soft. Clustered about the roots of a noble tulip tree were claytonias in bloom ; in the moist meadows were pale-blue violets, and beyond, exposed to the sweep of every chilly breeze from the west, were houstonias, and scattered here and there were single dandelions. "This," I remarked, "is no unusual matter, referable to midwinter, and ought to be familiar to you ; but you have probably not looked in the proper places for these things"; and, taking my cue from dear old Uz Gaunt, added, "don't look in the west to see the sun rise."

Then, pleading an engagement with solitude, I bade John Blank "Good-morning."

The landscape lightened as the bore disappeared. And how an hour's outing with nature soothes the irritation of an unwelcome interview ! If I were an editor, I would have a cage of frogs, with a bit of green moss and a pool of water like that now at my elbow. To this I could turn for mental refreshment the moment the retiring intruder faced the door of the sanctum. There is nothing so reviving as to contemplate a frog, or, better yet, a tree-toad. Here is one from Florida that takes the world philosophically. When it is too cool on the shady side of his home he creeps to the sunny side ; and as the sun will not stand still, the toad moves with it;

This seems too trivial to mention, but really is not. There are people in my neighborhood who growl because the sun does not shine through the north windows, and more than one old farmer who persists in shivering in the wagon-house, under protest, of course, while the wood-shed is warm and sunny. There is a chance for every man born in the world, but this same world is not to be molded to every crank's convenience. Even my tree-toad knows that a fly may be on the wrong side of the glass for him; although it took months of vain bumping of his precious head before the idea reached his brain, and even now he sometimes forgets the lesson so painfully learned. On the other hand, there is little reason to believe that John Blank will look in the sunny meadows next year for belated blossoms. If he finds one by accident in a corner of a cold upland field, it will be heralded as a great discovery.

There is another tree-toad in the frog-pen that is a happy philosopher. Of late, either the food offered is not the proper sort, or the creature habitually fasts at this time of year, which is not improbable. Be this as it may, there is no giving way to despondency because of an empty stomach, and when his companions are taking noonday naps, or recalling the outer world that once they knew, this little fellow, from the door

of his mossy cave, or perched upon a dead twig near by, sings merrily. There are doubtless some who would be stupid enough to declare it the cry of despair; but there is no trace of trouble in the sound; no tremulous quaver as though fraught with grief. It is the clear, joyous exultation of supreme content, as we hear it in the woods during bright October days. Again, perhaps those gifted with an ear for music would call the tree-toad's song a "squeak." This matters not, for when that tree-toad pipes his single note, I take an outing. My study walls vanish; the hillside and meadow, the winding creek, rolling field, and shady orchard are again, as of old, the playground of my rambing life.

A Quaker Christmas.

THE winters seemed colder, whether they were or not, when I was a boy; and some thirty years ago there was one Christmas week when it seemed as if the glacial period had suddenly returned. There was snow on the ground, and thick blue-black ice on the creeks and flooded meadows. One had not to take a circuitous route to reach whatever point he wished, and this to the boys of the neighborhood made the outdoor

world more attractive. Not an old hollow tree, even, in the treacherous swamps, but could now be reached, and so the home of every owl, coon, or opossum, was at every boy's mercy. What, then, if it were cold ! Boots and overcoat were equal to every need, and the wide and wild world was before us. There was a skeleton in my closet, nevertheless. Christmas was approaching, but never a sign of it within the walls of the old farm-house. For years it had come and gone with scarcely a mention made of the fact ; and now, having heard something of holiday festivities from city cousins, I vowed I would revolutionize the family custom in one respect. But how ? A hundred plans came as if by magic, but each was handicapped by impracticability—a condition of affairs that is very common to most men's maturer years. It must be a secret, of course. The opposition would prove formidable indeed if the matter were openly discussed. Never a Christmas had been celebrated for a full century in the old house, and why now ? But I was determined, and so it came about that I had a merry Christmas.

It was a simple matter, after all ; and how often it happens that, after days of puzzling over the impossible, an easy solution of a difficulty comes at the proper moment ! When it was time to act, all was plain enough. On one plea

or another, I went from house to house, as if the call was by mere accident, and made known my wishes to a judicious member of each family visited. All agreed to broach the subject, and so it resulted that two or more members of five families, each group in blissful ignorance of his neighbor's movements, determined to spend the day with my grandfather. It was the first surprise party in that staid Quaker neighborhood, and never before so merry a Christmas. Of course the originator was all innocence ; but the puzzled expression on his grandfather's face and the perplexity of the women-folk were fun indeed to him. "There's company coming," I remarked, as a carriage turned in the lane. "Sure enough!" remarked my aunt, who, turning to her sister, added, "And there is almost nothing for dinner." I grinned. Before the first carriage drove up to the house, a second was in sight, and the third was not far behind.

"Truly," remarked neighbor A to neighbor B, "we did not expect to meet thee here. We've been intending to drive over for some time, but the work at home prevented."

"And that is what I was about to remark ; the same impulse has moved us both." A certain small boy smiled.

"This is quite a Christmas celebration," the somewhat bewildered host replied, and no sooner

had the sound of his voice died away than neighbor C was announced ; and neighbors D and E followed in his wake. I lingered to hear the result, but did not dare show myself. My face was very red, for poor sedate grandfather was stuttering ! “ Really, truly ; this is, treally, ruly ” —I heard no more, but made a dash for the back yard. Unlucky dash ! I collided with my portly aunt, and both sprawled upon the entry floor. The company came streaming from the parlor, but what came of it I never learned. I was up and away before the mystery was solved. A rest on the far side of the barn finally restored me. Joy and fear made it a merry and mad Christmas both, but the point was gained. The monotony of winter farm-life was broken—very much broken, in fact—for now the tables were turned, and voices were calling for me, some in persuasive, some in authoritative, tones. At last I responded ; and oh ! what relief, when the one thing needed was to run down chickens. “ How many ? ” I quietly asked, “ a dozen ? ” It was an unfortunate question. A glitter, full of meaning, flashed in the eyes of my portly aunt. She held me responsible for the day’s excitement and extra labor, and I knew it ; but I grinned whenever I caught glimpses of the gathered neighbors, who could not cease to wonder over the strange coincidence.

Dinner was served in due time. It took two tables to seat the guests, and the old kitchen was full for once. All went well until the portly lady, who still smarted from her fall, asked of me "what all this meant ? "

" What does what mean ? " I asked in reply.

" That all these friends should happen here to-day ? "

" How should I know ? " I asked.

" Thee does know all about it," the old lady insisted, and so a confession was forced. What else could I do ? Twenty curious faces were centered upon me, and the truth came out.

" Never mind, never mind ! " chimed in my good grandfather, at the proper moment. " I was sure a committee was about to take me to task for some offense, and as I have come off so well, so shall he."

" That boy will make something some of these days," remarked one long-headed man ; but, alas ! his usual good judgment failed for once. That boy, so far as he is aware, has not made much since then—much worth the making ; but has, no end of blunders.

Who cares ? It was my first jolly Christmas and a complete success ; and would that the same season could once again be jolly !

A New Place to Loaf.

ONE must plow deeply nowadays to unearth novelty. The world has been written up, and that which we now read is but the echo of some well-nigh forgotten author. Many will be quick to question this, and battle for their originality, but a few days of honest search on their part among really old books will bring them to confusion. It is with living writers as with the "oldest inhabitants" who declare they never knew such weather—they had better not face statistics. Blooming orchards in January are on record, and February roses gladdened our great-grandmothers.

"Is there nothing more to be said?" I had been asking of myself as I daily tramped about the farm, or, on rainy days, ruminated in the attic in a forest of discarded furniture. The outlook, for a while, was certainly discouraging, and then suddenly the hay-mow came to mind. As a boy, I loved the hay-mow; how is it now, in my maturer years?

Spurred by the impulse of so bright a thought, I went to the stable, and with old-timed suppleness climb the straight ladder. What memories of summer days in the meadows rushed in with the odor of the heaped-up hay! A fancy, per-

haps; but even the sweet-scented vernal grass that yearly adds its charm to a single corner of one field seemed stored in the dark loft. It matters not; that corner, with its wealth of bright blossoms, the glittering sunshine of May's perfect mornings, the song of nesting thrushes, and the rose-throated grosbeak's matchless song, were plainly seen and heard. It mattered not that it was January instead of June, and the shrill north wind whispered its well-nigh forgotten warnings—summer reigned in the hay-mow. The noontide glare that webbed the dark with trembling threads of light aided my fancy, and I reveled in day-dreams.

That was a painful pleasure when the past was measured, and forty years marked off the distance between my first visit and the present. Would life have appeared as rosy-hued could I have looked as far forward as unto to-day? Perhaps not. And what of the retrospective glances that dimly discern the timid child floundering then in the half-filled mow? With what wonder were the darting swallows marked as they sped to their nests upon the rafters, and then fled through a gaping chink to the outer world! What mystery shrouded the hastening mice that ran across the mow's wide window-sill, squeaked as they met, and hurried on their way! Why would they not stop and speak to the little child?

Even then, birds and mice gave rise to strange and painful thoughts, for why, indeed, should they fear the child that longed to be their playmate? That fancy has not fled unto this day. I love them now as then, and, no longer wondering why they fear man, regret the fact almost as keenly as in days gone by.

And later, when a sturdy lad—but lazy—what a favorite hiding-place when there were distasteful tasks to be shirked! The rattle of a loose shingle to-day became the familiar calling of my name when errands were to be run, when the hated churn was ready, wood to be cut or burdens to be carried. But, like all else that this world offers, the hay-mow was not perfection. I paid dearly for my thoughtlessness more than once. There was much evidence of a busy day about the house, some thirty years ago, and at breakfast I imagined that I would be in demand; but to even think of work upon such a perfect day for idling was painful, and, as usual, I soon disappeared. But nature was perverse. Not a familiar nook about the farm responded as it usually did. Even the trees were so wrapped in their own affairs as to turn the cold shoulder. Everything went wrong, and hours before noon I longed to be called. I listened for some familiar voice or the regulation toot-toot of the dinner-horn. The old roosters about the barn crowed

in a bantering way, as if calling me the foolish boy that I was. It was irritating beyond endurance, and so, with the usual unreason of piqued youth, I crept into the hay-mow, and, while smarting from self-inflicted pain, fell asleep. Hours passed, and then, starting from a nightmare dream, I went sullenly to the house. Every one smiled as I entered. What was the matter? Every one was silent, but the secret could not be kept. A picnic party had called for me. "It is so seldom thee hears me," remarked my aunt, "that I did not think it worth my while to call thee to-day," and then every one smiled exasperatingly. No dinner, no picnic, no appetite for supper; but my eyes were opened.

It is the same hay-mow as forty years ago, when first I saw it; the same as eighty years ago, when my father watched it building, and made it his playground, if not a lazy lad's refuge. Here is the same loose floor that needs a thick mat of hay to render it safe to walk over, and, in one sense, the same dusty festoons of cobwebs clinging to every corner; while the roof, as of old, is starred with mud-wasps' nests and dotted with the swallows' masonry. My father's playground! Did he, too, I wondered, often linger here, thinking much the same thoughts and planning his life's battles while idly resting on the hay? It is not upon record, nor need be, but

the old hay-mow bears testimony to his one-time presence here. Flinging open the heavy shutter of the south window, I glanced at the shining oaken sill and frame. Both were covered with rudely carved letters, initials of many a lad long since grown to manhood, and not one of them now living. How closely I was linked to a long-gone past ! In the bright sunshine of this January day there was no trace of winter in the landscape. From my outlook I saw nothing of the familiar fields and distant river so dear to my own boyhood, but that wilder valley and more rugged fields that were the pet theme of my father's stories when he charmed his hearers telling of his youth. How tame is the present when compared with what has been ! What though the world has wonderfully advanced, there is not for me, for one—and I voice many another—aught in the present, or aught that imagination conjures up as the possible future, that can charm as does the sweet calling back of days gone by.

Round about a Spring in Winter.

WE dwellers in the northern hemisphere naturally think of winter as cold, and shudder at the idea of plunging into the water at this season. The common demand is, if cold must be endured, let it at least be rid of moisture. But all animals are not of this way of thinking. To avoid the cutting blasts of the north wind, the stinging sleet, the pelting hail, and driving snow, many a creature boldly plunges in or hovers about the sparkling waters of every bubbling spring. The reason is, at such spots there is a uniform and not low temperature.

The impression is well-nigh universal that the great majority of animals, other than a few hardy birds, are asleep from autumn until spring; that they are hibernating, as it is called. It is quite true when we walk across an exposed field or follow a wood path over some high hill, such an impression will not be disturbed by anything that we see or hear; but these are not the only routes open to us. Stroll along the river shore, even when it is blocked with ice, and in the little ponds of open water you will be pretty sure to see abundant forms of life; but, better yet, stray over the meadows, where, in more senses than one, perpetual summer reigns. Break the thick

ice, if necessary, that shuts from view the shallow pool, scoop up the dead pond weeds that mat the soft mud below, and see how every bit of it teems with curious life. The brilliant dragon-flies that darted so angrily about you last summer dropped their eggs here in the water, and these, hatching, produced creatures so widely different from their parents that few people suspect any kinship. Veritable dragons, on a small scale, they are none the less active because ice and snow have shut out the sunlight. With their terrible jaws they tear to fragments in a moment every insect within their reach.

Like the dragon-flies, better known perhaps as "devil's darning-needles," there are many other insects that likewise spend their early days in the meadow pools, and, as the collector will find, every scoopful of mud and leaves will be tenanted by a range of forms, some grotesque, others graceful, and all of abounding interest.

These curious creatures have not their little world to themselves. There are many fishes continually plowing up the mud with their gristly snouts, and ready to swallow every protesting wriggler that dares show itself in spite of the nipping jaws. Whether the slim and slippery salamanders, commonly called lizards, do the same, I do not know, but they tunnel the mud and burrow under every heap of water-

soaked leaves, and are so active, be the weather what it may, that some nourishment must be taken. And there are frogs; not one of them disposed to exertion, perhaps, but none the less able to leap or burrow headlong in the yielding mud the instant they suspect danger. During the present winter I have even heard them faintly croaking at midday, but this, of course, is quite unusual.

During January not a turtle need be looked for, sunning itself, however warm may be the weather, but, like the other creatures I have named, they are not asleep. In a shallow basin, lined with the cleanest of white sand, through which bubbled an intermitting stream of sparkling water, I recently surprised a mud-turtle poking anxiously about, evidently in search of food. The creature had a lean and anxious look, and its bright eyes meant mischief, as it proved, when I reached forward to pick it up. I was bitten after a fashion, and therefore delighted, for I had never before known these turtles to be snapping, and a discovery, however insignificant, is truly delightful.

Active life, then, in many of its varied forms, can be found during the winter in the mud, sand, and water of almost every spring, and this fact very naturally has its influence round about the spot. There is no small winter bird, sparrow,

titmouse, wren, or creeper, that evidently prefers the immediate surroundings of a spring to all other spots, but every one of twenty or more delights to make daily visits to such a locality, and the sight of the green growths that crowd the water's edge prompts them all to greater cheerfulness. I have thought, than when treading the mazes of upland thickets or scanning the dreary outlook of a snow-clad field. But yesterday, more like June than January, it is true, I stood by a little spring that welled up from among the roots of an old maple, to watch the movements of a minnow that had strayed from the creek near by. While there a wee nuthatch came darting down from the trees and perched upon a projecting root, scarcely an inch above the water. It sat for a moment, like a fairy kingfisher, and then plunged into the shallow depths with all the grace of an accomplished diver. More than this, as it shook the glittering drops from its feathers upon emerging it sang sweetly. This unlooked-for conclusion of its bathing frolic was the more remarkable, as the ordinary utterance of the bird is anything but musical.

There are large birds also that frequent the springs habitually in winter, and the fact of their presence is of itself evidence that other active animal life must also abound. I refer to herons, bitterns, and I may add crows. The former two

subsist almost exclusively upon frogs and fish, while the latter are content with anything not absolutely indigestible.

How vividly I can recall my astonishment when stooping once to drink from a bubbling spring at the base of the river bluff a dark shadow passed over me, and I sprang with such a sudden motion to my feet that I lost my balance! A great blue heron, unheeding my presence or ignoring it, was slowly settling down to the very spot where I stood, and had I remained quiet it would have perched upon me, I believe. As it was, it gave an impatient flirt to its whole body, showing annoyance and not fear, and flew slowly down the river. Before I had wholly regained my composure and had time to step aside, the huge bird returned, and at once took its stand in the shallow water, as silent, motionless, erect as a sentinel is supposed to be. This was many years ago, and I have seldom failed to see them, sometimes many together, winter after winter since. The moody bittern, on the other hand, is much more disposed to migrate in autumn; but at least a single one is likely to be found on sheltered hillsides, particularly where there are springs with marshy areas surrounding them. I have learned this recently of these birds, and either have overlooked them in years past, or it is a new departure for them. It is not un-

likely that the latter should be true. Our familiar cat-bird is losing its migratory instinct very rapidly, judging from the numbers that winter in the valley of the Delaware River. I have seen several recently, and every one of them was in a green-brier thicket, and feeding on the berries of this troublesome vine.

But if there were no green things in or about the springs in winter they would be cheerless spots, after all, in spite of the many forms of animal life that we have seen frequent them. The fact that it is winter would constantly intrude if the water sparkled only among dead leaves. Happily this is not the case. At every spring I saw—and there were many of them—during a recent ramble there was an abundance of chickweed, bitter-dock, corydalis, and a species of forget-me-not; sometimes one or two of these only, and more often all of them; none in bloom, but all as fresh and bright as ever a plant in June. Then, too, in advance of the plant proper, we find the matured bloom of the skunk-cabbage—would that it had as pretty a name as the plant deserves!—with its sheath-like covering, bronze, crimson, golden, and light green, brightening many a dingy spot where dead leaves have been heaped by the winds all winter long. These fresh growths cause us to forget that the general outlook is so dreary, and give to the presence of

the abundant animal life a naturalness that would otherwise be wanting.

And not only about the springs, but in them, often choking the channels until little lakes are formed, are found many plants that know no summer of growth and then a long interval of rest. The conditions of the season are too nearly alike, and while in winter there is less increase, growth never entirely ceases, and certainly the bright green of the delicate foliage is never dulled. Anacharis, or water-weed, I find in profusion at all the larger springs ; if not, then callitriche, or water-starwort. The latter is as delicate as the finer ferns, and often conceals much of the water in which it grows, as it has both floating and submerged leaves.

In both these plants fish, frogs, and salamanders and large aquatic insects congregate, and are so effectually hidden that when standing on the side of the spring basin a person is not likely to see any living thing, and if the spirit of investigation does not move him he will go away thinking animal life is hibernating, for so indeed it is set down in many books. But it does not always do to plunge the hand in among the weeds, and so try to land whatever may be tangled in the mass you pull ashore. Some of the insects resent such interference by biting severely—the water-boatmen, or *Notonectæ*, for instance—and they

have the advantage of seeing all that is going on in the world about them, for they swim upon their backs.

A delicate and beautifully marked sunfish that is silvery white with inky black bands across it is common in the Delaware tide-water meadows, and is found nowhere else. Recently in a spring pool, where the flow of water was almost stopped by aquatic mosses, *Hyphnum* and *Fontinalis*, I found nearly a hundred of these fish gathered in a little space. All were active, and so vigorous that an abundant food supply can be presupposed; but I did not bring the microscope to bear upon this question, and it is upon minute forms of life such as would be readily overlooked by the casual observer that they subsist. But, as is everywhere the case, these fish are not free from molestation, although to the onlooker they seem to be dwelling in a paradise. There is a huge insect, murderous as a tiger, that singles them out, I have thought, from the hosts of more commonplace species which we can easily spare. It is known as a *Belostoma*, and has not, so far as I can learn, any common name. If they were better known they probably would have a dozen. They are "wide and flat-bodied aquatic insects, of more or less ovate outline, furnished with powerful flattened swimming legs," and the front ones are "fitted for seizing and holding tightly

the victims upon which they pounce." When I found the timid banded sunfish huddled together in the water moss I thought of the savage *Belo-stoma* and hunted for them. None seemed to be lurking in the moss, but just beyond, in an open space where twigs had drifted and dead leaves lay about, I found two of them, and I doubt not they were lying in wait, knowing where the fish then were and that sooner or later some would pass that way. To determine by means of crude experiments how far a water-bug has intelligence is a difficult if not impracticable undertaking, but I can assure the reader that the many I have watched in aquaria *seemed* to be very cunning, and constantly planning how they might surprise the fish, for these, on the other hand, knew the danger of their presence, and shunned them in every possible way.

It is much to be regretted, I think, that aquaria have fallen into disrepute. They are not, as has been said, failures; but if the labor of their care can not be undertaken, let him who would know more of common aquatic life not fail to occasionally ramble 'round about the springs in winter.

A Bay-Side Outing.

A COOL, gray mist overspread the wide reach of meadows, and shut from view the still wider reach of water beyond. The clouds were sullen, and with each gusty sweep of sharp east wind were dashes of chilling rain. The outlook was dismal; the more so that my companions and myself had journeyed scores of miles to reach the Pleasantville meadows. Perhaps the village itself was pleasant, but now its suburbs were forbidding. Let me misquote Euripides:

What *the morning* is to be
Human wisdom never learns.

So it proved; the east wind was soon tempered to three shorn lambs, the sun peeped out upon us from time to time, and long before noon Nature was smiling and contentment reigned.

That which most impressed me as I neared the water was the painful silence that prevailed over all the scene. Not a sound save that of one's own footsteps was to be heard. The impression of an absolutely deserted country, of a region that had been swept by a pestilence fatal even to insect life, took strong hold of me; but only for a moment. Presently; up from the tufts of tall grass rose, on every side, whistling meadow-

larks, filling the air at once with sweet sounds. How my heart leaped, my cheeks tingled! With what eagerness I strove to catch their every note! for dear to me now as, when a boy, the world daily opened up a new scene of delights, is that old, ever-new refrain of the meadow-lark—*I see you—you can't see me.*

But I did see them. To the few scattered, stunted trees they flew, and, perching at the very tops, were sharply limned against the pale-gray sky. Did I exert some subtle influence over them? Whether or not, they soon returned, and from hidden by-ways in the rank grass sang again and again, to cheer me, while at work. For not as a rambler merely, but to labor diligently, had I come so far.

Separated from the bay by a narrow strip of meadow, rises a little hillock that tall weeds would have hidden. This was one of our objective points; the other was an adjoining sand-ridge. Over the former we proposed to search for whatsoever the Indians had left behind; into the latter we proposed to dig, believing some of these people had been buried there; all this we did. The little hillock was a shell-heap, or "kitchen refuse-heap," as they are called by European archæologists. Probably nothing tells so plainly the story of the past as do these great gatherings of burned and broken shells. So re-

cent was every fire-mark, so fresh the bits of charcoal, so sharp the fragments of roasted shells, it would not have startled the relic-hunters had the Indians filed past on their way to the adjoining fishing grounds; and yet, when critically examined, this particular spot had evidently been long deserted. Careful and long-protracted search failed to bring to view any trace of other than most primitive Indian handiwork. One patient searcher, in fact, had to content himself with a few flint flakes and the tiniest bits of rude pottery; while another hunter was more fortunate and drew from the side of a deep and narrow path a pretty quartz knife; and later, two slender, shapely arrow-heads were found.

A beggarly show, perhaps, but what if our hands were not busy picking up relics; our fancies were up and doing. We had evidences and to spare that a primitive people had once dwelt here, and imagination supplied all deficiencies as to the matter of when and why and of the manner of their simple lives. Such ever is the charm of an outing like this. One has to deal so continually with stern facts in every-day life that fancy is the better company when out for a stroll. Nor need we deceive ourselves. A bit of burned clay in hand means the primitive potter in the near foreground. Given a single flake of stone, and the knife, spear, arrow, and all their be-

longings are in the hands of men who stand out boldly before us. Fancy within bounds is the twin-sister of fact, but mischief brews when she oversteps the mark. An hour with potsherds is monotonous. One longs for some more shapely trace of human handiwork, but among heaps of broken and burned shells, these are not frequent. Herein the kitchen-middens of the New Jersey coast differ, as a rule, from the former village sites in the river valleys. It would appear that the Indian's life as a coast-dweller was simplicity itself. It meant the mere gathering of food from the shallow water. No contrivances were called for, so no specialized tools were left behind, and in their annual pilgrimages to the coast, the inland people either took but little with them, or were very careful to carry back everything they had brought. No wonder, then, we grow restive when a richer harvent is promised by the mere leaping of a fence. There, in a grassy field, it was reported, Indians had been buried, and how exciting it is to know that a skeleton may be brought to light by the mere turning of the sod. It has been cruelly said that he who removes from the ground a recently buried body is a ghoul, but if we wait until the flesh has decayed, then the collector of dry bones becomes an archaeologist. It is not a fair statement; but whether true or not, we gave it no heed, but pro-

ceeded to dig. Scanning each spadeful of dirt for traces of bones, we soon found them, and all was excitement. Little by little, whole bones were exposed to view, and, following these up with the greatest care, that first of prizes to an archæologist, a skull, was secured. Later a second and a third were found. Our day was full. No, not quite full. We knew that often a bowl, trinkets, and a weapon or two were buried with the body, but nothing of the kind was found. It was a matter of dry bones only, unless we except the one instance where the upper shell of a large turtle rested on one of the skulls. This was a cap that would scarcely prove comfortable to a living person, although not without the merit of being quite water-proof.

The longest summer's day is all too short for such eventful outings; so little wonder that the early setting of the sun in February prompted our discontent. Who was ever satisfied in this world? He is a half-hearted rambler, at best, that loves to quit such work; but the night came down upon us, nevertheless. Silence brooded over the broad meadows, and the larks that had cheered us until sunset ceased to sing. Could there have been a happier combination? Meadow-larks and Indian relics; aye, even the bones of the Indians themselves; to say nothing of a soft sea-breeze and a clear sky.

Laden with valued spoils, we at last reluctantly drew near the village, and would that it had been wrapped in Egyptian darkness ! How the aged villagers scowled at us as we passed by ! The lame, the halt, the blind, all came hobbling to the front windows of their homes and hurled silent imprecations after us. What a sad ending to our happy day ! and why, forsooth ? In our innocent zeal, we had disturbed the bones of a few Indian fishermen that for centuries had been resting in perfect peace. We, the irate villagers claimed, being in full possession of good health, could withstand the fury of the outraged spirits of departed red-skins, but not so the afflicted villagers. Every rheumatic crone averred that her pains had grown to agony since we broke the sod. Invisible arrows had whizzed by their ears, and more than one sufferer had been struck, as the red marks upon their persons proved. Vengeance had gone astray and sorely pressed the innocent ; while the guilty walked without shame through the long village street. This was indeed adding insult to injury.

Speaking for myself, did I know the meaning of the word "impatience," I should have been vexed. As it was, the day deserved to be recorded in red letters.

As a lover of quiet country strolls, I had been happy beyond measure, but the way of the archæologist, it would seem, is beset with thorns.

Free for the Day.

Free for the day ! I scarce need tell the rest :
An aimless youth again, and Nature's guest.

IF magic lurks in any four words of the queen's English, it is to be looked for here. Free for the day ! Neither in books nor out of them have I met with a phrase more full of meaning, one more comprehensively suggestive. To me, eight weeks in the noisy city had seemed almost a year, and at last came a pause in my occupation and a day to myself. No decision could be reached in a reasonable time by calmly thinking the matter over, so, closing my eyes, I spun myself on one heel, determined to walk a good ten miles in whatever direction I faced when my whirling body came to rest. Fortune favored me, for I found myself looking directly toward the river. This put an end to my walking ten miles in a bee line, for the river was not one mile distant, and, except at a distant point, could not be crossed. With a light heart I made for the river, and, reaching the shore, sat in a cozy nook where driftwood had conveniently lodged. Walking is capital sport at all times, but a comfortable outlook never comes amiss, and resting at the end of one mile is as natural as at the end of a dozen. Thoreau speaks of looking seaward

while at Cape Cod and having all America behind him. I took my cue from him, and, looking only down stream and not far beyond, saw only the rippling waters. Every ripple carried its atom of the town dust from my eyes, and in an hour I saw the world again with clear vision. Something of the old self thrilled my veins, but still I was loath to leave so sweet a spot. I had no promise of better things, and, though early February, the wild words of an ancient chronicler came to mind. Wrote a mendacious Englishman in 1648, of this river—the Delaware—that it was “scituate in the best and same temper as Italy,” and goes on to say, it “is freed from the extreme cold and barrennesse of the one [New England] and heat and águish marshes of the other [Virginia]”; all of which is a (to put it mildly) mistake. And then the romancer adds, the Delaware Valley “is like Lombardy, . . . and partaketh of the healthiest aire and most excellent commodities of Europe.” Then follows a bit of nonsense about the wild beasts and agricultural capabilities. Why could not those old travelers be truthful? There is not one but deals in absurdities, and it would appear that they rounded off every paragraph with a flight of the imagination. If his account be true, reindeer and moose, as well as elk and deer, tramped these river shores but three centuries ago, and the

buffalo roamed over the Crosswicks meadows. This is extremely improbable. Moose and reindeer bones have been found, it is true, and even traces of the musk-ox, but all goes to show that it was far longer ago than three centuries. That there are traces, too, of man found associated with them goes for nothing. Such association does not bring the now arctic animals down to a recent date in this river valley, but places man in an indefinitely long ago. If there is any one fact well established, it is the antiquity of man in America, and those who, even in scientific journals, say the evidences so far are not trustworthy, and all that, utter greater absurdities than the old chronicler I have quoted.

A word more. If the author quoted had in mind such a winter as this, perhaps he can not be held as intentionally wrong as to the climate; but why need he have exaggerated? As if the round of the seasons in Jersey could be better, when they are as they should be! The truth, two hundred and odd years ago, would not have frightened a would-be settler; but such a winter as this might. The present meteorological "flummux," which plays the fool with all animate nature, is what the old-time Indians called *niske-lan*—ugly weather; and they gave it the proper name.

But hang the whole crew of historians and

scientists ! this is my holiday ! The water is very blue to-day, very rippy, and flaked here and there with a dainty bit of foam. This is running water at its best. It smells sweetest now. And what an odor that is which rises from a broad river ! The essence of the mountains many a mile away, the ooze of the black-soiled meadows over which I have just passed, the dead leaves and brushwood, and, too, the grand old trees that line the river's shore, all give up some subtle perfume, which, mingling over the river, is wafted to the shore. It intoxicates. Every breath indrawn thrills the nerves and cleanses the city-soiled fibers of our being. But let no more be said. As I stood, straight as a signal-light upon the shore, my eye caught a strange mound of bleached driftwood in the distance, and curiosity at once drew me toward it—a recently drowned cow that dogs had torn. Such possible drawbacks warn one against enthusiasm as to country odors. As for myself, I walked down stream, thinking new thoughts.

Having an odd fish in sight when by the river's side, I am never lonely. Odd fish are too plentiful in town ; never a glut of them—the proper sort—in the water. The average minnow is an endless source of amusement. Its rough and tumble existence is encouraging to striving mortals. The minnow's ingenuity is

hourly taxed to escape danger, yet never have I seen one in despair. To-day was a red-letter one in this respect. Off in a shallow pool, not two yards square, was a huge hump-backed minnow. Its spine was as twisted as a corkscrew, and its locomotion as erratic as lightning. How could such a fish secure its prey? was the question that puzzled me; and, failing to hit upon a solution, I tried to capture the fish for my aquarium. When one has neither net, line, nor other device, fishing is uncertain, except with the professional liars. I tried scooping with my hands, and have only to relate as a result that the hump-backed minnow appeared to make a springboard of its tail and leap over my hands with the grace and ease of a professional acrobat. After several attempts on my part to circumvent the minnow, it suddenly disappeared. I looked in vain for it all through the little pool. It had gone. At last I stepped back to turn to new scenes, when the humpbacked minnow leaped from a pebble on the water's edge, with about the agility of a frog! Of course, this will go the way of all fish stories; but I do not mind telling it, for all that.

It is the unexpected that happens—a remark, by the way, that dates B. C.—when the rambler has no particular quest in mind. I had almost forgotten that birds were in existence, when a large one ran along the pebbly beach, not more

than a rod before me. It was a king-rail. With the thoughtlessness characteristic of a half fool, I hurled a stone after it, with the usual result of frightening it and so losing a golden opportunity to observe a rather rare bird at a most unusual season. Why will people be such ninny-nannies? If a companion had been with me and attempted this, I would have prevented him; yet, nine times in ten, I give way to the unfortunate impulse to capture, if not destroy, the rarer creatures I meet. Had I been born without arms, I would by this time have become a naturalist. This tendency is due, without doubt, to our non-human ancestry, but will we never out-grow it?

The king-rail is a noble bird, and a few haunt the marshes all summer long, nesting where the tall grass is too rank and tangled even to tempt a restless cow. Perhaps they have in mind the danger of meddlesome mankind, and dwell in such spots accordingly. Taking the whole range of bird life into consideration, it certainly would appear that birds give a good deal of attention to such matters. And, before leaving the subject, I will add that, to be intelligible in discussing birds' ways, one must assume that they have minds akin to ours; and this leads to the suspicion on the part of some, and conviction in my own case, that the birds' mind

and that of man are too closely akin to warrant much distinction.

Birds, then, as usual, trooped to the fore as I rambled down the river. I saw nothing else, yet not a bird was in view. The old histories came to mind, and closed my eyes to other than an inner vision. "Greate stores of swannes, geese, and ducks, and huge cranes, both blue and white." Is it not exasperating to think of the change wrought in two centuries? A mile-wide river, and banks of old-time wildness still remaining, yet not a feather rests upon the one or shadow of a walking bird falls upon the other. Far and near, up and down, and high overhead I scan the country for a glimpse of some one bird, but in vain. The crows nowadays have the river to themselves, and none of these were about to-day.

The day has been a marked one for its emptiness. Tracing the river's shore for miles ought to yield rich results, but here, at my journey's end, I am empty-handed. What little I have seen has but soured my temper. It is most unwise to be ever mourning over the unrecoverable past, but how can one avoid it? Such a walk, productive of nothing worth recording, may not, I hope, be in vain, It at least provokes me to say, Can not wild life, or what little remains of it, be effectually protected? Can not swans, geese, and

ducks be induced to return? They can never prove an obstruction to navigation, so why should legislation on this point be, as at present, a mere farce? The day will never come, perhaps, when people who prefer a living to a dead bird will be acknowledged as having a claim to the wild life that would appear to be no man's peculiar property. By an overwhelming majority, mankind hold, if a creature is good to eat, it must be killed. But the insignificant minority still feel they have a claim. I would walk twenty miles to see a wild swan on the Delaware; my neighbor would walk forty if sure of shooting it.

Water birds are safe on the Back Bay in Boston, and seem to know it. I have watched them with delight, morning after morning, while dressing; but here, miles from town, you may pass a week and see no trace of even a duck. A few come and go, but there are men with guns lying in wait, both day and night. Time was when there were wild fowl and to spare—not so now; and the day is quickly coming when geese even will rank with the great auk and the dodo.

It is probably not difficult to prove that a return ramble is less suggestive, even if more objects cross our path than when we were outward bound. At the close of a long day, we are, without suspecting it, brain-weary, as well as physi-

cally tired. What interested us in the morning falls flat in the evening ; the mingled voices of many birds roused enthusiasm at sunrise, and proved irritating at sunset. It was so to-day. My one thought was to reach home, but not without lazily thinking, as I retraced my steps. I discussed with myself, as often before, that important question—how to see. Then, again, I have often been asked the same question by various people. On one occasion, I replied, "With your wits as well as your eyes." But this does not cover the ground. After all, how is a person to recognize a thrush from a sparrow among birds, or a perch from a minnow among fishes? When the question was last put, I found that I had but one course to pursue—to admit that I could not tell. The occurrence was somewhat mortifying, and I have, time and time again since then, endeavored to discuss, upon paper, this very interesting subject.

The result, to date, is flat failure ; but a history of nugatory effort may prove of some value. Can it be done ? Is there a secret, through knowledge of which a young person or an inexperienced adult can be taught to intelligently observe and correctly interpret the course of nature ? Are not those, in truth, who do see to advantage, and quickly comprehend the purport of what they see, born with a faculty that can not be ac-

quired through any course of training? I believe this to be true.

But, on the other hand, there are those who, though less favored, have their interest aroused whenever out of doors; and these are spurred to the acquisition of knowledge, however toilsome, because of the demands of that interest. Such find the pursuit of natural knowledge far from easy, but are compensated by the fact that "the play is worth the candle." With due modesty, I speak now from experience.

"How am I to know," asked my friend, "that the bird I see or hear is what it is?" I, for one, can not solve the problem. Certainly, even if our language was adequate to describe the appearance, voice, and habits of a bird, for instance, so accurately that it would instantly be recognized, it is not to be expected that any one, save a professional naturalist, will know our ornithology by heart; and even he falls very short of that. In hopes of simplifying the matter, I have been endeavoring to recall my own experiences; not that I am a trained observer, but because I can not remember when I did not know the more common objects of wild life that I met with. This knowledge—a lifelong source of pleasure—was acquired at an early age, probably because I had a naturalist-mother, who correctly explained the little mysteries that perplexed me, and, above all,

taught me to be considerate toward and respect the rights of every living creature. So it happened that I came to love even every creeping thing; and with love came knowledge. But the names of things! Until he knew its name, Thoreau looked upon a flower, however beautiful, as a stranger, and held aloof. Certainly one feels a great lift in his pursuit of knowledge as soon as he learns the name of an object; and until then, however interesting that object may be, it baffles him. Let the observer, if an adult, remember, and the child be assured, that every creature has a name, and that it can sooner or later be determined; and now what remains is to so closely examine it that, when opportunity affords to describe it to a specialist, or a description is found in a book, the creature will at once be recognized.

Years before I had access to Audubon's or Wilson's American Ornithology, I was delighted, one summer day, with a large bird that played bo-peep with me in the orchard. I watched it carefully, studied to repeat its cries, and then attempted to describe it. The bird was pronounced a creation of my imagination, and my labors rewarded with a lecture on romancing; but long afterward I recognized the bird in a museum, and found that I had seen a rare straggler from the Southern States. But nothing of all this bears

much, if any, upon my friend's question, and no definite conclusion has, perhaps, been reached; so I put myself in my friend's place, and ask, Will some one give me the information required? The more the question, as originally put, is conned over, the more it is like unto asking, How do we learn to talk? Let there be a desire for knowledge, and the problem will solve itself. And as to natural history, the earnest observer will invent names for objects, which will serve his purpose until he learns those, as in time he will, by which they have been recognized by others and are in common use. He who does this will have taken the first and most important step, and all that follows will be pleasure rather than toil.

Another phase of this subject is that of properly observing. Do we always "see straight"? I prefer this homely phrase in putting the question, because I was so often asked, when reporting the results of youthful rambles, "Did you see straight? Are you sure?" And so the familiar questions come to mind now: Have the summer tourists seen straight? Was everything they saw really as they saw it? "Can I not believe my own eyes?" is the usual reply. It is the commonly accepted opinion that we can, certainly; but may not many an error arise from such testimony? Undoubtedly; but, on the other hand, if the sight-seer is really anxious to

learn the exact truth, if he guards himself continuously against false impressions, the danger is comparatively slight, and diminishes to practically nothing by repetition of observation. It must be remembered, too, that an occurrence may be very rare, and, if observed by one not familiar with the ordinary conditions, he may be misled so far as to suppose it not unusual; but it is far from justifiable to assert that he did not "see straight."

This is particularly true in the study of nature; by which is meant, at this time, the observation of objects, animate and inanimate, as they are and where they belong, not the study of "specimens" taken from their proper places. If a bird is seen out of season, or out of place, or copies the song and manners of a far different species, the observer is not true to himself if he withholds a statement as to the fact, although others may not have been so fortunate as to witness this; and no less imperative is it to express his opinions and give his own interpretations of what he sees. To say that it is indiscreet to set his "unsupported opinion against the facts gathered by a host of observers" is simply absurd. To fail to speak out boldly is miserable cowardice; and he who advises silence because an honest conviction wars with others' opinions is contemptible. Evidently, having no opinions or

knowledge of his own, he champions the cry of the crowd, be it right or wrong. When a friend returns from a distant land, or even from a walk in the country, we do not ask concerning what we have often seen for ourselves, or know from hearsay, is a feature of the land, but of those peculiarities that particularly impress him, and his personal adventures; and, by proper questioning, a dozen ramblers over the same area will tell as many different stories. If every observer or traveler was a mere cataloguing machine what a cool welcome would each receive on his return from an outing.

How are we to know whether or not we "see straight"—whether or not we correctly interpret? Time alone will decide this; adding thereto the experiences of others. From the sum total of many observers will ultimately spring the truth, if happily we shall ever possess it; but no one experience must be suppressed. I saw the Niagara River recently where it is crossed by the suspension bridge, and the water was intensely black save where flecked with snowy foam. I had seen this river at this same spot previously, and had seen it since, and always, except this one instance, the water was deeply blue or brilliantly green. It may never have been black before, and may never be so again, but this has no bearing upon the fact that once, at least, that torrent

was as a torrent of ink. And so it certainly is in one's observations of animal life, if one is a persistent, painstaking observer. His experience will teem with unique occurrences; but they are none the less valuable and worthy of record because of their character.

We hear now and then of misconception of nature—some pretentious critic assuming that another sees what is not to be seen, hears what is not to be heard, and attributes to the lower forms of life faculties beyond their capabilities. By what authority comes this—provided absurdity does not enter into the case? Has the whole region of the United States been so ransacked by a handful of professionals that the habits of every living creature other than man are known even to the minutest details? If so, where is this vast store of learning garnered? It must still be religiously guarded by this same handful. The world at large knows this is nonsense. There have not been enough facts gathered to enable one to more than conclude tentatively. A botanist, not far away, remarked in my hearing that he had tramped over the whole neighborhood in search of sun-dews. He was positive that none grew within miles of his home. Another, with keener vision, tramped the same ground, and found them in abundance. A host of careful, earnest, and devoted observers

may be unsuccessful, but that does not prove that some one may not succeed where the others failed ; nor can the animadversions of the critical alter the fact that some one has succeeded.

Have any of those who have spent the summer in the country amused themselves by watching some one animal as it was busy with life's cares ? I hope so ; and while so doing, was the creature credited with intelligence or blind instinct ? I trust with the former. But "Stay !" shouts the critic, "do you realize the danger of loose interpretation ?" How are we to decide whether or not an animal thinks as we do ? Hereon hinges the whole matter. Obviously, it can never be demonstrated with what may be called mathematical certainty ; but the average, unbiased observer will admit that when a creature acts under given circumstances precisely as he would do, that the brain directing those movements is essentially such a brain as his own. To prove that it is something else is left with those who deny the position that I take. Animals think ; they are not mere machines ; this position is as rational as to claim it of some of the lowest existing races of mankind, for the claim is laid upon the same class of occurrences. To wander abroad, whether in the forest or on the plain, and not to look upon animate creation as endowed with intelligence—of course, of varying

degrees—is to go, not as an observer in the true sense, but as one deaf and blind. To ramble with this conviction, one will not misread the book of nature, and so be guilty of a literary crime if he gives his story to the world.

An Open Winter.

I HAVE heard or read that one may experience a sense of weariness when surrounded by the best that Nature has to offer—a cloying with too many sweets, as it were. It seems hard to believe, so rejoiced is the average rambler at the return of spring, but that it is true has recently dawned upon me, here in the wilds of Jersey, after some six weeks of merely nominal winter.

Wherever there is a little shelter from the occasional north winds, the immediate outlook is suggestive of early April, but the growing daffodils and blooming hunger-plant, dead-nettle, chick-weed, spring beauties, violets, and dandelions, do not give us a spring-tide landscape, although columbine, giant hyssop, motherwort, self-heal, yellow corydalis, alum root, false mitrewort, and star of Bethlehem, are all green in the sheltered nooks, and the waters of many a spring-basin glow as emeralds with their wealth of aquat-

ic plant life. It avails nothing that these springs and outflowing brooks teem with fish, frogs, salamanders, and spiders ; nor does it matter that the sun gives us summer heat and that birds throng the underbrush as in nesting days ; still it is winter. This is the crowning fact that colors every thought, and though we can not step but we crush a flower, winter will not be ignored. Nor would I have it so. January has its merits as well as June, and I hail with pleasure that spot where frost has gained a foothold. Here is one such spot ; a circle of dead weeds bordering one of moss, and blackberry canes in rank profusion arising as an oval mound within all. It is an odd-looking spot to-day, and sure to attract attention. It is unlike the average clump of briars, and properly should be, as it is the sorry monument to a giant that for century after century dwelt here in glory. It was my good fortune to know him well, but my misfortune to be too young to assume the roll of historian. Here stood the Pearson Oak. Perhaps my learned botanical friends may take exceptions, but I hold that this tree was nearly, if not quite, one thousand years old. How the Indian looms up when we think of such a tree ! Here was a silent witness to the every-day life of an Indian village that in part rested in the mighty shadows that it cast. And later, from one huge limb dangled

the rude pole swing that was the delight of the first of my people born in America. Being the most prominent feature of the neighborhood, this oak was brought within the boundary line of two great plantations, and the half acre beneath its branches was the common play-ground of two families. Little wonder, then, that in time it was also common courting ground. Indeed, the phrase common in several families now, referring to engaged couples, "under the oak," has reference to this tree and the engagements that arose from frequently meeting there, during the first half-century after the place was settled.

But what has this to do with winter? Nothing, perhaps, but it seemed fitting that a film of ice should cover the little pool in the circle, as frost had blighted every shrub about, when recalling that long-gone past that seems to us so rosy-hued when comparing it with the present. Ruin is stamped upon every feature of the landscape here, and it is well that the old oak that witnessed more mirth than sadness should have passed away.

To those who can walk eight furlongs and see only a milestone, winter may be a dreary season : but Nature at rest, for those who love her, is a sleeping beauty. Again, if it so happens death is everywhere about you, it should not prove repulsive. Death is the law of life, and

not a flower in June can boast greater beauty than the empty seed-pods of many a decaying plant. Shudder, if you will, at the word "skeleton," but handle that of many a creature or plant, and enthusiastic admiration is sure to follow. In June, we glory in the deadly struggle for existence that everywhere is raging; charmed by the flaunting banners, the music, the "pomp and circumstance of glorious war"; why not then be rational and cull beauty as well as profit from the battle-field when the struggle is over? If a shrub is beautiful clad in motley garb, should not its filmy ghost in silvery gray merit a passing glance?

So ran my thoughts as I crossed my neighbor's field, seeking new traces of frost's handiwork, but here I failed. The general aspect was wintry, but definite results of wintry weather could not be found. Even on cold clay soil dandelions bloomed, and tissue-ice in the wagon ruts had no discouragement for the grass that bordered it. To sum up the result, rambling in January during such winter as this is not attractive, unless one is carried away by the novelty of plants blooming out of season, or hearing sounds when he expected silence. And a word here of winter sounds. Except immediately before a snow-storm, the country is never silent. Here and there, the fields may be deserted, but

birds are somewhere, and these, of both sexes, can not keep quiet long. Of our winter birds, it can be said that they are essentially noisy, and chirp more, if they sing less, than birds in summer; and in the anomalous condition of the outdoor world, at present it was a relief to reach a hedge with its complement of birds. Their listless chirping now recalled days with the mercury near zero, when, defying the keen wind from the north, they sang a hearty welcome to the season and hailed every snow-squall as a gift from the gods. Nowhere else, however, and I walked several miles, were birds to be found, save here and there a solitary crow, and the conclusion is, that such a season drives off rather than attracts certain species, while others having no incentive to migrate, have not wandered this far south. I do not know what the result of observation in general has been, but certainly over my own rambling ground birds have been noticeably scarce. Flowers out of season are no compensation for the losses that a thoroughly open winter brings upon us; the more so, if an open winter lessens the number of our birds.

As the sun rose to-day, the thought "what splendid weather!" was uppermost, and, impelled by it, I struck across lots for the uncultivated nooks that are so pitifully few near by. The result has been given—not a single satisfactory

feature in the whole range of half a dozen miles. A little here and there to wonder over, disappointment at nearly every turn ; more, many more somber than merry thoughts ; and not one successful effort at thinking any thought to a logical conclusion. To what is this due ? Without doubt, to the "open" season. Nor is it strange. In no respect is nature soul-satisfying when unseasonable. A cool June morning is not a contradiction, and is delightful ; but sultry January days are an utter abomination. Midwinter kicks over the traces when daffodils sport in January sunshine, as they are doing this morning about the crooked maple wherein I sit and write. The truth is, the present conditions offer no pronounced feature of the open country ; nothing hot or cold, but all in that lukewarm condition tending to nausea. Nor is this feeling of dissatisfaction that takes so strong a hold upon mankind confined thereto. It is seen in half the creatures that one meets. A meadow-mouse is no sluggard at other times, and a lazy deer-mouse is a contradiction ; but with what measured steps and slow a mouse comes hobbling over the dead leaves about the maple I am perched in ! The creature looks at the sky, then at the ground, and finally at a sorry shrub with seedless pods. Not a bit of animation in its motions, but the same dejected feelings I recognize in myself

evidently held the mouse in bondage. Then I moved suddenly, but the creature merely looked up, as if surprised at so much energy on my part. This was irritating, so I sprang cat-like to the ground, but only to find the mouse just out of reach and evidently not alarmed. Climbing again into the maple, I awaited further developments, and saw at last a white-footed or deer-mouse that seemed to me to drop from branch to branch, as it descended from its bush nest, a dozen feet from the ground. This was indeed discouraging. Usually there is no more graceful sight in the woods, during autumn or winter, than that of this dainty mammal, picking its way a-down a crooked highway of a tangled brier-patch. It is a sight sure to be recorded in full in my note-books, as every time I witness it some new grace marks the event, so I anticipated the old delight when I caught my first glimpse of the mouse, and such a result !

It is true that if one's feelings are out of tune, there may be a distorted vision, but not so to-day. The world was askew, and has been since the first frost, for whoever knew the crows to be silent—positively silent, as compared with crows—on a crisp, frosty morning? There were forty, by count, that flew over the maple, and only one gave tongue. Here I may be charged with fancy, but that one crow gave out no ringing *caw*,

that is music to him who loves the country. It was rather a fretful, long-drawn *pshaw!* and fittingly voiced the surroundings.

A winter in the tropics may be very delightful, but an "open" winter in New Jersey is an utter abomination.

A Foggy Morning.

WE know too little of the world except when bathed in sunshine. Not that I recognize any advantage in groping in darkness—this is too like dogmatizing on a theory; but between the obscurity of night and brilliancy of the day there are happy mediums, too commonly neglected. I have lately been wandering through a thick fog. Not a metaphysical, but a material one; nor was it gloomy. The fog was thick, yet through it streamed the level rays of the rising sun, gilding the topmost twigs of the forest trees, roofing with gold a trackless wild beneath. So changed for an hour or more was every long-familiar scene that, as I wandered, I was a stranger in a strange land.

The late John Cassin, the ornithologist, has left on record how a vast multitude of crows tarried for some time in Independence Square,

Philadelphia, having, after leaving their roosting grounds, lost their reckoning in a dense fog. He tells us how the masses obeyed a few leaders, and how methodically they all departed, led by their appointed scouts. It was an incident that thrilled him more than all else that he had witnessed; and none knew our birds in their homes better than he.

The bewildered crows this morning recalled this story, for the poor birds were in a hopeless plight. Perhaps their leaders were at loggerheads, or, being none, it was a case of each for himself and ill-luck catch the hindmost. Be this as it may, their party-cries filled the misty air and relieved me of all feeling of loneliness. From the open meadows I ventured into a gloomy wood, leaving the crows to solve their own problems. Here the fog proved an enormous lens, and, at the same time obscuring the tops of even dwarfed undergrowth, made them appear as trees, and the taller grasses that had withstood the winter were as shrubbery. It was this most strange effect that made my old playground as a land unknown. But as the wild cries of the troubled crows grew faint, the sense of loneliness, against which one naturally rebels, assumed mastery, and I longed for at least sunlight, that the familiar trees might be stripped of their masks. One's own thoughts should be acceptable com-

pany at all times, but mine are not in the gray of a winter morning, and fog-wrapped at that. Nevertheless, longing as I did for others' voices, I protested then and there against my dependence upon bird-life. "Are there no other creatures astir?" I asked, and pushed on yet deeper, where the old oaks were clustered. Into whatever seemed a shelter I peered, and often thrust my arm, in hopes of feeling some furry yet not too responsive mass. Nothing resented my unmannered intrusion. Then into sundry hollow trees I thrust my cane, thinking at least an owl might be roused from his slumbers: but ill-luck attended me.

A little later, as the sun rose fairly high, the upper fog descended, and so far increased the gloom in the forest; but beyond it, as I looked down a long wood-path, I saw the cold gray light that brightened the outer world. Among the trees there was no dispelling force, and the fog became denser, until, overcome by its own weight, it turned to rain, and such a shower! The mists of the open air had fled, while through the woods the rain-drops, touched with a mellow light, shone as molten metal. Rebounding from the interlacing twigs above and the carpet of matted leaves below, these golden drops rang up, as might a myriad of bells, the laggard life about me. Rang up the timid shrews, and one darted among

the dead leaves and moss, as though hotly pursued ; aroused the squirrels, and creeping stealthily down an oak's extended arms, a pair passed by, thinking by their cunning to escape my notice ; called forth a white-footed mouse, daintiest of all our mammals, that picked its tortuous way to the meadow from its bush-nest in the briars. What folly to suppose there is no life about you because it eludes your search ! The quickening rays of the sun have keener vision than any man, however gifted in woodcraft, and these to-day peered directly into every creature's lair.

I might have searched in vain for half a day, yet found nothing among the trees. Even the nest of the mouse in the bushes I had mistaken for a cluster of thorn-pierced autumn leaves. It would seem as if every creature anticipated the possible visit of a Paul Pry, and was cunning enough to outwit him. The greater the effort made by the intruder, the less are his chances of seeing much. Let him be patient. Often a moment or two spent leaning against a tree effects more than a mile of noisy plowing through the brittle, crackling leaves. The careless snapping of a twig may not startle you, but it telegraphs your whereabouts to creatures many a rod away. How do I know this ? In this way : Not long since I was watching a weasel as it tipped along the rough rails of an old worm fence. It was

intently engaged, following the trail of a ground squirrel perhaps. Suddenly, as if shot, it stood in a half-erect posture; turned its head quickly from one side to the other; then rested one ear on or very near the rail, as I thought; then re-assumed a semi-erect position, gave a quick, bark-like cry, and disappeared. There was no mistaking the meaning of every movement. The animal had heard a suspicious sound, and recognizing it as fraught with danger, promptly sought safety.

Extremely curious myself to learn what the weasel had heard, for I was sure it was the sound of an approaching object, I sat perfectly still, awaiting coming events. The mystery was quickly solved; a man drew near. In about two minutes I heard footsteps, and in two more saw the man approaching. Calculating the element of time in the succession of events, it appeared that the weasel heard the approaching footsteps first, fully one minute before I did, and about six elapsed before the man reached me from the time of the weasel's disappearance; in all, some seven minutes. Now, allowing twenty paces to the minute and two and one half feet to the pace, this man was considerably more than one hundred yards distant. Indeed, I think he was walking faster and took longer steps than I have allowed in my calculation, and was really still farther away

than 116 yards when the weasel caught the sound of his approach. Is it any wonder, then, that the woods seem silent as we saunter carelessly along?

The question now arises, Can any animal distinguish between the sounds of the footsteps of our many wild and domestic animals? Can any one of them recognize the difference between the steps of a man, fox, cow, or rat? Now, a weasel, for instance, would not fear a cow or a sheep, but would flee ordinarily from a man or a dog, and so such power of discrimination would be very useful to it. I am positive that they can distinguish, in the manner pointed out, between friend and foe, and so are not required to seek safety at every unusual sound. I know that the most dolorous screeching made by branches rubbing together whenever the wind blew had no terror for squirrels or rabbits, yet they must have trembled when they first heard it; I remember very well that I did. That fish can recognize the approach of a man and will hide, and yet pay not the slightest attention to galloping horses or tramping cattle that come near, is well known; and I can see no reason to deny a like discriminating ability to those animals whose very existence depends upon it. The fact that such a power is the mainspring of their safety is of itself a warrant for our belief that they possess it.

And from what I have observed of animal life, I am further convinced that the power grows with the animal's growth; hence the necessity of the young remaining, as they do, with their parents until well matured. The sense of hearing in a weasel, raccoon, or other creature is one that develops, and doubtless varies, in efficiency among individuals. There is no cut-and-dried instinct about it. I have often thought how much there is in the saying common among trappers concerning very cunning animals of any kind, "He is too old to be caught." As chance has offered, I have experimented upon our wild animals as to this very point, and though the results were largely negative, there was nothing in them that showed my inference, or conviction rather, to be untrue; and, on the other hand, much that pointed unmistakably the other way.

But what of the clearing fog? True enough, I have drifted from it, and it has passed earthward and away. So may it ever be! Let but a bird pass by, singing or silent, it matters not; let but the shadow of a fleeing creature cross my path, and clouds, sunshine, storm, or fairest weather are alike one.

The Old Farm's Wood-Pile.

"In winter's tedious nights sit by the fire
With good old folks, and let them tell thee tales
Of woful ages long ago."

THIS was my wont just forty years age ; but such nights were never tedious ; nor were the ages woful of which the old folks chatted. Sitting by the fire to-night, I am led to contemplate, not so much the heaped-up logs and cheerful blaze before me as that other feature of days gone by, the old farm's wood-pile.

Recalling both what I saw and heard when a lad of a few summers, I am startled to find that, one after the other, the prominent features of my childhood's days have largely disappeared. Improved farm machinery may delight the economist, but its introduction has added no new charm to country life, and robbed it of more than one. Was there not a subtle something in the swish of the scythe to be preferred to the click of the modern mower ? Harvest comes and goes now without a ripple of excitement upon the farm. A hum of the reaper for a few hours, and the work is done. A portable steam-engine puffs in the field for a day, and the thrashing is over. But what a long series of delights, at least to the onlooker, when grain was cradled,

shocked, and then carted to the barn! And, later, far in the winter, what music was the measured thumping of the flails!

In due course came the present order, the natural outcome of relentless evolution, and it is affectation to decry it. Mankind in the long run has been benefited, and all should be thankful. But with these major changes have come minor ones that I trust can be mourned without risking a charge of silliness. I need not name them. Mention of any one calls up the rest, so closely related were they all. Who can think of the old wood-pile, a maze of gnarly sticks, huge chopping-log, and the rudely hafted axe, without a vision also of the old kitchen with its cavernous fireplace, and, just outside the door, the mossy well with its ungainly sweep! All these were practically out of date in my time, but here and there were retained on more than one old farm I knew, and are still in use within walking distance of my home.

To many, perhaps, a wood-pile is but a pile of wood; but it is something more. Can you not see that the ground is depressed, as though the earth had been beaten down by the continued blows of axe and beetle? Do you not notice that the outlying weeds are different from those that are scattered elsewhere about the door-yard? Here, there is not only a wood-pile now,

but there has been one for many a long year, perhaps for more than a century. Turn up the soil and you will find it black ; examine it with a lens, and you will find it filled with wood fiber in every stage of decomposition. Dig deeper, and you will find many a relic of a by-gone generation. Pewter buttons that once shone like silver, the pride of beaux who, though Quakers, loved a smart-looking coat ; buckles worn at the knee and upon the shoes ; bits of spectacle rims that once held circular glasses of enormous diameter ; a thousand odds and ends, indeed, of metal, glass, and china, discarded, one by one, as they were broken ; for the wood-pile was a dust-heap as well, and the last resting-place of every small object that could not be burned.

My own earliest recollection of outdoor sport is of "playing house" about the generous heap of gnarly logs and crooked branches that had been brought from the woods during the winter. At some convenient corner the loose earth would be scooped away, water brought until the hollow was filled, and a long row of mud pies molded in clamshells, the product of a happy morning's work. It was usually when thus engaged that some curious object would be brought to light and referred for explanation to the wood-chopper, if he were present. I can see two old men now, whose sole occupation in their later years, so far

as I can recall, was to split wood. These two men, Uz Gaunt and Miles Overfield, were "master hands with an axe," as they promptly said of themselves. With one foot resting upon the chopping-block, and leaning upon his axe, Uz or Miles would critically examine whatever I had found ; and then, after silently gazing into the distance to recall the past, with what an air of wisdom would the information be forthcoming ! Nor would either of these old men ever promptly resume his labor. Such an interruption was sure to call up a flood of memories, and delightful stories of long ago made me quite forget my play. Nothing that my own or another's brain could suggest ever equaled in interest these old men's stories. I can not clearly recall a single one of them now, but simply the effect they produced and the sad fact that, in their estimation, the present never favorably compared with the days when they were young. And is it not ever so ? If I have learned nothing else since then I have learned this—that the glorious future to which as a child I looked forward has proved everything but what my fancy painted.

There was a comic side to my interviews with the wood-choppers which I recall even now with grim satisfaction, for I think it was right that I outwitted an unreasonably cross-grained aunt. Often my heart was sorely troubled be-

cause, in the midst of a most exciting story, Aunt would call out, "Thee is hindering Miles at his work; he doesn't like to be bothered;" all of which was in the interest of the work being done, and not Miles's comfort. Not like to be bothered, indeed! Neither he nor Uz disapproved of loitering, for both were old, and Aunt knew this as well as they. Before summer was over, a stratagem was devised that succeeded admirably. I had merely to take my place on the off side of the wood-pile, where I was quite out of sight, and Miles or Uz would work, oh, so diligently! at the light wood for half a day, which needed next to no exertion, and all the while could talk as freely as when taking his nooning. Perhaps it was not well, but, young as I then was, I learned that in human nature the real and the apparent are too often as widely apart as the poles.

The wild life that forty years ago lurked in the woods and swamps of the old farm was not different from what is still to be found there, but there has been a great decrease in the numbers of many forms. The wild cat and fox, perhaps, may be considered as really extinct, although both are reported at long intervals in the immediate neighborhood. These, it is certain, are stragglers—the former from the mountains to north, the latter from the pine regions toward

the sea-coast. But it has not been long since the raccoon was regularly hunted during the moonlit winter nights and the opossum found security in half the hollow trees along the hill-side. The dreaded skunk was then abundant. None of these, however, can be said to be of common occurrence now, and their discovery produces a ripple of excitement at present, while in my early days their capture excited scarcely a word of comment. Then the old wood-pile was not infrequently the hiding-place of one or more of these "varmints," which raided the hen-roost, kept the old dog in a fever of excitement, and baffled the trapping skill of the oldest "hands" upon the farm. Now, at best, when the last sticks are cut and stored in the woodshed, the burrow of a rat is all we find.

With what glee do I still recall an autumn evening, years ago, when the unusually furious barking of the old mastiff brought the whole family to the door! In the dim twilight the dog could be seen dashing at and retreating from the wood-pile, and at once the meaning of the hubbub was apparent. Some creature had taken refuge there. A lantern was brought, and as every man wished to be the hero of the hour, my aunt held the light. The wood-pile was surrounded; every stick was quickly overturned, and finally a skunk was dislodged. Confused or attracted by

the light, I do not know which, the "varmint" made straightway for the ample skirts of the old lady, followed by the dog, and, in a second, skunk, dog, lady, and lantern were one indistinguishable mass, My aunt proved the heroine of the evening, nor did the men object. I often pause at the very spot, and fancy that "the scent of the roses" doth "hang round it still."

A wood-pile, if it be not too near the house, has many attractions for birds of various kinds, and I am at a loss to know why the whip-poor-will should, of recent years, have forsaken it. Formerly, the first of these birds heard in early spring was that which perched upon the topmost stick and whistled his trisyllabic monologue from dark to dawn. Now they frequent only the retired woodland tracts. Various insect-eating birds continually come and go, attracted by the food they find in the decayed wood, but the house-wren remains throughout its summer sojourn here—that is, from April to October; while during the colder months the winter wren takes the other's place. These little brown birds are exceedingly alike in appearance, in habits, and in size, and I shall never forget my communicating the fact that they were not the same to Miles Overfield. It was almost my last conversation with him.

"Not the same?" he exclaimed. "You

might as well tell me that a snowbird isn't a chippy in its winter dress!"

"They are not, indeed!" I replied, astonished to hear so remarkable a statement.

"So you set up book-learnin' against me about such things as that, eh?" Miles remarked, with unlimited scorn in both his voice and manner; and from that time I lost favor in his eyes. Such crude ideas concerning our common birds are still very common, nor is it to be wondered at. Knowledge of local natural history is still at a discount. Is there a country school where even its barest rudiments are taught?

The heaped-up logs that, burning brightly, made cheery my room when I sat down for a quiet evening's meditation, are now a bed of ashes and lurid coals. They typify the modern wood-piles about our farms—mere heaps of refuse sticks and windfall branches of our dooryard trees. Fit for kindling, perhaps, but never for a generous fire upon an open hearth. As I linger over them, the irrecoverable past, with all its pleasures to the fore, comes back with painful vividness. The fantastic shapes of the ruddy coals, the caverns in the loose ashes, the shadows of the andirons, the filmy thread of smoke, are a landscape to my fancy, upon which my eyes can never dwell again. In the faint moaning of the wind that fills the chimney corner I hear a voice,

long stilled, whose music led me dancing through the world. Place and people are alike changed. "All, all are gone, the old familiar faces."

PART II.
IN SPRING.

The April Moon.

OF the thirteen moons of the year, not one is of such significance to the outdoor naturalist as that of April. I think that there can be no doubt but that a clear sky, rather than temperature, is the important factor in the migratory movement of our birds that come from the South in spring. Certainly the morning of April 14th, of this year, was cool enough to have retarded birds sensitive to cold. Ice formed on shallow ponds and a heavy frost rested upon all the upland fields; yet at sunrise the old beeches were alive with those beautiful birds, the yellow red-polled warblers. Nor were they numb or dumb. There was not an instant that they rested, nor a moment that they did not sing. The April moon, too, has the merit of brightening the marshes, when in fullest force the frog-world comes to the fore, and per-

haps never are these slimy batrachians so noisy as when the night is warm, the sky clear, and the moon full in April. Take a midnight ramble then, and see if I am not right. Of course, no one wishes to be confined to the company of croaking frogs, but other creatures will doubtless cross your path, and I assume the reader does not live in an utterly desolate region. My reference to frogs may seem to imply contempt, but it is not deserved. If they are not overwise, neither are they wholly stupid, and it is well for all men to be chary of their judgments. There are times and occasions when a frog may outwit a philosopher. Try to catch one on slippery mud, and see which sprawls the more gracefully.

I recently rambled for half a night over acres of wild marsh, and, while I often wished myself at home or that I could grasp the arm of a friend, yet am heartily glad, now that it is over, that I undertook to trespass upon the haunts of owls, frogs, bitterns, and a host of minor creatures. But let me be more explicit, and a word further concerning frogs. In the tide marshes, where the shallow water has been warmed by the noon-day sun, the pretty little *hylodes* were holding high carnival. I strolled leisurely, at this stage of my ramble, to the water's edge, but only to find that the creatures could only be heard, not seen ; unless, indeed, the trembling specks upon the

glimmering pools, which faded out at my approach, were they. The piercing shrillness of their united songs was something wonderful. It was not so much a chorus as the wildest orgies of Lilliputian fifers. At times the song of this same frog is the sharp clicking of a castanet, hence their name in zoölogy, *Acris crepitans*, but none were crepitating that night. Yesterday I waded into a wet meadow and crouched upon a projecting hassock. Thousands of the fiving frogs were about me, but I could see none. I long sat there, hoping that my patience would be rewarded in time, and so it was. At last one came cautiously from its hiding-place in the submerged grass, thrusting but its head above the water's surface, and scanned closely its surroundings. It eyed me most suspiciously, and then slowly crawled out upon outreaching grass until quite above the water. It seemed very long before it was suited to its perch but when comfortably fixed, appeared to gulp in a great mouthful of air; in fact, must have done so, for immediately an enormous globular sac formed beneath its lower jaw. The sunlight being favorable, I could see that the sac contained about two drops of water. Then the fiving commenced. The motion of the mouth was too slight to be detected, but the membranous globe decreased or increased with each utterance. At no time

did it wholly disappear. Noting so much, I then moved slightly to attract the creature's attention. Immediately it ceased fising, but the sac remained slightly diminished in size. As I was again perfectly quiet, its confidence returned, and the shrill monotonous "peep!" was resumed, but pitched in even a higher key, as though to make good the loss of time my slight interference had caused.

When Peter Kalm, the Swedish naturalist, was studying the natural history of New Jersey, he was much struck with the noises made by certain small frogs which he heard, and supposed that he saw; but it would appear, from a recent study of the subject by Prof. Garman, of Cambridge, Mass. that Kalm attributed the voices of one species to a very different and much larger frog. The reasons given for this opinion by Prof. Garman are conclusive; that author remarks; "Apparently the frog Kalm heard was not the one he caught. The cry is that of *Hyla Pickeringii*; the frog taken was probably . . . the leopard, frog." So far, Garman; but I am convinced my friend is mistaken, and that Kalm heard the shrill peeping of the little *Acris crepitans*, which is extraordinarily abundant, while, in the locality where Kalm was, Pickering's *hyla* is comparatively rare.

I lingered long by the resounding marsh—so

long that the chilly damp provoked an aguish pain, and admonished by it I turned toward the leafless trees upon the bluff, where I hoped to find a drier atmosphere. The moon was well upon her westward course when I reached higher ground, and what a change from the open meadows to gloomy woodland ! The dark shadows of noonday are not repeated during a moonlit night. They are not only less distinct, but quivering, as though they, too, shivered as the air grew cold. It is not strange that one peoples the distance then with uncouth shapes, and sees a monster wherever moves a mite. However one may argue to himself that this is the same wood-path down which he daily passes without a thought, and that since sunset no strange creatures can have come upon the scene, he sees a dozen such, it may be, in spite of every effort to laugh them out of existence. Let a spider crawl over your face at noon, and you brush the creature from you almost unconsciously. Let a filmy cobweb rest upon your damp forehead at midnight, and you struggle to be rid of it, as though bound with a rope. The mingled sounds of myriad frogs, the hooting of owls, the rustling leaves beneath the shrew's light tread, even the chirping of a dreaming bird, can not assure you. Every tree is the ambush of a lurking elf ; ghosts and hobgoblins follow in your steps. I have abun-

dant sympathy for those who, walking through moonlit woods, whistle to keep their courage up.

Such, in a measure, were my own feelings until I reached a glade where the light fell softly upon the wind-swept sod. There the immaterial world vanished, and I was no longer the companion of uncanny sprites. Resting from a long journey, yet not disposed to sleep, a pair of woodcocks stalked leisurely across my path without deigning to notice my approach. I drew back a pace or two, and watched them pass by. They did not leave the glade, but seemed to be scanning every foot of it, perhaps discussing its merits as a summer resort. Then first one and then the other took a short upward and circuitous flight, and in a few seconds returned. This was frequently done. Was it to hail passing migrants? I ask this seriously, for I have known several pairs to frequent a cluster of rhododendrons all through the month of March, and yet none nested until late in April: *per contra*, I have found their eggs in February. The movements of this pair, as I saw them, were mysterious, but I could do nothing in so uncertain a light toward unraveling the mystery, and contented myself with attracting their attention. I whistled shrilly but a single note, and as if shot the birds came to a halt. I whistled again, and they drew nearer to me, as I thought; but if so,

I became no mystery to them, and upward and outward over the meadows, with a great whirring of their wings, they vanished.

This was so trivial an incident that, had it no sequel, would not be worthy of record. I have said I whistled shrilly a single note. It roused a sleeping cardinal near by, which straightened its crest, shook out its rumpled down, stared into vacant space, and whistled in return. I quickly replied, and so we had the woods to echo with our calls. "What can the matter be?" asked another and another of these birds, until the whole hillside sounded with their cries. I was lonely no longer. The moon shone with added luster, the grawsome shadows of the dwarfed cedars fled, and, but for the twinkling of a million stars, I might have thought it day. But the pleasing fancy was of short duration. Bird after bird resumed its slumbers. Silence and a deeper gloom reigned in the forest, nor did my heart cease to beat nervously until I reached my home.

Concerning Small Owls.

IT may be April according to the almanac, and yet midwinter, judging by the thermometer; and perhaps, as a rule, March winds continue

their chilly gustiness until the fourth month is well advanced. I have scoured a weather-wise neighborhood for some "saying" about this feature of our climate, but gathered nothing not absolutely childish; but, if so run the days, the nights of April have a merit peculiarly their own; by the light of the waxing moon, let the temperature be high or low, the north-bound migratory birds begin to come. I saw a few of them during the last week in March; but it was when the April moon was eight days old that field sparrows trooped hitherward by thousands, and how the bare upland fields rang with their glee!

There is another happy feature of spring's initial days. The winds, be they never so boisterous from dawn to sunset, rest during the night, and nocturnal life rejoices. What a mighty volume of sound arises from the marshes when the wind-tossed waters are at rest! The tiny hylodes, the smallest of our frogs, is fairly ecstatic now, and, were there no other voices to be heard, this creature alone would dispel all feeling of loneliness.

But what of a ramble during an April night? After an almost tempestuous day, there was little promise of anything akin to adventure, judging the landscape from my open door. However confirmed in the strolling habit might be the saunterer, rambling at night, with but frogs

for company, is scarcely tempting, even though the moon shines brilliantly. Then, it occurred to me, is it not enough that the wind had ceased, and that out-of-doors it is something more than merely April in name? Therefore, expecting little and hoping less, I ventured abroad, directing my steps, as usual, meadow-ward. And it was not with, as might seem at first, an altogether undesirable and non-receptive frame of mind. One is far more likely to be content with little, and not wholly disappointed if his walk proves without adventure. But the latter is seldom or never the result. It is a strange night that finds the whole world asleep. Certainly I never found it so before, and did not to-night. By the pale light of the cloud-wrapped moon, stately herons wended their way from the river to the meadows, and twice a little owl hooted at me as I passed by the hollow hickory that stands as a lonely sentinel in the midst of a wide reach of pasture. Here was an instance when to be hooted at was a positive pleasure. The little owlet questioned the propriety of my being abroad at night, nor was he at all mealy-mouthed. He did not complain merely, but scolded unmistakably; and hovering above me as well as when flitting from branch to branch, he snapped his little beak most viciously. It was evident that fear of myself did not influence the owl at all, but he was provoked

because my presence interfered with his plans. The bird knew well enough that I would keep the mice away by standing in full sight out in the open meadow. I have been puzzled, at times, to interpret the chirps and twitters of excited birds, and this irate little owl cried "Get out!" as plainly as man could speak it, and I got out.

In all works treating of the intelligence of animals there is much said of the mental status of parrots, and little or nothing of the mother-wit of owls. Why this oversight is a mystery, unless it arises from the fact that "from the nocturnal preferences of most owls their habits are very slightly known, and many interesting facts are doubtless to be discovered in this direction. More often heard than seen, even their notes are only imperfectly known as yet." Notwithstanding this, owls are well known in a general way—better known, indeed, than any other family of birds. Their appearance is striking, their expression intelligent, and that they were selected, in ancient and more poetical times, as the emblem of wisdom, is not to be wondered at. The bird of Minerva does not belie its looks. To speak of an owl's wisdom in a Pickwickian sense, is to publish one's own ignorance. I would that I might venture to give in merited detail an account of the wise doings, if not sayings, of little red owls that I have held captives

for months. And, better yet, narrate the summer histories of owls at freedom that nested in the old orchard. Or write of the cunning ways of the handsome barn-owls, those beautiful cosmopolite birds, that made their home in a hollow oak upon an upland field.

To do this would be to place our common owls where, in the scale of intelligence, they rightfully belong. Of all our birds, they are the least governed by mere impulse, and pass their days, as it has appeared to me, in a most methodical and reasonable manner. It has been admitted by many a traveler that to shoot a monkey was too like murder; they could not do it. Would that every farmer in the land had the same feeling with reference to the owls; for the same reason holds good, only to a less extent.

It is true that we know very little about the various cries of owls, but every country lad, at least, knows that the bird's utterances are not merely slight variations of a typical hoot, or the *to-whit to-whoo* of the poets. Well I remember how, evening after evening, when in camp in southern Ohio, the great horned owls made night melancholy rather than hideous, by their sonorous *hoo-hoo-hoo!* At first afar off, and then nearer and clearer, sounded their incessant call, as, flitting from one tall sycamore to another, they slowly approached the red glare of the

camp-fire. Their hooting varied not a whit, but merely grew more distinct, and for long I thought them capable of no other utterance, but how great an error this was evident, when at last one of these huge birds perched in the oak that sheltered my tent. The melancholy *hoo-hoo-hoo!* was the same, but with this were a host of minor notes, and these were once followed by a series of explosive, ill-tempered ejaculations when the little red owls that had their home in this same oak scolded without ceasing at the intrusion. I can liken the hubbub to nothing but the subdued clamor of excited geese. In like manner I was scolded by the little owl on the meadow hickory. The moonlit September night on the bluff of Brush Creek was vividly recalled.

Owls need but to be more closely studied, and, if in confinement, to be treated with kindness and attended by one person, to demonstrate that all the wisdom seeming to lurk behind their expressive faces is really there. In matters of animal intelligence I know that I am heterodox, for I give the crow prominence equal to the parrot, and strongly doubt if owls should stand much behind them.

A Hidden Highway.

A WIDE tract of meadows that skirt the river near my home, and upon which much wealth and labor have been expended in years past, was the abode of desolation in the eyes of the sturdy settlers two hundred years ago, and so treacherous the footing in every direction—so the record runs—that the hunted bears and deer would come to a stand rather than plunge headlong into the trackless waste. With proper caution the tract was finally explored, mapped, and ditched, and now there is small chance of disaster unless the rambler is culpably negligent.

I hold that one should think kindly of a ditch. The commonly imputed repulsiveness of such a waterway is more often wanting than present, and nearly all that I have seen have teemed with interesting life. What are the brooks, indeed, that turn a poet's head, but Nature's own ditches? As to those of man's creation, they need but a little time, and they will assume every function of a natural watercourse.

As I stood recently upon rising ground overlooking a pasture meadow that was brown as a nut with its carpet of dead grass, I noticed a long, straight line of weed-like growths still showing a tinge of green, as if the frost had spared a nar-

row strip of the exposed tract. Viewing it from other points, it was evident that a ditch had once been dug where these ranker grasses grew, and through long neglect it had finally been choked with weeds and almost obliterated. It was a delightful discovery. Armed with a spade, a hoe, and sundry tools of greater or less efficiency, I set out to explore this one-time watercourse, thinking it child's play to move tons of matted weeds and mud. How much or how little I accomplished it matters not, but the fierce onslaught of unreasoning enthusiasm broke in the door of a zoölogical El Dorado.

Jetsam and flotsam from the yearly freshets, showers of wind-tossed autumn leaves, a forest of rank growths that revel in the mud, all had added their quota, unchecked, to the baneful work of damming the little stream, which finally had been shut from view, but, as it proved, not wholly overcome. A narrow, tube-like channel still remained, with the mud below and upon each side almost as yielding as the water itself. Here fish, turtles, and creeping things innumerable not only lived, but wended their darksome way from the open ditch not far off to the basins of the sparkling springs at the hill-foot. I had discovered a hidden highway, a busy thoroughfare that teemed with active life.

Except with those forms of life that by their

construction are solely adapted to a subterranean existence, as the earth-worm, or to a fixed one, as the oyster, we commonly associate our familiar forms of wild animals with unlimited freedom of movement, and suppose that they have the wide world before them to wander where they list; and, again, that of creatures as high in the scale as fishes and upward the supposition is that in proportion to their freedom of movement are their chances of escape when pursued. Now these, like many another common impression, are true in a general way, but fairly bristle with exceptions. For instance, there are many extremely sluggish fishes, yet what creatures are more agile and swift than the minnows in our brooks? And there are fishes that can walk on the mud with their bodies entirely out of the water. Dr. Gunther tells us that "the Barramunda is said to be in the habit of going on land, or at least on mud-flats; and this assertion appears to be borne out by the fact that it is provided with a lung. . . . It is also said to make a grunting noise, which may be heard at night for some distance."

So far Australia; and now what of New Jersey mud-flats and the fishes that frequent them? As I continued to explore the hidden highway of snakes, turtles, and fishes, I found in almost every spadeful of mud and matted weeds

one or more brown-black fishes that were as much at home as ever an earth-worm in the firmer soil. Blunt-headed, cylindrical, thick-set, and strongly finned, these fishes were built to overcome many an obstacle that would prove insuperable to almost any other. How, indeed, they burrowed even in soft mud is not readily explained; that they do advance head-foremost into such a trackless mass is unquestionable.

How long these mud-fish tarry in such spots I can not say, but during the long-dry summer this one-time ditch must be almost as dry as dust, and then probably it is quite forsaken; but their powers of endurance may be underestimated. Of the African "*Lepidosiren*" Dr. Gunther remarks: "During the dry season specimens living in shallow waters which periodically dry up form a cavity in the mud, the inside of which they line with a protecting capsule of mucus, and from which they emerge again when the rains refill the pools inhabited by them. While they remain in this torpid state of existence the clay balls containing them are frequently dug out, and if the capsules are not broken the fishes imbedded in them can be transported to Europe, and released by being immersed in slightly tepid water."

The many mud-fishes that I tossed upon the dead grass had clearly no liking for an atmos-

pheric bath, and floundered about in a typical fish-like fashion ; but not for long. Finding no open water near, they became quiet at once when by chance they fell into some little cavity of the mud masses from which the water had not drained. All such fortunate fishes seemed quite at ease, and remained motionless where their good luck had brought them ; but the moment I attempted to pick them up they twisted like eels upon their muddy beds, and buried themselves head-foremost with a rapidity that was simply marvelous. This perhaps is what the reader would expect, but it struck me as a little strange, because, when I startled others of these fishes as they rested among the weeds or on the sand of the open ditches, they usually gave a twist of the tail that dug a pit in a twinkling, and in this the fishes sank, tail-foremost.

When in the mud these curious minnows can only feel their way, and if they procure any food at all at such a time it can only be such objects as come directly in contact with their mouths. But how different is it when these same fishes are in open water ! They are expert fly-catchers then, and capture many an insect that would be lost to a trout or chub. They have not to wait for flies to fall upon the surface, but seize those that happen to alight upon overhanging blades of grass or any projecting twig. The distance

that they will leap above the water is remarkable, the spring being preceded by a withdrawal from the object and a slight sigmoid curvature of the body, involving, I suppose, the same principle as that of a short run before jumping. Mud minnows two inches in length, which I kept in an aquarium, were proved capable of leaping above the water a distance equal to twice their length; but others, much larger, could not or would not leap so far. So far as my own observations extend, exhibitions of this leaping from the water to seize insects are not often witnessed, and it was my aquarium studies that led me to watch these fishes closely when in the muddy ponds and ditches. Once, when so engaged, I saw the following: One of these minnows, little more than an inch in length, sighted an insect at the same moment that it was seen by a huge female minnow more than thrice the other's length. The little fellow had all the advantage, however, as it was much nearer the fly, and at the proper instant away it leaped, caught the insect, and sank back—but not to the water. That hungry ogress was willing to be fed by proxy, as it were, and, permitting the little minnow to swallow the fly, she promptly swallowed both.

Tiring of the fish at last, and having long since wearied of reopening the ditch, I turned

my attention to the other creatures that I had unearthed. Among them were four species of turtles, each represented by several individuals. One of these was the Muhlenberg tortoise, the rarest of American chelonians. Probably just here, over a few hundred acres of the Delaware meadows, there are more of them than in the whole world besides. The fact of their great rarity makes them the more interesting to a naturalist; but to-day they proved exceedingly stupid, far more so than the others, which in a mild way resented my interference, and pranced over the dead grass quite energetically, reaching the nearest open ditch in good time, and to my surprise they all seemed governed by a sense of direction. They went but little if any out of their way. Not so with the "Muhlenbergs"; they seemed dazed for a long time, and finally, after much looking about, they started, the four together, in the wrong direction, and would have had a weary journey to reach open water. Again and again I faced them about, but they would not go as I wished. Such obstinate turtles I had never seen before, and I almost felt convinced that they were impelled by some common impression very different from that which actuated the others. As is often the case, I was all at sea in my efforts to interpret their purposes. Letting them alone, they waddled through the grass for

a few yards only, when they reached little pools that met all their needs.

About what time the summer birds have arrived, and golden-club blooms in the tide-water creeks, gilding the mud-flats that have so long been bare, the turtles, or three at least of our eight aquatic species, begin "sunning" themselves, as it is usually said, but they continue the practice through rainy and cloudy days. Every projecting stump, stranded fence-rail or bit of lumber capable of bearing any weight is sure to be the resting-place of one, and if there is room, of a dozen turtles. I once counted seventeen on a fence-rail, and thirty-nine on a raft-log that the freshets had stranded on the meadows. Why, at such a time, should these creatures be so timid? They certainly have no enemies about here, and their horny shields would effectually protect them if fishing mammals like the mink and otter should acquire aldermanic tastes; and yet, so far as I can determine by experimentation, there is scarcely an animal more timid than the painted or spotted water-turtle. Fear, with nothing to be afraid of, is a contradiction, and I am led to suggest that the timidity is hereditary. Something over two centuries ago the Delaware Indians hunted and fished these meadows without ceasing; and there can still be gathered the bones of such animals as they ate from the ashes of their camp-fires. Tur-

tle-bones almost equal in number those of our larger fishes. Have we a clew here to the mystery? Do the turtles of to-day inherit a fear of man? This may seem an absurdity, or verging toward it, but it is not. A critic at my elbow—a plague upon their race!—reminds me that I once commented upon the tameness of the turtles at Lake Hopatcong, in northern New Jersey, and adds, aggravatingly, that that region was a favorite resort of the Indians. If this stricture holds, then I can suggest for the Delaware Valley turtles that it is a fear, born with each generation, of the railway cars that hourly rumble over an elastic road-bed, and cause the whole meadows to tremble. Terror may seize the turtles when they feel their world shake beneath them, and this disturbance they may attribute to man's presence. This is not so rational, and I do know that turtles distinguish between men and domestic animals. They are not afraid of cows; of this I have abundant proof, although I do not accept as true the remark of Miles Overfield: "Afeard o' cattle? Not much. Why, I've seen tortles line a cow's back, when she stood flank-deep in the water."

I had noticed that the narrow, tube-like channel of the obliterated ditch grew less defined as I dug in one direction, so I paced off a rod in advance and made a cross-section. Here it could not be traced, but a half-dozen very small

openings, circular in outline, could be seen, and through some of these the water slowly trickled. I found a single mole-cricket, and attribute to it and others of its kind these little tunnels. Certainly more persistent burrowers do not exist, and I have known them to cause mischief to a mill-dam which was attributed to musk-rats. "They are," says Prof. Riley, "the true moles of the insect world, and make tortuous galleries, destroying everything that comes in their way, cutting through roots, and eating the fine underground twigs, as well as the worms and grubs, which they meet with during their burrowings."

A volume would not suffice to enumerate the invertebrate or insect-like life that lived in this dark passage-way beneath the sod; nor do we wonder at finding such low forms groping in utter darkness; but why higher animals that are found, and far more frequently, in the open air and sunlit waters should delight to crowd these same gloomy quarters, is a problem not so easily solved. We are left to conjecture, and invariably do so, and are often overwhelmed when an army of objections confront our theories. Notwithstanding this, there is a pleasure in reopening an obliterated ditch, in letting in the light upon a hidden highway, for by so doing we also let in light upon ourselves, seeing with clearer vision the wonderful world about us.

Weathercocks.

DURING a six-mile drive, recently, I passed by eleven barns, upon nine of which were weathercocks. No two, I am positive, pointed in the same direction, and only one was very near to being right. Such, at least, was the conclusion, testing them by the compass, the movement of the clouds, and the wetted fingers which my companion and myself held up. Alas ! I and my friend were at odds so far as the last test was concerned. It is little wonder that weather-prophets are so apt to be at loggerheads, if the direction of the wind admits of discussion. Could the various shapes of these weathercocks have had to do with the matter, assuming that the nine we saw were in working order ? If so, what is a reliable pattern ? I remember a remarkable wooden Indian with one foot raised as if the fellow was hopping, and with an impossible bow so held as to indicate that an arrow was about to be discharged. This wooden man obediently twirled to and fro in every passing breeze ; but you were left in a quandary as to whether the wind's direction was indicated by the uplifted foot or by the bow and arrow ; for they pointed in opposite directions. "That is the merit of the vane," once said the owner of the barn over

which this "shapeless sculpture" towered; "you can use your own judgment." Of the weather-cocks seen on our ride there were one deer, two fishes, three arrows, a wild goose, and two gilded horses at full gallop. Only the wild goose told the truth, or almost told it. Now, as each farmer judges the weather of the day by the direction of the wind, think of bringing the owners of these nine differing weathercocks together! Each puts implicit faith in his own vane, and we all know what subject is first broached when two or twenty men are gathered together. Something like this would be the classification of the unhappy nine: Two positive clear-weather folk, two hopefully ditto, and five that predicted rain before night. Put it in another way: Four men would think, if they did not call, five men fools; and, all being equally obstinate, there would be the same division whatever was discussed. So, at least, the world wags in one section of our country.

There is much more stress laid upon the direction of the wind, in this matter of the weather, than is warranted by the facts. Those deadly statistics, that are gall and wormwood to the weather-wise, prove this. Even a northeast wind may blow for three days without one drop of rain. When this happens, we hear of a "dry storm"—curious name for bright, clear days, per-

haps with a cloudless sky, that, by virtue of the cool breeze, from the east, are well-nigh perfect. Or we are told that the moon held back the water and the next storm will be doubly wet. Ay! even that Jupiter or Mars had a finger in the pie and disturbed the proper order of wind and rain, It is painful to think that so many thousands still believe that not only ourselves, but even the poor weather, is under the domination of the moon and stars. How little the planets must have to do, to trouble themselves about our little globe ! "I don't like to see that star so shiny," a wise-acre recently remarked, pointing to Venus; "it's a bad sign"; but of what, the simpleton could not or would not tell. And as to comets, or even meteors, if they are more numerous than usual, they make hundreds miserable. The truth is, that the valuable treatises upon weather, the outcome of patient study and scientific method, still go a-begging, while the crudities of weather-cranks find ready credence. And the day is still distant, I believe, when it will be otherwise.

What can not be said of weathercocks as symbols of disappointment? To how many a country-bred boy has fallen the unhappy lot of being storm-bound when a fishing frolic has been planned! My initial grief was that an April day proved stormy that should have been clear as crystal. The time, the tide, the moon, all the

essential and unessential requirements of shad-fishing in Crosswicks Creek, were favorable, and to-morrow, Saturday, I was to be one of the party. A mere onlooker, to be sure, but what mattered that? I had heard of shad-fishing all winter long, and now, being seven years old, was allowed to be one of the party. O tedious Friday! Would school never be dismissed? O endless Friday night! Had the sun forgotten to rise? And all Saturday it rained! That horrid wooden Indian, of which we have heard, fairly grinned with fiendish delight as it faced the leaden east and received the driving rain with open arms. It never moved an inch from dawn to sunset. Yes, once it moved. During a lull I slipped out-of-doors, and bribed an older lad to stone the obstinate vane. One sharp pebble mutilated the head-dress and sent the Indian spinning about, regardless of wind or weather; but when at rest again the face was looking eastward. O pestiferous weathercocks that point to the east on Saturday! ▶

Why vanes should have been so generally shaped like a crowing chanticleer as to give rise to the more common name of "weathercocks" is not easily determined. Of a few explanations seen or heard, none had a modicum of common sense. When and where, too, the first vane was set up, whether cock or arrow, is an unsolvable

problem. Possibly it is necessary to grope backward into prehistoric times; although Rütimeyer does not give the common fowl as one of the birds found in the *débris* beneath the ancient lake-dwellings of Switzerland. It may be added, too, that chickens are not weather prophets, as are geese and peacocks; notwithstanding they figure somewhat conspicuously in all animal weather-lore, and have done so since 250 B. C., if not earlier. Aratus, in his *Diosemeia*, or *Prognostics*, for instance, claims that a cock, when unusually restless or noisy, foretells a coming storm, and this nonsense is believed to-day by a fair proportion of our rural population. Of course, modifications of this are well-nigh innumerable, and one of them, when a small boy, I found useful. If a cock came to the open kitchen door, company was coming—such was the firm conviction of a trio of aunts who ruled the household. Now, company-coming meant pie or pudding, and to a small boy this means a great deal. Acting upon it, the crowing of a cock was faithfully practiced in the woods, and then, while my brother singled out a rooster and drove it to the door, I crowed lustily from behind the lilac-bushes; and the *ruse* brought pie and pudding more than once, but not too often to weaken these credulous women's faith.

I have mentioned a dry storm with the wind

due east. There was one such at the close of the first week in April, 1889. The air was exasperatingly chilly. Even the frogs in the marshes were silent, and humanity was ill-natured and despondent. While standing on the lee side of an old oak I chanced upon a glorious weathercock — one that would shame the despairing thoughts of any reasonable man. That prince of winter birds, a crested tit, sat long upon a leafless twig facing the cruel east wind, sat there and sang, clinging, as for dear life, to the swaying branch, *T'sweet here! T'sweet here!* the burden of its song; the ever-hopeful story of this incomparable bird. What if the east wind did blow? Was there not, here and there, a trembling violet in the woods; a filmy veil of white where the whitlow grasses bloomed; a flashing of the maple's ruddy fire where the fitful sunshine fell? All these gave promise to the brave-hearted bird, of spring as coming, if not quite here. Let me take the hint. Give me just such a weathercock for each day of the year.

Apple-Blossoms.

DURING the whole of April, the old apple-trees in the lane are closely watched, and not without a deal of impatience, too. "Will they blossom freely?" is asked almost daily, and what a world of anticipation hinges upon this wondrous wealth of bloom!

To linger in the lane when the old trees are flower-laden; when the air is heavy with a honeyed scent; when the bees' low hum fills the long, leafy arch, and every summer bird is happiest—this is an experience too valued to be lost; one that sweetens life until spring shall come again.

The trees are old. They have more than rounded a full half-century, and now bend with the weight of many winters. They are ragged rather than rugged; yet, game to the last, are again sturdily upholding to the bright sunshine of merry May mornings a marvelous wealth of bloom.

As seen from the crests of the rolling hills beyond, this double row of trees recalls a huge snow-bank, such as has often filled the lane in winter—recalls such as I have seen at sunrise, when they were tinged with a rosy light. In winter, I have often thought of the blossoming

trees in May: now I recall the lifeless beauty of midwinter snows. In winter the beauty of the marble statue held me: now, the joy of a living form.

But apple-blossoms bear well a close inspection. Better than a comprehensive view from the neighboring fields is to draw near, to walk beneath and beside them, to linger in their scented shade. Time after time, until now, a shadow of doubt has crossed our paths, when we gathered early bloom. The wail of winter winds still sounded in every passing breeze, although we plucked violets from the greensward beneath budding trees. Too often, in April, we are over-confident; but there is little danger of disaster now. Apple-blossoms are the first assuring gift of fruitful summer. Grim winter is powerless now, to wound us. Tricksy April can play no heartless pranks.

What summer sound is more suggestive than the hum of bees? Certainly not even the song of the returning birds. As I look among the flower-laden boughs above me, I can see not only the bees from the hive, the true honey-gatherers, but burly humble-bees go whizzing through the rosy labyrinths, or, dipping down to a level with my upturned face, threaten fierce vengeance if I draw too near. Again and again they come, one after another, and each time, I

think, a little nearer, yet never, despite their bluster, venturing to sting. To be sure, I make no threats in return, nor run away, and so my bold front may deter them, for they really seem to read our thoughts at times. Not so their cousins, the autumn wasps. They brook nothing. I remember, one October morning, throwing a stone at and bringing down an apple, upon which, as it happened, a wasp was feeding at the time. The ruffled insect came the first to the ground, and not only promptly stung me when I stooped to pick up the apple, but followed me across the lawn, into the house, and darted most viciously at my face, time after time.

When the old bee-bench, with its half-dozen rude boxes, stood by the gooseberry hedge in my grandfather's garden, the lane, when the trees were in blossom, was, as I recall that time, even more thronged by bees than now, and the mighty humming of their wings forcibly suggested the rapid flow of water; as the roar of the mill-dam, after a heavy rain. So great a volume of sound, indeed, was there all day, that the night was silent in comparison. So ran my thoughts; so returned vague visions of past years, as I lingered in the lane to-day. But after all, may it not be that I, rather than the conditions, have changed? How often have I longed to hear the songs, to see the bloom, to

catch the fragrant breeze that held me spell-bound when a boy; and all these later, fleeting years, I have hoped for them in vain!

With the apple-blossoms come the birds' nests, and who that has lived in the country knew not of a robin's home in some old apple tree? And did ever a bird sing merrier strains than this same robin at sunrise? Or, even better, as the sun shone forth again, after a shower, the rapid roll of his rejoicing, as he perched upon his home-tree's loftiest branch.

It is the rule, apparently, that very old apple-trees have great hollows in them. If the entire trunk is not a shell, then here and there, where branches have decayed and fallen, caves of considerable depth are found, and how quickly wild life tenants such snug quarters! A few of our mammals, many birds, several snakes, besides one species of salamander, and the tree-toad, have been found at home in hollow apple-trees. If, therefore, such a tree stands not too near a dwelling, its occupants may epitomize the fauna of a farm. Although, after a rain, I have found pools of water in old trees, there were no fish, and these need not be looked for, unless some venturesome mud-minnow, that now can work its way over narrow mud-flats, shall, in time, take to climbing trees, as does a perch that is well known to ichthyologists. "In 1794, Daldorf,"

says Dr. Gunther, "in a memoir . . . mentions that in 1791 he had himself taken an Anabas in the act of ascending a palm-tree which grew near a pond. The fish had reached the height of five feet above the water, and was going still higher."

When I peer into the hollow trees in the lane, here, at home, I only expect to find birds, and seldom have been disappointed, except so far as the English sparrow has ousted the old-time bluebird. It is exasperating to think that the latter have been crowded out and now gather in the more retired woodland areas to breed. What song better fitted with apple-blossoms of a bright May morning, than that of the bluebird? And now, we have instead, the ill-tempered chirping of an alien sparrow!

But apple-blossoms are none the less beautiful because of the unfortunate changes meddlesome men have brought about. They hold their ancient glory still and yield, as of old, that rich, rare fragrance which never cloys. Surely no one ever walked among rows of blooming apple-trees, and said, "It is too sweet." Not even of our native wild crab-apple is this lightly to be said, and it is unquestionably of deeper tints and richer fragrance than the average cultivated tree. I know of one exception. At the end of the row upon one side of the lane, there stands a vigor-

ous apple-tree. It has more the appearance of the trees in the forest than of those in an orchard, and if its fruit is not quite so small as that of the wild crab, it is but one remove therefrom. This tree rests its glory upon its blossoms, and well it may ! Upon these go out all its strength, offering, therefore, beauty to the eye, rather than food for the body. It is a tree with a history, perhaps, not worth relating. When set where it now stands, it appears to have been more exposed to the wind than its companions and was twice blown down. When last put back, my grandfather remarked, rather impatiently, "Now stay, at least, if you never bear an apple!" And the tree stood, still stands. What of the fruit it bears? Tough, wrinkled as a toad, and sour; it is said that even the pigs refuse it, squealing in disgust when, by mistake, they crunch it. So, if my grandfather's muttered curse fell upon the fruit, the tree revenged itself by adding beauty to its blossoms, and to-day, though twice hoar-frost has chilled the open buds, if judged by the eye alone, it stands, among a goodly number, brightest of them all.

The Building of the Nest.

THOSE who have lived a part or all of their lives in the country know from observation, while those who have spent their days in town know from hearsay or books, that a very large proportion of our birds remain with us only from April to October or later; while yet others, on the approach of winter, come from the north to escape the rigors of an arctic climate, and a considerable number of most interesting species are strictly resident. This striking feature of bird life is by no means confined to North America, and perhaps it is, in most respects, more suggestive as observed on other continents. However this may be, it is so noticeable an occurrence on our Atlantic seaboard, that the coming and going of this or that bird has passed into our folk-lore, and more than one weather proverb is based upon the arrival or departure of wild-geese, fish-hawks, and the swallows.

Although very much more is now known of these seasonal movements of our birds than was but a few years ago, it is not yet, and probably never will be, possible to determine the "law" of migration, for the simple reason that the spring-tide northward and autumnal southward flight of our inland birds has not that element of regular-

ity as to dates or method that has been so frequently insisted upon. They come and go, but beyond this we can be sure of nothing from year to year. Sooner or later, our warblers, thrushes, and fly-catchers come as the world grows green; sooner or later, as the meadows and upland grow drearily brown, these same birds depart.

But if, as to birds collectively, we can not be positive in this matter of the time, place, and manner of migration, we can feel moderately confident of a return, summer after summer, of certain individual birds, if they have escaped life's perils in the mean while. Says Dr. Robert Brown (*Birds of Passage*): "The individual swallow, it is now ascertained, returns from the Canaries or North Africa to the very spot on which it built its little mud mansion the previous summer; and, according to the observations of the celebrated Jenner, marked birds were caught at their old nests every year for three successive seasons."

I find the home hillside luxuriantly green to-day, although the first week of May has not yet passed. Even the tardy oaks are well in leaf, and from every nook and corner of the woods and fields there floats the merry song of a nesting bird. Among them, are there any friends of a year ago? Surely I recognize one. Long before sunrise on the morning of April 26th I heard a

loud chatter near my chamber windows. There was no mistaking the creature that uttered it, and I knew, although it had rained violently all the night, and was still storming, that the house-wren had come back to his old castle on the post. I peeped through the shutter as soon as there was sufficient light, and there stood the little bird, braving a keen east wind and singing with all his might. Now, the day before there were no wrens near; not one was skulking along the hillside looking for nesting sites. Had there by chance been even a straggler ahead of time, as is not uncommon with many migratory birds, it would have been heard, if not seen, for wrens are never silent for a day, if indeed for any five minutes of it, unless asleep. Therefore I am confident that the plucky bird that I saw in the dawn of April 26th had been guided by the prominent landmarks, such as the river, meadows, and the wooded bluff, and had come directly to his home of the past summer, hastening, when once he started, to the inconspicuous box that is perched upon a pole close to my house, and hidden by two great locust-trees and a towering wild-cherry. No stranger wren while yet it was dark could have found the spot and proved himself so promptly at home, for early that same day, while yet alone, the bird commenced house-cleaning, preparatory to the one

great event of the coming summer—nest-building.

While not quite true that all worth knowing of a bird is centered in the few weeks occupied in rearing its young, certainly at no other time is it seen to the same advantage. Every faculty is quickened then, and all that a bird is capable of effecting is apparent. Something more important than food-getting commands its attention, and reason is exercised almost if not quite to the exclusion of instinct, for the nest of every bird must meet its builder's peculiar needs, and is not fashioned blindly after the homes of its ancestors. It is true that a family likeness runs through the nests of a given species of bird, but to say of a deserted one in autumn this or that bird built it is a rash procedure.

Not every bird builds a nest, although all lay eggs, and, as has been intimated, all nests are not alike. Perhaps the cup-shaped structure built of twigs and lined with fine grass may be said to be the typical form, but many are the modifications of this simple pattern. And now this beautiful May morning the birds are building. Not here and there a sparrow or a thrush, but birds of many kinds, and building everywhere. I can not even mention them by name, or my article would run into a catalogue. Suffice it to say they are building in the barn and on it, in my

house and down in the chimney ; under the floor of the bridge in the lane is a nest, and the trees, shrubbery, and bare ground are all occupied. There is now a nest for every nook and corner, and I would that the young people of everywhere were my guests to-day, provided they would live up to the law I long ago passed for my own government—eyes on ; hands off.

And now what of the building of particular nests ? I know of twenty within a stone's-throw of my front door, and the making of each one had its serious as well as comic side. At the very outset a conflict of interests arose on account of some bits of material being equally valuable in the minds of several birds ; and when an oriole, a wren, and an English sparrow wish to pull at the frayed end of a rope at the same time, something more than a mere ripple of excitement is likely to ensue. In short, nest-building brings out in a bird not only all its belligerency, which during the rest of the year is dormant, but a great deal of strategic skill as well, for many a time I have seen the smaller bird succeed through cunning in outwitting the bully that depended on mere strength of beak and claws.

The burden of each bird's mind in spring being, "I must build me a nest," let us follow the wakeful wren that came on a stormy morn-

ing to his old home. He evidently was sure of his mate, and was for four days ceaselessly at work. Perhaps he found odd moments when he could eat, as he constantly did to sing, but never a leisurely meal was his, I am very sure. The old homestead must be made habitable again. And how he worked! All the old rubbish of last summer was pulled from the box, and none of it taken back, I fancy. While I watched the busy bird two days after his arrival, I recalled an occurrence of last summer, and wondered if there might be a repetition of it, with my aid; and at all events the bird's movements would tend to show whether it was the same wren or not. So I placed tempting material for nest-building on a piece of very thin board, and set it afloat in a huge basin. It was directly discovered; the old wren was looking for it, I am sure now, but last year's tactics were not repeated as a whole. Then the bird alighted on the strands of hemp and submerged them and almost itself, and only after many trials hit upon the plan of dipping down and seizing a strand while on the wing. Would it do this now, a year later? I was all impatience while the wren fluttered nervously about the basin, but was encouraged by its contemplative manner. At last it attempted to alight on the mass, and I felt angry at its stupidity and my own overconfidence. But no! it proved

only to be an attempt; last year's experience was remembered, and strand after strand was deftly picked up while the bird was flying. I am confident now that I am listening, while I write, to the very wren that comforted me last summer.

While some of our birds content themselves with but shallow depressions in the ground, and many others place together so few sticks (and these ill-arranged) that the nest might readily be overlooked, there is one bird that is too lazy to do even so much, but drops an egg in the nest of another bird. This is the habit, too, of the European cuckoo, but our cuckoos are nest-builders, and the bird to which I have referred belongs to a very different group. Few people seem to know it at all, and yet it is abundant over a wide range of country, and has a dozen names, mostly meaningless. The best, perhaps, of them is "cowpen bird," a name derived, I suppose, from the fact that the bird is often found in pastures where there are cattle or sheep. Indeed, I have often seen them standing upon the backs of cows and sheep, catching flies, I presume, though they seem to be quite inactive when upon such a perch. Although not nest-builders, they have something to do with the building of nests. When that tireless songster the red-eyed vireo builds its pensile nest on the hillside, the

necessity for concealment does not occur to the bird, and so its home is often invaded by the female cow-bird, and a single egg dropped into the structure as soon as, if not before, it is finished. Sometimes this is put up with, sometimes not. I have many times found nests that were two-storied; the intrusive egg being, of course, in the basement, and destroyed. This is one of the best examples of bird wit of which I know. A vast deal is taken into consideration while the decision is being reached to build a floor over the obnoxious egg, and so prevent its hatching. There can be nothing of all this ascribed to instinct, for then all such eggs would be destroyed by this means, and the bird become extinct. On the other hand, it is but a very small percentage that have the wit or courage to undertake the work, which is evidence enough that, of a given species of bird, the variation in intelligence among individuals is very marked. This, indeed, we see on every hand when birds are building. Particularly noticeable is it when the female bird stays at home and arranges the material which her mate brings to her. This is mere drudgery to the male bird, and too often worthless bits are brought which the toiling builder promptly rejects, and not always with becoming patience either. She speaks her mind in unmistakable tones, and if not heeded after the

second or third scolding, open war is declared on the spot, followed too often by a wreck of all their hopes.

A word more. If people, young or old, would get a correct knowledge of a wild bird's ways, would know what is meant by animal intelligence, let them study a pair of nest-building birds while they are at work. Let them draw near, but not too near, and see how carefully the work progresses, how skillfully many a difficulty is overcome, how completely the finished structure meets all requirements. Do this, but do nothing more. Refrain from disturbing the timid builders; abstain from robbing them when their work is done. By gentleness prove yourselves the friends of birds, and they will return your kindness with a measure heaped up and overflowing.

A Meadow Mud-Hole.

THE least suggestive spot in the world to most people is a mud-hole. The common impression seems to be that fish avoid it, that frogs and birds pass it by, and plants decline to cover its nakedness. This, like a great many other common impressions, is really very wide of the

mark. If the water be not unutterably filthy, fish will condescend to tenant the shallow depths, frogs will thrive therein, bitterns and the little rail-bird find such a spot attractive, and many an aquatic plant grows nowhere else so vigorously.

There are, as all know, mud-holes that are but blotchy remnants of man's interference—mere accidents, as it were, which do not concern us; and also those deeper scars where the fair face of the landscape has been wounded severely, as when the ice-gorged river bursts its proper bounds, leaving a shallow pool in my pasture meadow: such as these are never beneath the notice of a contemplative rambler. The truth is, in the valley of the Delaware the average mud-hole is eminently respectable. Giving the matter a sober second thought, one will see that mud is not necessarily offensive. That of the meadows, if analyzed, proves to be compounded of very worthy entities—water, clay, sand, and leaf-mold. Why, because they are associated, should they be so studiously shunned? No chemical change has taken place resulting in the formation of a dangerous mixture. Mud is unlovable only when you are made its prisoner; but even a fool knows it is best to remain outside the bars when he comes to a lion's cage. The lily loves the mud from which it springs,

and who in the wide world loves not the lily? Let us accept her as an authority that this mud has merit.

There is a typical earth scar of the worthier sort within easy reach of my door-yard. I chanced upon it one February morning when the surrounding meadows were frost-bound, but the water was free, sparkling, and full of aquatic life; and there is not a month that it has not its growth of green, if not a wealth of blossoms. Even the plant life of the preceding summer serves as a covering in winter, and a January thaw starts the hardier grasses as surely as it quickens the sheltered upland dandelions into bloom. And on this bleak February day, when the meadows were like smooth rock, the river a glacier, and with scarce a trace of green to be seen on the hillside, the expanding spathe of the fetid cabbage—a plant full worthy of a better name—was well above the ground, darkly green and beautifully streaked with purple and gold; and a foot or more below the surface of the water were even greener growths, tangles of thread-like vine that quivered whenever a frightened fish rushed by. Indeed, these delicate growths are a delight to our many hardy fishes that, scorning to hibernate when food and shelter are so accessible, must laugh, I think, at the darting ice-crystals that gather and grow strong

until they shut out the sun, but never reach their weed-grown habitations.

It was greener still in March; but in April, when the meadow ditches are being decked with splatter-dock and calla, arrow-head and sweet-flag, golden-club and equisetum, then from the bottom of more than one small pond spring up sharp, spear-pointed rolls of rank green leaves, growing until the water's quiet surface is pierced, and a stout stem bears into view two parallel rolls of delicate leaf tissue. I refer to the rare yellow lotus. Perhaps not for all time a native, but it has long since earned its right to a place in our flora.

Most interesting is the beautiful adaptation of the leaf to its surroundings at the outset of its growth. Tightly twisted and pointed obliquely upward, it meets with no resistance from the water, and runs no risk of entanglement with other growths. Once at the surface, the unrolling is rapidly effected, and a bronze chalice with an emerald lining is ready to catch the dew as it falls. The circular perfected leaf, often twenty inches in diameter, is usually supported on a foot-stalk five or six feet in height, and among them often many floating leaves. Certainly no other of our aquatic plants has so striking an appearance, not even the wild-rice at its best—.

That tangled, trackless, wind-tossed waste,
Above a watery wilderness.

Gray gives as the range of the American species the "waters of the Western and Southern States; rare in the Middle States; introduced into the Delaware below Philadelphia." Introduced by whom? The Indians are said to have carried it to the Connecticut Valley, where it still flourishes in circumscribed localities, and this I find is the impression in southern New Jersey and in the neighborhood of a little lake in the northern part of the State, where also the native lotus is found growing, but I have not yet found a positive statement to that effect. Rafinesque in 1830 remarked, "As it is scarce in the Atlantic States, it is said to have been planted in some ponds by the Indians."

The fact that the Southern and Western Indians valued the plant is significant. Nuttall records that "the Osages and other Western natives employ the roots of this plant, which is of common occurrence, for food, preparing them by boiling. When fully ripe, after a considerable boiling they become as farinaceous, agreeable, and wholesome as the potato. This same species . . . is everywhere made use of by the natives, who collect both the nuts and the roots."

Early in the century it was growing in the meadows of the Delaware below Philadelphia, and Dr. Benjamin Smith Barton considered it indigenous. He says also that "efforts at cul-

tivating this plant and multiplying its sites of growth have been unsuccessfully made in the neighborhood."

It is curious that Kalm, who gave so much attention to the food plants of our Indians, should not mention the lotus. It certainly could not have been at the time of his visit here (1748) a common plant, yet the lower Delaware, where a half-century later it was still found, was a locality about which he botanized with much industry. It is hard to believe that, had he once caught sight of its enormous leaves, often thirty inches in diameter, or seen the bright yellow blossoms on their towering stems, he would have omitted to make mention of such an experience. Kalm spent a considerable part of his time among his countrymen at Raccoon, now Swedesborough; and at Woodstown, but a few miles away, the native lotus grows luxuriantly, a relic, it is believed, of Indian water-farming.

There is no improbability in the opinion that the Indians cultivated the plant. They were certainly practical horticulturists as well as growers of field crops. It was of an Indian orchard that the pioneer settler of a New Jersey town wrote when he stated, in 1680, that peaches were "in such plenty that some people took their carts a peach-gathering. I could not but smile at the conceit of it. They are a very deli-

cate fruit, and hang almost like our onions that are tied on ropes." The peach was probably introduced into Florida by the Spaniards, and in about a century or less its cultivation by the Indians had reached northward as far as New Jersey. The nuts and roots of the lotus could as readily be transported as the pits of the peach, so no obstacle was in the way. Intertribal intercourse was very far-reaching, as shown by the occurrence of peculiar forms of stone implements common in distant localities, and Mexican obsidian and Minnesota red pipe-clay along our eastern Atlantic seaboard.

While yet we have the Indian in mind it is well to refer also to the very significant fact that these people took the golden-club (*Orontium aquaticum*) from the tide-waters and planted it in upland sink-holes, miles from the nearest spot where it grew naturally.

Perhaps we can never be positive about the matter. If a fiction, it is so pleasing a one I trust it will never be overthrown. To stand upon the bank of a pond and see in it traces of both an aboriginal flower-garden and a farm certainly adds to the interest that surrounds the plant.

We have it on the authority of Emerson that Thoreau expected to find the *Victoria regia* about Concord. It was but an extravagant

method of expressing his opinion of the merits of that region ; but I am not so sure that the Victoria is the most beautiful of all aquatic plants. Finding it growing and blooming every summer in an open field near by, I have surely the right to express my preference for another. It and the lotus grow in the same waters, and I love the lotus more, give it the first place among flowers, although there floats upon the surface of these same waters royal red lilies of India, tooth-leaved white lilies from Sierra Leone, the golden one of Florida, and, perhaps more magnificent than all, the splendid purple lily of Zanzibar. I can start across-lots and quickly come upon them all in an open field ; but it is the lotus that holds me.

I can not rid myself of the thought that with the Victoria, as with all its attendant lilies, the hand of the care-taker is necessary. A very Amazon itself, it needs an Amazonian setting. We look for a naked baby on the largest pad, and the infant's mother in a canoe gathering Victorian seed-vessels. These, with a troop of scarlet ibises, spur-winged jacanas, and chattering macaws, are all needed to complete the picture. With them, the world has perhaps nothing more striking to offer ; without them, the plant is too bizarre, too like the eagle when shorn of its priceless gift of liberty. Not so with the lotus ;

it accords well with the unpretending valley of the Delaware, is not a thing apart, but the culmination, as it were, of Nature's vigor here, and seemingly not out of place even when it fills a meadow mud-hole.

One species is, as we have seen, truly American, native and to the manner born, even if introduced and cared for by the Indian along our Eastern seaboard; but now, where the wildness of the Indians' day has been long lost to us, and novelty is sweet, we rejoice to find the lotus of the East is no longer a stranger in the land.

In a now nameless little stream, filling the narrow interval between low hills, till within a few years there grew little but the yellow dock, white arrow-leaf, blue pickerel-weed, and here and there a lily. It was simply a typical muddy brook, such as is found everywhere in the "drift" areas of the State. Every plant was commonplace; but far be it from me to infer that any one was mean or meritless. Not a flower named but is really beautiful; yet, save the lily, none would be gathered for nosegays. Why, as is so common, speak disparagingly of the yellow nuphar, our familiar splatter-dock? Let it be gathered with care, with no fleck of tide-borne mud upon its petals, and see how rich the coloring, and with what grace the flower has been molded. I doubt not, were the nuphar

fragrant, it would be extolled as it deserves, as, were the rose fetid, it would be despised. Thus one writer remarks, "From its filthy habits it has been called, with some justice, the frog-lily." But wherein lies its filthiness it is hard to determine. It has no decided preference for waters too stagnant for its fairer cousin the white *nymphæa*; and then smirched lilies are no novelties. A pond may be too muddy for even them to preserve their purity, yet they will grow as luxuriantly as their unstained sisters. That the *nuphar* may remain longer in the polluted waters than will the *nymphæa* does not argue that it prefers such conditions, and never a frog but loved clean water better than foul. Botanists should not speak slightingly of the animal world; it too has its beauties. And the reference to the frog shows a woful ignorance of that creature.

How many have held the flower-stalk of the arrow-head—a sea-green staff studded with ivory? They, at least, will admit its beauty. Nor will the spike of violet-blue flowers of the pickerel-weed fail to be admired even if gathered; and what flower when torn from its stem but loses grace? No shrub so sprawling but fills its niche fittingly.

Where these native aquatic plants grow they complete the little landscape. Each would be

quickly missed were it absent ; they are part and parcel of an evolved microcosm, needing nothing. Such was this little creek.

Into the deep mud of the stream, widened here by a dam to a pond of several acres, a single tuber of the Egyptian lotus was placed eight years ago, and the result awaited with much curiosity, if not anxiety. That same year it sprouted and grew luxuriantly. It was soon too prominent a feature of the landscape for its own good—the cows came, saw, and tasted, but did not fatally wound. It withstood the summer's heat, but would it withstand the winter's cold ? The pond that before was like all other ponds is so no longer. The native growths that seemed so firmly rooted have disappeared, and the lotus has taken all their places—so completely, indeed, that now even the water is shut from view for more than an acre's space. As the spot is approached from the neighboring hill-top we get a bird's-eye view, the effect of which is striking and thoroughly un-native, so far as plant life is concerned, and in a measure disappointing. Recall some rainy day in a crowded city when from an upper window you have looked down upon the street. No sidewalk and but little wagon-way to be seen—nothing but a waving expanse of upraised umbrellas. Hence the disappointment, if you have read travelers' tales of the lotus

bloom. But worthier thoughts well up as you draw nearer.

One has but to glance over Gray's Botany to notice how many plants have been introduced from Europe, and are now so firmly established that native species are forced to retire before them. The pond before me exhibits another, and so recent an instance it has not yet been recorded. What radical changes this Egyptian plant will work are yet to be determined; that we can foresee one of them—the crowding out of the nuphar—is unquestionable. That any change will be one to be regretted is highly improbable. To introduce the lotus is not to repeat the blunder of the English sparrow. It is certain not to oust other plants that are more valuable, for as yet we have found little if any value in the products of our marshes. Since the country's settlement it has been the aim of the thrifty to convert them into dry land whenever practicable. Thanks to whomsoever thanks are due, many are irreclaimable.

Seeing how forcibly this wonderful flower of the lotus impresses itself upon the minds of the ancient Egyptians and the East generally, how prominently it figures in Eastern religions—"all idols of Buddha are made to rest upon opened lotus-flowers"—it is safe to conclude that when familiar to all, even in this utilitarian age, it will

not be merely ranked as one of many flowering plants; it is of too commanding an appearance for this, and to literature will prove a boon. Aster, golden-rods, and buttercups can have a well-earned rest.

Years ago the cultivation of the American species proved a failure, and those who are now best capable of judging still record the curious fact that the native lotus is much more difficult to establish in our waters than the Eastern, and does not grow with quite the same luxuriance. Its introduction by the aborigines along our Eastern seaboard has been mentioned; perhaps it has lost vigor since it lost their care, and has disappeared excepting where its environment was peculiarly favorable. And the question arises, after all, Is it in the strict sense a native? May it not, indeed, have been brought hither in prehistoric times? The question of a superlatively ancient communication between the continents is a tempting subject for study, and how appropriate when resting in the shade of the Eastern lotus! Such a train of thought need not stir up any ghost of a mythical lost Atlantis. Still, the American form has certain marked peculiarities. The mature torus has a decided constriction some distance from the insertion of the stem, wanting in the foreign species, and the seeds of the former are globular instead of dis-

tinctly oval. Whatever the history of the American form, that of the Eastern, or Egyptian, as it is usually called, is too well known to need repeating, however briefly, and yet the plant is still wrapped in mystery. A word, however, concerning the term Egyptian in connection with it. At present it is a plant of India, of China and Japan, Australia, the Malay Archipelago, and the Caspian Sea—an enormous range; but it is no longer found in the valley of the Nile. The use of the name rests upon the fact that it was once there, not only a cultivated plant, but held sacred by the people of that country, as it is by the Hindoos. Egyptologists, however, are not of one mind as to the relation of the lotus to the antiquities of the Nile region, some questioning the matter altogether, and considering the sculpturing to represent the lily of the Nile, one of the grandest of the white nymphæas. Quite recently, too, it has been ably argued to be the renowned rose of Sharon. "Of such a kingly flower Solomon might well have said, 'I am the rose of Sharon.' "

Perhaps we should be contented with our splendid native flora, but surely there is room in waste places, our unappreciated marshes and mud-holes, for the lotus—

"a flower delicious as the rose,
And stately as the lily in her pride."

A treasure in other lands, why should it not be in ours? If he who causes two blades of grass to grow where but one grew before is a public benefactor, so he who adds the lotus to our meadows must likewise be so accounted. "A piece of color is as useful as a piece of bread."

With the blooming lotus within reach, let us come now to a few plain statistics. In the little mill-pond it has been exposed to precisely the same conditions as the native plants, and now flourishes in absolute perfection. Mingled with the fully expanded blossoms may always be seen the buds in every stage of growth, and this from early summer until frost. Happily there is not, as is so often the case, a magnificent but brief display, then nothing but leaves. If not a joy forever, it is at least one of a protracted season. Buds or blossoms, they are alike beautiful. Among many that are pale yet distinctively tinted there often stands out one or more with the loosening petals tipped with deepest crimson. Far more are like gigantic tea-rose buds, that soon open like a tulip, creamy white and rosy at the tips. Often these glorious flowers measure ten inches across when fully open, and are supported by stems extending far beyond the tallest leaves. One such that I measured was more than eight feet high.

When the flower is fully expanded, the huge

seed-pod, or torus, is a prominent object. Herodotus likened it aptly to the nest of a wasp. It is of the richest yellow, and surrounded by a delicate fringe of the same color. The seeds are seen imbedded in the flat upper surface, gems in a golden setting so lavish that their own beauty is obscured. After the petals have fallen—they are miniature boats of a beautiful pattern, that, catching the breeze, sail with all the grace of model yachts—this great seed-pod continues to grow, and is a curious funnel-shaped structure, holding the many seeds securely, yet not concealing any. The latter become as large as hazel-nuts, and are quite as palatable. And so, here in New Jersey, one can be a lotus-eater, can float in his canoe and pluck fruit from giant lilies. But be not too free to do so. It is not the fabled lotus, after all, and one's digestion may be more disturbed than his mind pleasantly affected.

In this isolated pond, seen by but few, and unknown to hundreds living near it, a bit of a far Eastern landscape is reproduced—a forest of graceful lotus, with its strange leaves, matchless blossoms, and wonderful seed-pods; and what has been here effected is being repeated in the mud-hole of my pasture meadow.

Less than a year ago, when spring was well advanced, I placed a root in the mud, and left it to battle with the crowding native growths.

Certainly the advantage was all upon one side, but it did not lose heart at being pitted against such heavy odds. Now it overshadows them all. For a time they are permitted to be co-occupants, but not for long. The lusty lotus is even now reaching out to a wide stretch of marshy meadow ; and there too, I doubt not, it will flourish as at my neighbor's. It is a rightful ambition to be able to sit down beneath one's own vine and fig-tree. Let me add the lotus, for it has come to stay.

For how long have water-lilies been on sale in our streets and at our railway stations, auguring well for the love of aquatic plants ? And that strange and scarcely known lily, alas ! of almost mephitic odor, the *xerophyllum*, is hawked about Philadelphia streets in early June, loved for its beauty despite the unfragrance ; and so too this famous flower of other lands must soon appear, but not to sink to the level of a mere pretty blossom : it is too suggestive a plant to meet with such a fate. What Margaret Fuller once wrote to Thoreau well bears repeating : " Seek the lotus, and take a draught of rapture."

An Open Well.

IT is none of my business, but I feel a twinge of indignation when, as is frequently the case, I meet with a pump-maker. His long wagon, with its load of wooden tubes and other fixtures of the latest patterns of simple or compound pumps, is a positive eyesore ; for, labor-saving as this may all be, it means, nevertheless, the obliteration of the open well, and for the old windlass, or still older sweep, a hideously painted post of wood or iron. He who has drunk, at midday in July, from an old oaken bucket, knows how great a loss one suffers by the change. Not even Hawthorne's rills from the town pump can quite reconcile one. Perhaps it is a fool's errand, but I have walked a mile out of my way, scores of times, for no other purpose than the pleasure of hearing the bucket splash in the waters of a deep well and to draw it up, by means of the well-poised sweep, "dripping with coolness."

It may be fancy, but even modern well-diggers are a different and prosy folk compared with the old masters of the art—for art it was, they held, to locate with the divining-rod just where the never-failing spring was "bubbling" far beneath their feet. Was a well to be dug ? Then Ezek Sureshot must do the work ; and not until years

after did it occur to any one that Ezek never failed to learn the wishes of the women-folk before he took up the forked witch-hazel and quartered the ground. The result was always the same: that mysterious switch never failed to point within an inch of the desired spot. Ezek was never known to disappoint his customers, so not one suspected his duplicity or lacked faith in the divining-rod. Ay! and there are yet hosts of people who still uphold its power to locate not only water, but lost articles. A wheat stubble was recently gone over, crossed and criss-crossed, with a divining-rod, to recover a piece of metal. As the field was divided by the man into square yards, it is not strange the bit of iron was found, but the credit was given to the rod, which pointed earthward at the moment the man's foot struck the missing object. "In spite of what people say, there's something very curious about it," was the remark of one of the "head men" of the village. But this is a digression.

Happily, there are yet a few open wells scattered over the country, and one of these, with its sweep, is within my range. Of itself, perhaps, not a great deal can be said; but not every hole in the ground has such surroundings. How seldom do we find still standing, and in good repair, houses that were built early in the preceding century! Looking west from my study windows,

there may be seen a substantial stone mansion, built in 1708. Woe betide the tall man that enters it carelessly in the dark ! The ceilings are unaccountably low, Evidently there were few giants in those days, at least among the early Quakers. And, looking east, can be seen yet another house, nearly as old, built of huge oak logs, the ceilings of which likewise threaten the careless six-footer. Surely, if my ancestors were tall, they must have been painfully stoop-shouldered ! By the kitchen doors of all the original houses there were open wells ; and the sweep appears to have been the first apparatus in use for drawing water. From the doorstep to the well-curb extended a rude pavement of flat stones, and, if all poetry was not smothered in the old-time peoples' breasts, there was an elm, or drooping birch, casting a delightful shade in summer over all. Later the weeping-willow became the favorite tree. Such was the pretty picture seen upon every farm ; compare it with the ugly windmills that now rear their hideous nakedness against the sky.

From the general to the particular, from the past to the present, There still stands a cottage, off a by-road, mossy as a prostrate oaken tree, hedged with gooseberry-bushes and a clump of lilacs ; and, better than all else, there is the well and its sweep. I could never learn when the

cottage was built, but it was many a year ago, and its present occupants may have commenced housekeeping as far back in time, to judge from appearances. May they and the cottage last forever! Nowhere else can so much wood-lore and wise weather-saws be had at first hands. Nowhere else is there, at least for me, "the moss-covered bucket that hangs in the well." There are many features of primitive country life that are fascinating, yet why they are so can not readily be explained. To linger by this open well is one of these, yet why even hours can be spent at such a spot one can not tell. Has it to do with a love of retrospection common to all past fifty?—let this go for an explanation, whether one or not. Stay! can it be that, after quaffing a gourdful of the sweet waters, I recall many an invitation to the cottage, and hope? Even yet I am as ready to respond when the old lady's kindly face beams from the open door, for straightway there are visions of cakes and beer, the liking for which has never been even dulled. Ginger-cakes merely, but such ginger-cakes! Spicewood beer only, but what sparkle, what tingling spiciness! The very essence of the wild woods about the cottage, the brilliant glistening of the old well's brightest drops, here are combined in a beady, golden draught that quickly inebriates—makes

drunken with a love of old-time cottage days.

The old lady's gossip of the days gone by adds to the very sparkle of her beer; yet her whole life for more than half a century seems centered upon her one adventure, the coming and going of her children passing as too prosaic to mention. Not so that one great fright and its results. The now almost forgotten Camden and Amboy Railroad was then in operation; but though scarcely more than a mile distant, it was as nothing to her. She knew neither what nor where it was. But where the best whortleberries grew in the back swamp, that was knowledge worth possessing. Although her cousin Abijah had killed a bear during the winter, she did not think of it then, and started for berries where few men would care to follow. She knew every crooked path in the sprout-lands, and could find her way through them in the dark, she boasted. And so, with a light heart, she gathered berries. But at last an ominous screeching fell upon her ears. She stopped her work to listen. Louder and more angry, ay, and nearer, too, was that portentous scream. "Could it be another bear?" she thought, and at once turned her face homeward. The big basket was not quite full, and there were such loads of fruit within easy reach! It was tantalizing; but all doubt vanished with

the second, shriller, more unearthly scream. The path was no longer plain, nor she sure-footed. Pitching recklessly forward, the berries were bounced by handfuls from the basket, and it finally, as a dragging weight, was thrown aside. And, still sounding through the swamp, the terrible screeching of that angry bear! The cottage at last was seen through the thick-set trees, but not so plainly the tortuous path. The frightened woman was moved by but one thought—to reach her home; and, escaping until now all other dangers, she took one misstep, almost at her journey's end, and sank waist-deep in yielding mud. There was strength left for but one despairing cry, which fortunately fell not upon deaf ears. In a moment her husband came to her rescue. Such was her story, but by no means as she told it—a quaint narrative that invariably concluded with the pathetic remark, “And to think I lost all them beautiful berries!” The old lady had heard the first screech of a locomotive that awoke the echoes in the Nottingham swamps.

All the while her patient husband sits by the fire, giving vent to his feelings by a vicious poke at the smouldering back-log. For fifty years he has been her audience, and the story is now a trifle monotonous—so much so that, no sooner has she finished, at least when I was present, than he remarks, “If you tell the lad that story any more,

I'll a-wished you'd stayed stuck in the swamp." And then we have another cup of beer, and, followed by the old man, I start for home.

And—isn't it funny?—the old man tells me, as he has never failed to do for many a year as I pause by the open well, where we part, how he found gold, as he thought, when he dug the well, and kept the mighty secret until his plans were laid; and it proved to be nothing but lumps of iron and brimstone!

If old ladies prove, at times, to be a bit gar-rulous, what of the old men who are so prone to criticise?

PART III.
IN SUMMER.

A Noisome Weed.

THE whispering breeze that at sunrise calls me out of doors is laden now with the matchless odor of the blooming grape. Every draught of the vinous air intoxicates and the eye rests upon the brilliant landscape, but is scarce content. A curious feeling of indecision meets me at the very outset. Meadow and upland are alike urgent; field and forest offer their choicest gifts; rugged rocks and sparkling river both beckon to me. Whither, then, of a bright June morning, should the rambler stroll? For is it not true that beauty, when in bewildering confusion, ceases to be beautiful? When a thousand birds, as a great cloud, shut out the sun, they are but a cloud; but a single one, perched upon a tree, is a marvel of grace and beauty. So, the sloping hillside and the weedy meadows, brilliant with

every shade of freshest green and starred with a hundred tints, roseate, golden, and white, call for an infinite power of contemplation, and leave the wanderer dazed.

Shutting my eyes to the wealth of bloom about me, closing my ears to the melody of every nesting bird, I start upon the doubtful quest of the commonplace, hoping to chance upon some neglected spot, that happily generous June has overlooked.

As has happened so frequently before, where I least expected it, there stood the object of my search—a gem in a setting not so elaborate that its beauties were obscured. In a long-neglected pasture, a wide meadow torn by freshets, foul with noisome weeds, and strown with the wreckage left by winter's storms, grew many a graceful vine that few have heeded ; for it is not enough that the botanist should long ago have named it and that others should have besmirched its proper fame by calling it “carrion-flower.” Can we not forgive the offense to the nostril, when the eye is captivated ? Does it go for nothing that a plant beautifies the waste places and invites you to contemplate it as the acme of grace, because in self-defense it warns you to keep at a respectful distance ?

Sitting in the pleasant shade of clustering thorns, I see nothing now that attracts me more

than the leafy bowers of this curious vine. Every one has sprung boldly from the sod in full faith of finding the support it needs ; at least, I see none that are standing quite alone. Two, it may be, but oftener three or four, have started at convenient distances, and, when well above the tallest grass, each has sought out the tendrils of its nearest neighbor and these have closely intertwined. So, here and there, we have a leafy arch, and scattered among them many a pretty bower. These may well have given the Indian a clew to wigwam-building. Had ever, in the distant past, a savage seen his child creep beneath the overarching branches of the despised "carrion-flower," he would have seen how easily a summer shelter might be made. Perhaps upon some such hint the stuffy caves and rock-shelters were abandoned, for the time surely was when even a more primitive dwelling than a tent was man's protection against the summer's sun.

And may not these mutually supporting vines have struck the fancy of some Indian poet ? In the wigwams of these people, who but two centuries ago peopled these meadows and the surrounding hills, may not many a pretty tale have been told of these same despised carrion-flowers ? Dyer states, in his charming Folk-Lore of Plants, how, "in the Servian folk-song, there

grows out of the youth's body a green fir, out of the maiden's a red rose, which entwine together." I should not wonder at learning that so too the Indian believed that from the bodies of braves, who had fallen together, fighting for the same cause, had sprung these intertwining vines that cling now so firmly to each other. Why, indeed, should not the tragedy of Tristram and Ysonde have been re-enacted on the Delaware meadows?

But, though despised by man, this vigorous plant has hosts of other friends. The summer long, scores of bugs, butterflies, and beetles crowd about. Whether when in leaf only, or later when in bloom, or in autumn, when laden with its wealth of blue-black berries, it is never quite alone, and many of its attendants are fully as curious as the plant itself. One or more minute beetles prefer it to all other plants, yet not because of the peculiar odor. At least, the same creatures do not crowd decaying flesh. On the other hand, the dainty flies that linger about the ruddy phlox, the blue iris, and purple pentstemon tarry likewise about the carrion-flower and find it a pleasant place, if one may judge by the length of time they stay.

I was somewhat surprised to find this to be the case, as I looked for a repetition on a small scale of what is recorded of those strange plants,

the *Rafflesiaceæ* found in the tropics. Forbes, in his *Wanderings in the Eastern Archipelago*, records that once he "nearly trampled on a fine, new species of that curious family . . . ; it smelt powerfully of putrid flesh, and was infested with a crowd of flies, which followed me all the way as I carried it home, and was besides overrun with ants."

So far my own observation. What say others?

Let us turn, however, to a more savory subject. Undeterred by possible whiffs of sickening scent, I followed the example of my friend the meadow-mouse, and crept into the largest smilax wigwam I could find. It was sufficiently roomy for all my needs, and shed the sun's rays better than it would have done the drops of a summer shower. The east wind brought the rank odor of the marshes, and more fitfully the tinkling notes of the marsh-wrens that now crowd the rank growths of *typha*; but sweeter songs soon rang out near by, as the nervous Maryland yellow-throat, thinking me gone, perched within arm's length and sang with all its energy. The power of that wee creature's voice was absolutely startling. We seldom realize how far off many a bird may be, when we hear it sing; often looking immediately about us when a strange note falls upon our

ears. Certainly this yellow-throat's utterance might have been distinctly heard a quarter of a mile away. Such shrill whistling is no child's play, either. Every feather of the bird was rumpled, the tail slightly spread, the wings partly uplifted, and the body swayed up and down as the notes, seven of them, were screeched—I can think of no more expressive word. It was not musical; and yet this bird has long been ranked, to my mind, as one of our most pleasing songsters. It needs a few rods' distance however, to smooth away the rough edges.

But the great point gained in the day's outing was to find that even the carrion-flower could be put to such good use. It makes a capital observatory, wherein and wherefrom to study the life of the open meadows. To these Nature-built shelters you are always welcome; the latch-string is always hanging out, and if perchance you do not share its single room with many a creature that loves the shade at noontide, and, so while away many an hour in choicest company, you may lie at its open door and watch the strange procession that forever passes by. It may be a mink, a mouse, or a musk-rat may hurry by, bound on some errand that piques your curiosity. A lazy turtle may waddle to your den and gaze in blank astonishment at you; and, better than all else, the pretty garter snakes

will come and go, salute you with a graceful darting of their forked tongues and then pass on, perhaps to tell their neighbor what strange sights they have seen. And as the day draws to a close, what myriad songs rise from every blade of grass! Hosts of unseen musicians pipe to the passing breeze; and crickets everywhere chirp so shrilly that the house about me trembles.

The day is done; but the night brings no end of novelty. The moping herons are no longer stupid; the blinking owls are all activity. Afar off the whip-poor-will calls—who knows why?—and the marsh-owl protests, as well it may, at such unseemly clatter. How quickly into a new world has the familiar meadow grown! Through the half-naked beam and rafters of my leafy tent I watch the night-prowling birds go hurrying by, and follow their shadows as the weird bats flit before me, for the moon has risen, and in its pallid light every familiar tree and shrub and all the night-loving wild-life of the meadows is wrapped in uncanny garbs. It is fitting now that a filmy mist should rise as a curtain and shut out the view. “He is none of us,” seems to shout every creature in my ear, and, taking the hint, I pick my way homeward through the dripping grass.

A Wayside Brook.

IT is not that I may indulge in mock heroics that I champion the so-called waste-places, but out of pure love for the merits of even the least of Nature's work. A single cedar casts sufficient shade for me, and, resting full length on a bed of yarrow, I have, at once the breath of the tropics and the aroma of the Spice Islands wherewith to while away these July days. From such a spot there is pleasure too in watching the shifting scenes of the sunlit world beyond—a pleasure greater than peering into the depths of a dark, monotonous swamp or pathless wood. But if this is simplifying matters beyond reasonable limits, then let us to a wayside brook, and to the shade and spiciness add the music of rippling waters. Surely this should suffice the idle saunterer at midsummer. When it is ninety in the shade, it is wiser to watch the minnows in a brook than to battle with pickerel in the mill-pond. Nor should such contemplation be too trivial for one's fancy. Even little fishes have their ups and downs, although everything goes swimmingly with them. As has been said somewhere, if my memory plays me no tricks, the fish-world is diversified by other occurrences than feeding or going to feed others. In other

words, they have impressions, vague though they may be, of the world about them, and existence is something more than—

“A cold, sweet, silver life, wrapped in round waves,
Quickened with touches of transporting fear.”

The brook need not be deep nor wide, and may wander through many a rod of dusty fields, scarcely covering the pebbles that bestrew its bed, and yet contain fishes. I have often been surprised to find many small minnows in brooks that were scarcely more than damp, except here and there a spring-hole, or pool, about the roots of a tree. Such places are noble hunting-grounds if the rambler is an enthusiastic naturalist, and many a chapter might be written concerning our smallest fishes. Except to very few, they are wholly unknown.

On the bank of a little wayside brook I tarried for half a day recently, with minnows, birds, and dragon-flies to keep me company, and what a royal time we had! At first the fish were shy, and took refuge under flat pebbles but I coaxed them forth at last by tossing crumbs before them. At ease, so far as I was concerned, they commenced their beautiful game of chasing sunbeams, the largest stone in the stream being the base from which they ceaselessly darted to and fro. The flashing of the fishes' silvery sides, the dart-

ing rays of sunlight, the sparkle of the great bubbles that danced on every ripple, proved a very carnival of light and color, the soul of which was this company of fun-loving minnows. In saying this, I intend to convey all the meaning that such a phrase comprehends—in other words, to ascribe to these small fishes a pronounced degree of intelligence,

Their life proved not without its shadows, however, as very often their merriment was changed to terror in a twinkling. It happened that a gorgeous dragon-fly came with a sudden onset to the little brook and filled these fish with fear while it hovered above them. I leave it to others to say why the minnows should have been afraid. Has any person ever seen a dragon-fly catch a fish?

Prof. Seeley, writing of a European cypri-noid, remarks, "Probably every person who has ever looked into a small stream has been surprised by the singular way in which minnows constantly arrange themselves in circles like the petals of a flower, with their heads nearly meeting in the center, and tails diverging at equal distances." I looked for this, but our Jersey minnows were not so methodically inclined, and all kept their heads in one direction, up-stream, until at a certain point, when, as if on signal given, they would right about face, and dart down-stream

for a yard or two, re-form, and as a company make their way to the dispersing point, a thin slab of stone that barred their further passage.

So, in this most unpromising spot I found no end of entertainment, and, except in midsummer, would not have tired of any single feature; but study, even studies a-field, are irksome in July, and I forgot the minnows as my eyes fell upon a large slab of stone near where I was lying. It was one of four broad stepping-stones that nearly two centuries ago were placed here. Then, there flowed, through a thick woods, a broad stream, and near here the first house was built. Upon these stones had stepped the grave elders and loitered the light-hearted children of three generations; and now not a trace of house, garden, barn, woods, or pasture remains. Everything has given way to more pretentious structures, broader fields, and painfully angular highways. The one-time winding lane, shaded by noble oaks, is now not even to be traced across the fields; and, instead thereof, a narrow sunny strip of yellow sand leads to the public road. "What an improvement!" once remarked a neighbor, when the change was made. What an improvement, indeed! where once was beauty, one finds, save this little remnant of a creek, an endless array of fields, with scarcely a tree along the division fences. Doubtless, could the brook

have been obliterated, the work would have been undertaken. As it is, the narrow strip is all that Nature can call her own, and so, whatever of her charms can find a place, here she sets them down; and so here a rambler may be happy, or fairly content at least, if he does not raise his eyes continually to scan the horizon. I, for one, on the half-loaf principle, accept the wayside brooks with thankfulness, and now after long years have found that in many an essential feature they do not suffer so greatly as one might suppose when compared with Nature's more pretentious waterways. Let Nature, on however small a scale, have the upper hand, and at such a spot the rambler can afford to tarry. But perhaps I am partial, for this was my play-ground, forty years ago; still, I would say—

Let not the wayside dells go unregarded ;
Why ever longing for the hills or sea ?
Who loves earth's modest gifts is well rewarded,
And hears the wood-thrush sing as cheerily
As when by mountain brooks it trills its lay,
To soothe the dying moments of the day.

Here, where no busy toilers ever rest,
Where but the wayside weeds reach from the sod,
I love to be the merry cricket's guest,
And find, though all is mean, no soulless clod ;
The bubbling spring, the mossy pebbles near,
The stunted beech, they all are justly dear.

Like-minded birds—so I am not alone—
Linger as lovingly around the spot,
Whose subtle charm such mighty spell has thrown,
That wander where I will, 'tis ne'er forgot ;
Here, child and bird learned first to love the sky,
The tree, the spring, the grass whereon I lie.

When timid Spring warms with her smile the way,
With all-impatient steps I hasten here ;
No bloom so bright in all the bowers of May,
As the pale violets that cluster near :
Bright grow the skies, nor troubling shadows fall ;
Childhood returns, when joy encompassed all.

Wayside Trees.

WHO that has ever walked in the country has not blessed the farmer who planted, or early settler who spared, the wayside trees ? The average country road, especially in the poorer farming districts, is something deplorable. Only too often, even when shady and otherwise attractive, there lies only the choice of wallowing through sand, stumbling over rocks, or tripping over briers that would shame the Gordian knot for close entanglement.

It is unreasonable to expect well-worn paths, far from the town's limits, unless Nature has provided them : but something a little better than

the remote highways, as they now are, might certainly be had. Is there not sufficient tax collected in every township to secure this? Probably the farmer who never walks to the village, and finds the wagon-way fairly passable, may insist that the pedestrian can pick his way, however rough the ground. True, but this does not dissipate the pedestrian's just claims. A man that must walk, because too poor to ride, is none the less worthy of consideration, and may well grumble if his right of way is blocked. Of course, man must take the world as he finds it, and alter it if he can; and such an alteration is practicable where good roads or foot-paths can not be, in the planting and preservation of wayside trees.

Such was the current of my thoughts when I met, recently, the overseer of a highway resting, at noon, from his labors. To him, and for him, a little speech was made; and what was the reply? "Too many shade-trees will encourage the tramps"! So he who loves to wander out of town must take the dusty highways as they are, and sigh for pleasant shade he can not enter. To plant a wayside tree, to have a country byway beautiful, must not be thought of—it will encourage the tramps!

Now, it so happens that, near where I live, a chestnut-tree was spared, two centuries ago, probably because it was too crooked for fence-

rails. Certainly for no praiseworthy motive was it allowed to stand ; but it does, and so to-day it casts a shadow in which half a regiment might gather. Not strangely at all, every man, woman, and child in the neighborhood loves the old tree, and points to it with pride. Were it struck by lightning, it would have a public funeral. And yet I have not found that any of my neighbors, except those very near the town, have planted even a single wayside tree. On the contrary, a noble row of catalpas was felled not long since for fence-posts !

A wayside tree means, to the pedestrian, something more than a mere island of shade in an ocean of sunshine. A stately tree has many lovers, and hosts of birds are sure to crowd its branches. Such a tree then becomes the Mecca whereat the rambler spends the hours of hot high noon, not only pleasurable but profitably—for I hold that a bird can not be watched for long without gain. Is it nothing, as one rests in the shade after a long tramp, to have a wood-thrush sing to him ? Is it not a lesson to the weak-hearted to hear the restless red-eye's ceaseless song ? The perverse grumbler, has he a trace of reason, will, at least secretly, own that much of which he complains might be far worse, after listening to the singing of a bird perched in a wayside tree. Though shorn of so much that

Nature granted to the most commonplace of lands, chaos has not quite come again. Certainly, however barren a sandy field may look, it is not yet a desert.

As any ornithologist will tell you, birds, though there be little that favors them and much that is harmful beset them everywhere, will persistently cling to a tree by the roadside ; will even nest in it, although the ubiquitous small boy showers them with stones ; and, more, though persecution is the order of their day, will sing as in a paradise regained, thankful that the world has even this much of untamed nature left.

If, then, in spite of themselves, farmers love what wayside trees there are, why can we not have more ? Think of a leisured stroll, of a hot summer's day, through a long avenue of leafy oaks !

Skeleton-Lifting.

THERE are probably very few people but have seen the pretty stone arrow-heads that are found, often in abundance, after the fields have been plowed. I have often filled my pockets with them while wandering about, and, in the words of a friend, "been amazed at the numbers which are sown over the face of our country, betoken-

ing a most prolonged possession of the soil by their makers. For a hunting population is always sparse, and the collector finds only those arrow-heads which lie upon the surface." But if their handiwork is abundant, not so their skeletons, and it is the uncanny taste of archæologists to prize the bones as well as the weapons of the Indians. Still, it is not more objectionable to carefully preserve the bones in a glass case than to scatter them with the plowshare.

Because it is well to turn aside from beaten tracks occasionally, that we may appreciate their beauty the more upon our return, and avoid the danger of having the sweets of the upland or the meadow pall, I have been indulging, of late, in archæological pursuits; been gathering relics, though the locust and wild cherry drooped with their burden of bright bloom, and the grosbeaks wooed me to the hillside. Notwithstanding this, I resolutely turned my back upon bird and blossom alike, and sought a neighbor's field, over which waved tall and stately grain. It was proposed to give the day, but, as it proved, the night was added, to archæology.

There were weighty reasons, of course, for this intrusion upon my neighbor's land, as no sane man without a potent incentive would dare to walk through growing grain. What moved me to so bold a deed was this: Last autumn I

discovered that my farmer neighbor had two skeletons, and of one of which he neither had any use nor knowledge of its existence. When apprised of the fact, he expressed no surprise, but resolutely declined my offer to become the custodian of the superfluous bones, and even went so far as to make appropriation next to impossible. But I bided my time, and now, these bright June days, the grain kindly covers the ground and every creeping thing upon it, as it proved when a dog bounded into the field on the trail of a rabbit. I forthwith took the hint and crept upon the trail of a dead Indian. The danger of discovery—real, not fancied—gave something of zest to the work. With only a garden trowel, the earth, over a marked spot, was carefully removed, and as I had all the while to lie upon my breast while at work, the task was a painfully slow one, and I more than once wished myself away, until a few small bones were brought to light. Then all thought of discomfort vanished. Bone after bone was slowly uncovered, but all, alas! were so friable that not one could be removed with safety. In a short time the entire skeleton was laid bare, but under what strange circumstances! I had it within my grasp, but could not move it, nor indeed myself, more than to crouch in the tall grain about me. It was too like digging one's

own grave, and once, imagining an approach, I lay full length by the side of my fleshless friend. The day of my rejoicing had come, it is true, but there proved to be an overabundance of thorns with the rose. Here was the long-coveted skeleton; but within hearing, in the adjoining field, was a burly farmer, passing to and fro with his plow. Whenever he came near, the grinning skull grew pale, as though it, too, feared discovery; and so, until the dinner-horn sounded across-lots, I was held a prisoner. How anxiously did I listen for retreating steps and the rattling of the unloosened plow-chains!—welcome sounds that came at last, assuring me that the coast was clear. Then, leaving the treasure to the kindly sun that was rapidly warming it to hardness, I sped dinnerward.

The Fates were intolerably cruel that day. At sunset, when I purposed to return, innumerable obstacles loomed up, and every excuse to run away from company that had most inopportunely arrived was pooh-poohed by madam, in a most meaning manner; and it was just midnight when the open grave was reached. The full moon at that moment broke through the clouds, and a flood of pallid light filled the spot when I shook hands with the fleshless warrior and forced myself to return the ghastly grin of his angular countenance. There was something

of defiance, too, in his eyeless sockets, and a ghost of resistance as he was lifted from a couch that he had occupied for some three thousand moons at least. The rattle of his disjointedness was as harsh as the language that once he spake, and while I thridded the woods and skirted, on my way home, the resounding marshes, where every frog most ominously croaked, every jostle of the warrior's bones seemed to force a protesting syllable between his rattling teeth.

With all deference to the votaries of archæology, skeleton-lifting by moonlight is, I claim, a most uncanny pastime.

Why I prefer a Country Life.

UZ GAUNT was, in the writer's experience, the most level-headed of farmers. He once remarked, "Town folks smile at my vim and way of putting things, but I'd rather be next neighbor to Natur' than to most of the town folks." That remark impressed me many a year ago as a nugget of pure wisdom, and now, when on the shady side of forty, I still think it wiser than any casual remark, learned essay, or eloquent oration I have ever heard in town.

It is a sad error to suppose that a rustic is

akin to a fool; and a citizen's real worth may be measured by his manner of speaking of the country people. That a significant difference obtains can scarcely be denied, but it is not one that altogether exalts the dweller in town and degrades the farmer. Will any one pretend to say that the latter is less intelligent or refined? The simple fact is, the two classes are differently educated: the townsman largely by books, the farmer to a great extent by his surroundings; the former comes by his facts through hearsay, the latter by observation. In other words, the citizen tends to artificiality, the farmer to naturalness. The one is educated, the other acquires knowledge. Dead, weigh their brains, and which may claim the greater number of ounces?

And here let me say, in passing, that not all knowledge worth possessing has yet got into books. Is it not true that the brightest features of current literature treat of the world outside a city's limits? What, indeed, would modern novels be without something besides brick and mortar for a background? Will the reader become enthusiastic over a story the scenes of which shift only from Brown's parlor to Jones's and back again?

The thrifty farmer may see nothing that attracts in the ball-room, and fail to follow the thread of the story, or be charmed by the airs of

an opera; but has he not a compensation therefor in the Gothic arches of his woodland, beneath which tragedy and comedy are daily enacted? And what of the songs at sunrise; when the thrush, the grosbeak, and a host of warblers greet him at the outset of his daily toil?

Town and country are interdependent; but, considered calmly and in all its bearings, does not the former ask more of the latter, than *vice versa*? Has not the influx of rural vigor an incalculable value? Does it not prevent, in fact, the very destruction of the city, by checking the downward course that artificiality necessarily takes?

But, as the heading of this article indicates, I do not propose to enter into any controversy as to the relative merits of city or country life, but simply to state why I prefer the latter. And may all those to whom my reasons seem insufficient flock to the towns and become, what our country certainly needs, good citizens.

I prefer an oak-tree to a temple; grass to a brick pavement; wild flowers beneath a blue sky to exotic orchids under glass. I would walk where I do not risk being jostled, and, if I see fit to swing my arms, leap a ditch, or climb a tree, I want no gaping crowd, when I do so, to hedge me in. In short, I prefer living "next neighbor to Nature." I am free to admit I know very little about the town. It has ever been a cheer-

less place to me: cold as charity in winter, hot as an oven in summer, and lacking nearly all those features that make the country well-nigh a paradise in spring and autumn. Vividly do I recall the saddest sight in my experience—that of seeing on the window-sill of a wretched tenement-house a broken flower-pot holding a single wilted buttercup, and near it was the almost fleshless face of a little child.

To be indifferent to the town is to be misanthropic, says one; and is affectation, says another. Perhaps so I neither know nor care. It concerns me only to know it is the truth. None loves company better than I; but may I not choose my friends? If I prefer my neighbor's dog to my neighbor, why not? I have not injured him, and, if harm comes of it, it is the dog that suffers. Have not most people far too many friends? Hoping to please all, you impress no one. You hold yourself up as a model, and the chances are you are secretly voted a bore. Certainly, he who lives where human neighbors are comparatively few and far between runs the least risk of social disasters.

But there is a deal in the world besides humanity worth living for; and I count it that the world was not made for man more than for his brute neighbors. They, too, and their haunts, are worthy of man's contemplation.

Is it spring? I would catch the first whisperings of the soft south wind, and hug the precious secret known, save to the flowers, only to myself. And, as the days roll by, would watch the opening leaf-buds one by one, and greet the first blossoms peeping above the dead year's scattered leaves. Is this a waste of time? If so, how is it, then, that the earliest spring flowers need but to be taken to town to set the people, one and all, agape? Is it nothing to brighten the dull eyes of the weary toilers in the city? Verily, a violet plucked in February preaches a refreshing sermon. And, yet again, when a faint shimmer of green tints the wide landscape, I would catch the earliest note of the returning bird as it floats across the wide meadow or rings with startling clearness through the wood. Perchance along the river's shore I would hear the heaped ice crack and groan as the breath of Spring snaps its bonds and sends this rugged gift of Winter whirling to the sea.

Is it summer? I would catch the fragrant breeze at dawn, and mark the day's beauteous progress step by step; gather good cheer from the merry thrushes' song, and chirp as lustily as the robin though my task be long. Even at noontide, be it never so sultry, I would take heart from the brave field-sparrow's hopeful tone, and lighten my labor with the anticipation

of long hours of rest, when the world's best gift comes to the fore—a moonlit summer night. Surely it is something to go hand in hand with the year's ripening harvest, for Nature unfolds many a secret then, more strange than any fairy tale and more helpful than any fevered fancy of vague theorist. Armed with such knowledge, the countryman is well equipped to solve the problem of his life; and does not the toiler in the town ask more frequently than all others that fearful question, *Is life worth living?*

Is it autumn? The recompense for bearing the heat and burden of the year's long day is ours. What joy to contemplate the heaped-up treasures of a fruitful summer, and know they are yours by right of a worthy conquest wherein no one suffered wrong! Nor is Nature less beautiful or less communicative now. Indeed, I hold her even more so. The ruddy tints of the forest leaf mark the completion of a summer's labor to which we have given little heed as it progressed; but the woodlands invite us now to see how beautiful as well as useful a tree may be, and open their doors to "an annual exhibition" at which the world may well wonder. I would rather have the autumn landscape before my door than its counterfeit on canvas hung upon the wall. It is a comfort to know that, be the former ever so gaudy it, can not be said to be

unnatural. Thank the stars! critics are dumb, whatever the garb Nature sees fit to put on.

Is it winter? In a broad sense the world is now at rest, but one need not sit down and mope because of it. It is a happy lot to be able to lead a contemplative life; the better if it alternates with periods of activity. And never a winter so dead as to be unsuggestive, not even though the rigor of an arctic one be upon us. If the familiar river no longer flows by, brimming, blue, and sparkling, flecked with the white sails of busy craft or fretted with the tireless splash of hissing steamers, what of the rugged highway it becomes for the wild life that braves the north wind and its attendant storms? Whoso studies the flocks of dainty sparrows that throng the wide, wind-swept wastes in winter should have courage enough to face the world at all seasons. What a pulpit becomes a cake of ice whereon a tree-sparrow is singing! and I have heard hundreds of warbling sparrows when the day was cold and dreary beyond description.

“How cheerless are the leafless oaks!”—these the strange words of a storm-bound visitor. Cheerless? just now, perhaps; but wait, and what a network of ruggedness will bar the deep blue sky, and let in the welcome sunshine where the gnarly roots afford a tempting seat!

It is winter now, and as welcome the warmth and sunshine in this little nook as were the coolness and shade in the leafy month of June.

And what a merry fate is his who is snow-bound! It is something to know even a little of what Whittier has pictured for all time. Every feature of a great snow-storm is a living poem that thrills us; and ever dearest of all the open fire. "Back-log studies," think of them! Everything, down to the breaking of paths to the highway and the assurance received at last that the world still lasts—everything, when snow-bound, cuts a deep notch in the tally-stick of your memory.

The townsman may greet me with a pitying smile and turn with disdain from the pleasures wherewith I am pleased; but nothing that he offers in their place has yet tempted me to forsake the idols of my early days. What though I am rough as the gnarly black-oak's bark, have I not Nature for my next neighbor?

A Midsummer Outing.

THE gentle breeze that keeps the forest roof a-tremble whispers the promise of a cool day, but breaks it long before noontide. It is wise,

therefore, to trust only to past experience, and, if you ramble at all during the dog-days, consider yourself in the tropics and act accordingly. Seek the shady nooks, and rest content to contemplate that which is nearest at hand. He has traveled much who spends an hour in the woods. The glamour of mystery rests as a veil over every tree and shrub, and who has yet shown why the wayside weeds are all so brilliant and beautiful? Where, except the damp shades of night, no cooling shadows ever fall, even the well-traveled highway is now resplendent with St.-John's-wort, or white as with a snow-drift, where the blooming yarrow clusters; but the pitiless sun threatens the rambler here, and I turn to the little forest of sumach and locust which now nearly obliterates the boundaries of a long-neglected pasture. Everywhere is outspread the luxuriance of the tropics. Acres of lilies, ruddy and golden, set in a cloud of tall meadow-rue; and this wealth of gorgeous bloom upon which the eyes might feast the summer long, is hedged by a glossy thicket of smilax, broken here and there only to give place to a no less rank growth of pink roses. My neighbors hold the place a disgrace to its owner, but I have long since cut the word "weed" from my vocabulary.

In midsummer, it is too much like cataloguing to scan over-closely one's surroundings. Gen-

eral impressions are all that one should aim at, and not fret if many a flower or bird should escape notice. When it is ninety in the shade, it is well to carry even a light load of thoughts. Lilies and yarrow, for instance, are enough for a hot July morning, and I am quite content to have further details go to those botanists, fearful bores, who

“Love not the flower they pluck, and know it not,
And all their botany is Latin names.”

Probably there was waving lizard-tail; I know there was purple milkweed; but if there were a host of lesser growths, it availed nothing. I was seated in a bit of shade, and from my cozy nook looked out, at my leisure, upon acres of lilies; and when their fiery tints proved too bright for such a day, I refreshed my sight by turning to the yarrow, on my left, or that daintiest of blooming shrubs, tall meadow-rue. Is this too objectless a way to spend the summer? Should an outing have higher aims? Various comments that reach me imply that view, but I enter a plea for such laziness. Whoso contemplates a flower logically, and sees not only it, but all that it represents, has given his brain but little rest, though he may never have moved a finger. A fig for the loud-mouthed chatter of non-productive busy-bodies!

It was not long before the fact became evi-

dent that this sea of lilies was the pathless highway of a busy world. Bees, wasps, and many a creature akin to them hurried by, tarrying but for a moment here and there, ever buzzing their displeasure or humming sweet satisfaction as on they rush. As in the human world, success and want of it were the essence of the steady ramble of that insect metropolis.

Though long I waited, not a bird came near. The kingbirds, that are held to be such foes of the honey-bees, were not to be seen, nor any fly-catchers came in view. Afar off in the shady copse I could hear the wood-peep-wee lisp its languid notes, and nearer a field-sparrow trilled its winsome lay, but neither dared venture to the open meadow. It was the insects' paradise for the time, and I must confess soon became monotonous. But I struggled against tiring of the wild bees' hum, and hoped, if nothing more tasteful offered, I might gather a bit of patience. If dished up daintily, perhaps it can be swallowed with a smiling countenance, but the bare drug, in fly-time, rouses a rebellion.

I singled out the nearest lily, and armed with my field-glass became statistician. The novelty wore off directly: it was too like work. The procession of bees and bee-like flies that visited that one flower was not to be counted like city street parades. The bees marched in every direc-

tion, and the lily was simply the hub of a wheel with innumerable spokes. Soon, however, the monotony was broken and my languishing interest revived. There was a commotion in this particular nook of lilydom. I cautiously drew near, and found a noisy humming-bird; then nearer, and found it no bird at all, but a clear-winged sphinx, and was not ashamed to find I had made so great a mistake at the outset. There is no great harm done in jumping at a conclusion, if we follow it up and verify or correct the original impression. Certainly at a little distance the resemblance is very marked. On its appearance every near-by insect seemed to take umbrage at the presence of the "clear-wing," and the volume of sound was largely increased. There was a change from a contented hum to an angry buzz. This change was readily brought about I found by agitating the lilies with a switch, and so I realized, more clearly than ever before, how by the increased velocity of the wings' movements an insect would express its emotions. For a time I forgot the heat and the glare of the noon tide sun, and, walking to and fro, I roused at will an angry roar from thousands of disturbed bees, or, by remaining quiet, allowed it to settle into the drowsy hum of contentment.

But the unprotected tropic of that field of

lilies proved too great a strain, and I was glad to seek the shelter of the woods. And what a change is wrought by a few degrees of temperature! Here I found the humming-birds in *propria personæ*, but they would not hum or buzz as I drew near or retreated, and proved to be veritable commonplaces, although I am sure their nest was very near. Disgusted with their unsuggestiveness, I went home, and there followed up the subject, so far as these birds are concerned. Covering one side of a porch is a thrifty trumpet creeper, now in full bloom. Here come the humming-birds continually, morning, noon, and night, and here I heard their angry buzz, and could see it, too, I think, in the motion of their wings. It needed only a little irritation to make them buzz angrily; but this is not their only means of making themselves heard. They can squeak quite loudly, and very generally do, if the flower they alight upon or actually enter, is not quite to their satisfaction. I used to think that the wrens were the quickest tempered of all our birds, but probably the humming-birds are their equals in this respect. This I learned from a pair of nesting birds, but to-day, this terrible, tropical July day, I had the other fact impressed upon me, that not alone do insects express their feelings by the movements of the wings; it is true also of the humming-bird.

A Word about Knowledge.

HALF a loaf may be better than no bread, but such a rule will not apply to all matters. Half a fact is not better than ignorance.

Recently, not very far from New York, the Boston idea of naming the trees in the public grounds—painting upon narrow boards both the botanical and common names—was adopted by the city authorities.

Acer rubrum, | *Quercus alba*,
Red maple, | White oak,

and so on, were nailed to the various trees, and each, as is not always the case, in its proper place. While the work was in progress the following conversation took place: “What a deal of money is spent in advertising patent medicines and such stuff nowadays!” remarked Blank to his friend. “See there!” and he pointed to a maple properly labeled, adding, “That’s some new bitters or a salve for corns, I suppose.” “No, it isn’t,” replied Double Blank, with an air of infinite wisdom; “these boards are the names of the different kinds of trees, nailed up for the benefit of the ignorant in such matters. Here’s another one, and, don’t you see, it gives the scientific and common names both? *Quercus*, white; *alba*, an oak. I remember that much

Latin, anyhow." Is it true that life is too short to acquire decent knowledge of natural history, along with arithmetic and geography? And what profiteth it to study Latin if such a display of ignorance as the above is the ultimate outcome? Botany and zoölogy are in the curriculum of many lesser institutions than colleges; but, from the manner in which these subjects are taught in some places, they would better be omitted. These two worthy citizens whose conversation was overheard—and the report thereof is not "doctored"—had both been through a course of botany, and one of them had struggled through a Latin reader. There is undoubtedly still a considerable amount of prejudice against science, or "organized common sense," as Kingdon Clifford has happily called it, though why I do not pretend to know. If it is a fact that birds fly and fishes swim, can any harm come of knowing it, and of how and why they fly and swim? And, a step further, if some birds swim instead of fly, and certain fishes climb trees, as is true, is knowledge of the fact likely to prove dangerous? Yet again, if ten thousand facts have been discovered, as they have, which upset the ideas of our grandfathers, need we tremble? I trow not. And this leads me to a word also about "newspaper science," of which more anon. What wonderful statements creep into

the local papers! Impossible snakes, no less impossible birds, and creatures too strange for even the nightmare of a zoölogist, figure now and then as captured in the neighborhood of an inland town, yet no one contradicts the reporter or sees the absurdity of it all. The mythical hoop-snake bespatters the "patent outsides" of many a village weekly. Better, by far, absolute ignorance than half the truth. *Quercus*, white; *alba*, an oak, indeed!

While the aforesaid intellectual status causes us to pity our fellows and at times to laugh at their expense, brazen assumption of knowledge, which is far more common, is often positively exasperating.

What a sad spectacle, yet very common one, to find, even in our larger towns, thousands led blindly by a half-dozen who, by reason of brazen assumption, have stepped forth as leaders, and been meekly accepted as such! The intellectual status of many a village is sometimes ludicrous. In Smalltown there live a lawyer, a doctor, and a clergyman, who are great cronies, past sixty, and puffed up with pride. As a matter of course, they rule the little community with a rod of iron. Not a great question of the day but is referred to some one of the three or to all, and nothing concerning the past comes up but their opinion is sought and relied upon. No one ever

reaches an independent conclusion, nor thinks for a moment that error may have crept in when the past is discussed. The noble three were never known to admit their ignorance ; and never, during their joint reign, have their decisions been disputed. Of course, the inhabitants of Smalltown see as through a glass, darkly ; for who such disseminators of untruth as those who lay claim to universal knowledge ? May a recent ray of light that recently penetrated their darkness tend toward their awakening ! It happened not long since that the blacksmith fell ill, and a stranger took his place at the forge. This newcomer had been taught his trade, and rightfully prided himself that he thoroughly understood it. Such independence nettled the village clergyman, and, when that worthy came to have his horse shod, there was not a paring of the hoof, driving of a nail, or stroke of the hammer, but under his explicit direction. The smith was patient, silent, and obedient, but all the while there was a dangerous glitter in his eyes. The horse went lame directly, and "That fellow is an ignorant bungler," was the minister's outspoken decision.

That was Monday, and Smalltown moved with the monotony of the old hall clock's pendulum until Sunday morning. Then the quiet blacksmith took his seat in church near the door and sat through the service. In due course the

sermon of the past half-century, with variations, was preached, and ended with the usual peroration, "Brethren, is this not true?" With the asking of that question Smalltown was shaken to its foundations, for the blacksmith quickly shouted, "No!" and straightway retired. That minister had no faith in the skill of the blacksmith; the latter placed no confidence in the preacher's logic. I do not defend the blacksmith, but, somehow, when I heard the story, I was otherwise than shocked. There is a bit of harshness in it, perhaps, but the remark must needs be made: Put not too much faith upon defective memory; and it may be rightfully added, there is nothing but reasonableness in the suggestion that he who presumes to know all things is no safe authority upon any.

The Night-Side of Nature.

NOT long since I checked the flow of a diminutive brook that barely trickled over a most tortuous course, and during midsummer was often a thing forgotten. By building a dam I raised a shallow pond about two hundred feet square, and nowhere more than eighteen inches deep, save at its outlet. Here are now growing

beautiful water-lilies—pink, yellow, blue, and white—the stately lotus, and many a pretty aquatic plant from foreign lands. Of these I have nothing now to say, except incidentally, but a good deal concerning the remarkable zoölogical features of this artificial pond in the corner of an exposed upland field.

I am quite sure that the most skillful hunter would have found no game had he scoured this and the adjoining fields, even with trained dogs; no trapper would have deigned to set a snare anywhere about the place, and the naturalist would have considered the outlook most unpromising. As in every farming district, here were acres of corn-fields, wheat-fields, truck-patch, and pasture, and nothing but grass or growing crops to relieve the monotony of the landscape. Every vestige of wildness has long since been improved off the face of this region, and grasshoppers, mice, and field-sparrows constitute the fauna. That is, apparently so; and how readily we underrate the merits of the so-called commonplace in nature! The truth is, every inch of these unsuggestive fields has ever been and is familiar ground to hosts of cunning creatures, or how else could the pond that was formed in a few days have become tenanted as it now is? The remarkable promptness with which every nook and corner was occupied by some water-

loving animal almost the very day the pond was formed shows how much is overlooked if we familiarize ourselves only with the events of the day, and ignore, as young naturalists are all too apt to do, the night-side of nature.

If the reader were to stand on the bank of the little pond early in the morning, his attention would doubtless be drawn exclusively to the lilies, and the skimming barn-swallows or fiery dragon-flies that outspeed them would not be seen. Here and there the waters would be rippled, but only the broad leaves of the lotus trembling in the breeze would catch his eye, yet that ripple marks the progress of a monstrous water-snake. Charmed by the beauty of a trailing vine that rests like an emerald serpent on the pond's placid surface, the deep tones of enormous frogs will be unheard, yet here are giants of their race that quickly found the spot, many of them larger and more musical than their brethren in the meadows. By the side of a miniature lily from Siberia, scarcely an inch in width, may pop up the rugged head of the ferocious snapping-turtle, but the on-looker will see only a bit of wood floating in the water, so absorbed is he in the wonderful display of aquatic bloom.

Now, this is not an imaginary case, but the record of more than one actual occurrence, and I lay stress upon the particulars because it shows

how readily we overlook so much that is well worth seeing. These few square rods of shallow water go not so much to make a lily-pond, although this was my sole intention, as to form a zoölogical garden on a quite extensive scale.

. Let us consider now some of these unbidden and unwelcome occupants of the pond. Of the mammalian life, first in bulk as well as destructiveness is the musk-rat. It is not so much of a wonder that these animals so soon appeared. They are given to nocturnal wanderings. This is the night-side of their nature that we must keep in mind. In this case they had but to follow the windings of the brook for a thousand yards from a creek, where they have always been, to reach the pond. The curious feature of their coming was, that in so short a time they had securely established themselves. They seem to have said to themselves, "This is to our liking," and without delay dug their underground retreats. They considered the pond their own, and in one night the smooth and sodded bank was marred by a line of treacherous hills and hollows. Then broad leaves and thick stems of lilies began to float about, cleanly cut from the parent plant. The culprits were well known, yet days and weeks passed without one being seen. But a single moonlit night sufficed to tell

me what I had guessed : their hours of activity are when men are supposed to be asleep.

The wary mink, too, came nightly to the pond, and, if it fished in the waters, it was for the many frogs that abounded, but I found no mangled remains of the old fellows that outcroaked the myriads in the meadows.

Then rabbits, mice, and squirrels came trooping to the water's edge, stood there, and wondered at the novelty of a bit of the meadows being brought from the lowlands to this dry and dusty field ; and when a prowling dog came by, how with one wild shriek they vanished, and left the pond to the bewildered dog and myself, and then to myself only, for the dog soon turned to follow the trail of the fleeing rabbits ; and here I tarried long, gazing in rapture upon the lotus by moonlight.

It is Gordon Cumming who has described with wonderful vividness how herds of antelopes and elephants, and even many lions, came to drink at night from pools near which he lay concealed. What a boon to a naturalist to see these mighty beasts under such circumstances !

It may seem very absurd to think of one when speaking of the other, and ludicrous to compare them ; but when I sat concealed by the little lily-pond and saw these little animals, muskrats, rabbits, and even smaller fry, come to the

water's edge, I did think of the great lion-hunter of South Africa, and honestly believe I could realize, even more vividly than when I read his thrilling pages, what he had seen.

Probably no feature of wild life is so characteristic of water-scenes as the tall wading birds, herons, snipe, and sand-pipers. I did not anticipate the coming of any of these, unless it might be the little teetering sand-piper that is practically a land bird; but it has kept aloof, so far as I know, while stately herons have come and trod the grassy shores and fished in the shallow depths. These birds are not a feature of the day, however, and unless you are abroad after sunset you would not suspect their presence. And then do not expect too much. Probably some of the wonderful stories concerning herons, bitterns, cranes, and storks, have come to your notice, but it is quite certain that our North American species are very prosy, and set off by their size the waterscape far more than they embellish it by wonderful habits. It is true they are expert in catching frogs, cray-fish, and even mice; but, however bright the moonlight, you can see next to nothing of all this. The facts have been reached from dissection more than observation. And what of the "powder-down patches" upon a heron's breast? The fable that these emit light and illuminate the water sufficiently to

enable the bird to see a fish in the water is still repeated, and a greater error never found utterance. It is a pretty fancy, so the more dangerous, as it crops out every now and then, to the deceiving of the unsuspecting reader.

I have spoken of a monstrous water-snake. This serpent has long been a feature of the pond, and, when in the upland fields laying its eggs it probably smelled the water, and so turned northward toward the lilies, instead of returning southward to the splatter-docks in the meadows. I have cornered the creature several times, and always found it exceedingly surly. To be held in the hand it considers an insult, and bites with a rapidity of motion of the head that is marvelous. Its teeth are pretty sharp, too, and bring blood when the hand or bare arm is struck ; but then its violent efforts are so amusing that one forgets all about the pain. The snake loves a moonlit night, and at such times occasionally floats upon the surface of the pond without making the slightest motion, and a stranger would suppose it to be a small limb of a tree. This apparent rest, however, has a purpose behind, and is, I think, connected with the capture of food ; or so it has appeared to me on several occasions.

That the several turtles of our meadow tracts should find their way to the pond was not surprising, for even those most strictly aquatic take

long overland journeys in spring and early summer ; but I did not look for fish, as none could come down the brook, and I as little supposed that any could climb fifty feet above the river and reach it ; and then they would have, besides, to jump over the dam or waddle around it. And I saw no fish until weeks after the pond was completed. I stocked it with carp, and then, lo ! there were mud-minnows in these shut-off waters. Of course, they were there before the dam was built, and now they are too well established to be exterminated. I can only hope they will not find the carps' eggs, or feed exclusively on the young fish.

What, then, have I accomplished by damming a little brook ? I have changed to a watery wilderness the corner of a one-time dusty field. I have brought representatives of many forms of animal life, hitherto unknown to the spot, to a prosy nook, and so changed the whole face of Nature. The very weeds are even now different from those of former years, and hosts of insects that had not been here before now fill the air and make it to tremble with their tireless wings. And to the rambler, after long tramping in dusty fields or along the no less cheerless highway, here is a pleasant spot indeed, one that epitomizes half the country round, and offers, too, many a suggestive novelty. So much by day ;

but let him tarry until the gloaming, and when the lilies have folded he will catch, what is even better, glimpses of the night-side of Nature.

The Herbs of the Field.

WANDERING recently in and out the woods and fields, tramping aimlessly whithersoever fancy led me, I crushed with my feet, at last, a stem of pennyroyal. Catching the warm fragrance of its pungent oil, straightway the little-loved present vanished. How true it is that many an odor, however faint, opens the closed doors of the past ! Prosy and commonplace it may seem, but full many a time a whiff from the kitchen of some old farm-house, where I have stopped for a drink of water, recalls another farm-kitchen, redolent of marvelous gingerbread and pies, such as I have failed to find in recent years, and with their tempting spiciness went that subtle odor, from which indeed the whole house was never free, that of sweet-smelling herbs. I am daily thankful that the herbs at least have not changed, as the years roll by. It is the same pennyroyal that my grandmother gathered ; and think to what strange use she put it ! Made pennyroyal pud-

dings! Let them go down to posterity by name only.

The herbs of the field and garden were gathered, each in its proper season, by the folks at home, and in great bunches were suspended from the exposed beams of the old kitchen. In early autumn they made quite a display, but, as the winter wore away, became rather sorry-looking reminders of the past summer. To a limited extent their bulk decreased and their odor became less pronounced; but how seldom were they ever disturbed! I have dared to think that herb-gathering was a survival from prehistoric times, but I never dared to hint this to my grandmother. The nearest to doing this was to coax a braver boy to ask if the old bunches were burned at midnight with secret ceremonies, for they gave place to the new crop each year, yet were not seen lying about the yard. Neither the braver boy nor I could get any satisfaction, but a forcible reprimand instead, for hinting at paganism. I hold, nevertheless, that a trace of it did exist then, and does. Was it not something akin to this that more than one medicinal herb had to be gathered at midnight? This, it is true, was not openly admitted, but unquestionably faith in its virtue as a remedy was diminished if the plant was not gathered as the superstition dictated. Try as we may, the crude

faiths of our prehistoric ancestry we can not snap asunder. As elastic bands, they may grow finer and finer with the tension of the centuries, but still, perhaps as but invisible threads, they hold.

However steadily herb-using may have been going out of date in my early boyhood, herb-gathering was not, and I may be mistaken when I say that, except the pennyroyal in puddings, sage in sausage, and a bit of thyme and parsley in soup, the dozen others hung in old kitchens were unused except as fly-roosts—a fact that scarcely added to their virtues.

When I last lounged on the old settle and counted the several kinds of herbs hanging overhead, an aged negress assured me that every "yarb" kept some disease at bay, and predicted disaster as the new kitchens with their plastered ceilings and modern stoves gave way to more primitive architecture and methods. And I am half inclined to believe that she was right. The old folks had their aches and pains, but not so much of that depressing languor that we call *malaria*. Might not the ever-present odors of sweet-smelling herbs have kept this at bay? I fancied I felt the better for the whiff of pennyroyal, and, gathering a handful of its leaves, breathed the spiciness until my lungs were filled. It is something to have an herb at hand that re-

vives the past, and more perhaps to have many that add a charm to the present, for the pastures in August would be somewhat dreary, I think, were there not in almost every passing breeze the odor of sweet-smelling herbs.

But if pennyroyal, sweet cicely, and the spicy " mocker "-nut carry me back some twoscore years, what shall be said of a faint odor that can yet be distilled from plants that flourished in the same pastures or where these pastures now are, perhaps a million years ago? One is not given to thinking of anthracite as at one time wood, but it is different in this instance, for the blackened, fern-like plants in the underlying clays are still wood and not petrified; so that they burn with a feeble flame when dry, and burning throw off a rich fragrance akin to frankincense. I have often placed a splinter of these ancient trees in the flame of a candle, and, sniffing the odor that arises, travel in fancy to New Jersey's upland and meadows before they were trodden by palæolithic man; before even the mastodon and gigantic beaver had appeared; when enormous lizards and a few strange birds ruled the wide wastes. But the world here was not wholly strange, even then, for many a familiar tree was growing in this old river valley, as the delicate impressions of their leaves in the clay so clearly demonstrate.

If, then, one would indulge in retrospection—and therein lies one of life's most solid comforts—it will be found that suggestive objects are ever about us, and the herbs of the field, in August, would scarcely be missed, if unhappily they ceased to grow. But why, it may be asked, are these same herbs so suggestive of the past, so certain to give rise to retrospective thought? It is not a personal matter, for I have questioned many people, and in this they all agree. One reply is a fair representative of all. Offering a little bunch of garden herbs to an old man no longer able to wander out of doors, he immediately buried his nose in it, drew a long breath, and remarked, "How that carries me back to the old homestead!"

As by the touch of a magician's wand, in my walk to-day, the present vanished when I crushed the pennyroyal, and the ringing songs of the still tuneful summer birds were not exultant strains glorifying the present, but echoes of a dim past over which, perhaps, I am too prone to brood.

It is absurdly contradictory, of course, to say that I love retrospection, and that in August one is more prone to think of the past than the present, and yet not to love that month, but such is the case. In other words, I am vacillating and contradictory, and fail to command the words

that might set me right before the world ; but it is August now, and, summer's activity ended, why should I labor to think ? Why not build air-castles as I smell the herbs of the field ; build and unbuild them until the day closes, and later, lulled by the monotones of cricket and katydid, hum those ever-melancholy lines—

“ Backward, turn backward, O Time, in your flight ;
Make me a child again, just for to-night.”

PART IV.
IN AUTUMN.

A Lake-Side Outing.

HAVING been within the city's bounds for a week—for me a novel experience that has little merit—it was with the eagerness of a child that I rode a short distance out of town, and, turning my back upon the railway station, started with a few friends upon an old-time tramp. In the company were a geologist, an engineer, a botanist, an artist, and others who, like myself, professing nothing, were eager to extract the good from everything that came in our way. We filed along the dusty highway, some miles from Toronto, with Lake Ontario as our objective point.

There was not a feature of that ancient highway that differed essentially from the country roads at home. The same trees, way-side weeds, and butterflies met me at every turn;

even the crickets creaked in the same key, and the farmers' dogs were equally inquisitive. For more than a mile I am not sure that I saw a bird of any kind. In this respect we are surely better off at home. This absence of novelty was a little disappointing, but I had no right to expect it. Canada has been longer settled than New Jersey, and doubtless many a field we passed was cleared years before the forest was felled along the Delaware.

However this may be, the outlook soon changed for the better, and reaching the upper terrace, or ancient shore, the broad and beautiful expanse of Lake Ontario lay before us. From the upper to the lower terrace was but a step, and then, on the very edge of a precipitous cliff, I looked over to see the waves dashing at its foot, and carrying the loose sand and clay steadily into the lake. Clear as crystal and brightly blue the waters as they struck the shore; roily and heavy laden with the sand as they receded. It is little wonder that the cliff is rapidly yielding; there is nothing to protect it even from the gentle ripples of a summer sea. Yet wherever spared for a short season vegetation came to the rescue, and the yellow-white cliff was dotted with blooming clusters of tansy, golden-rod, eupatorium, and mullein yellow and white, that were too like the background to be

conspicuous; but not so the scattered asters, which were large and very blue; more so, indeed, than any that I saw elsewhere.

The proportion of clay in the cliff differed exceedingly, and where it was greatly in excess of the sand had withstood the destructive action of wind and wave, and stood out in great pillars, walls, and turrets, that suggested at once the ruins of ancient lake-side castles.

Leaving the cliff, not because weary of it, but to crowd a week's outing into an hour, the party turned to a deep, shady, vine-entangled ravine. I was happy. Indifferent to the geology ably explained by one, to the botany by another, to the beauty as extolled by the artist, I found a rustic seat and feasted upon raspberries. To eat is a legitimate pastime of the confirmed rambler. One's eyes and ears should not monopolize all the good things in nature; but these again were not neglected, for I stopped eating—when the berries gave out—and toyed with the beautiful seed-pods of the *Actaea*, or bane-berry. This I never find near home, and so its novelty gave it additional merit; but it needs no extraneous suggestiveness. The deep, coral-red stems and snow-white seed-pods completely captivated my fancy. Bearing this as a prize, I moved slowly over a pathless wild, hearing pine finches to my delight, and above all other

sounds the muffled roar of the lake as it beat upon the narrow beach nearly two hundred feet below me. At last I was in a strange country; one that bore not the remotest resemblance to any I had seen before.

There was no time to tarry, however attractive any spot might prove; and next in order, having seen the uplands, was to descend to the foot of the cliff and stroll along the beach. I was assured that Fortune favored us, as near by was a well-worn path. Never was a path better described—it was well worn. Smooth as a toboggan-slide and with few shrubs or sturdy weeds to seize in case of accident, my steps were clogged with fear; each foot weighted with a painful doubt. I hate to run a risk, and fear so strained my nerves that when the base was reached every muscle ached through sympathy.

If we limit the localities to sand and water, the lake was an ocean on a small scale, and not a very small scale either. Sky and water closed in the earth's boundary upon three sides; but the water lacked life. Not a shell, not an insect, not a fish had been tossed upon the sand—nothing but sand. This want was a disappointment, for the gathering of flotsam along our sea-coast is a never-ending source of pleasure. Perhaps, had there been recently a vio-

lent storm, I might have been more successful, but probably the water is too cold. On the other hand, it was a comfort to have land and water about one free from every trace of man's interference. Thank goodness, there were no iron piers and hideous rows of booths and bath-houses! For aught one could see, the Indians might have left these shores but yesterday.

Where we now strolled the cliff had been spared for several years, and a rank vegetation covered it from base to top. Squatty willows and dwarf sumachs, golden-rod and chess, a wild grass that recalled the graceful plumes of the *Panicum crusgalli* at home; these held the winds at bay, but were likely, when next it stormed to be carried out to sea, and with them tons of the cliff upon which they grew. As so many of the rank growths near by were heavy with seed, it was and is an unsolved puzzle why there should have been a complete absence of birds. Everything that an ornithologist would say seed-eating birds required was here in profusion; yet the birds were not. Already the summer migrants had departed—I found many warblers' and fly-catchers' nests—and the winter birds of the region had not yet appeared. From what I saw this day and afterward in other localities, I am well convinced that, taking the year through, there is no spot, east of the Alle-

ghanies, in the United States where birds are so abundant as in the valley of the Delaware. I have seen, since my return, more birds of many kinds in one half-hour at home than I saw during two weeks' rambles in Canada.

I was in no hurry to climb up the cliff, the descent of which was still impressed upon my memory, but the order to march came from the guide, and we struggled slowly up the well-worn path. If a brief rest had not been permitted, I should have rebelled ; but we were fortunate in this, and never did lake look lovelier than "in the golden lightning of the sunken sun." It was with regret that we turned our faces landward and crossed prosy fields, and even longed for the bright waters while threading a fragment of Canadian forest. Here, too, silence brooded over nature ; not even a chickadee flitted among the branches of the sturdy oaks and maples, nor a woodpecker rattled the rough bark of towering white pines. As we reached the public road, and stopped for supper at an old wayside inn, three silent crows passed by high overhead. They were flying in a southeasterly direction, and I watched them long, and wondered if they were bound for the far-off meadows at home, where hundreds of their kind gather daily as the sun goes down.

Dew and Frost.

AT sunrise to-day, by reason of the dew, the whole earth was beautiful. Every harsh outline was softened to comely roundness. Not even an ungainly fence scarred the landscape. Instead of Nature tortured out of shape, the outlook was as a peep into a fairy-land. And all by reason of the glittering dew. What is dew? Says the physical geography at hand: "When at night the earth radiates the heat which it has received during the day, the surface becomes colder than the ground beneath or the air above. Vapor rises from the moist soil below, to be condensed at the cooler surface. The adjacent layer of air above is also cooled to its point of saturation, and its vapor is deposited. This condensed moisture at the surface, whether from the soil or the air, is dew. . . . Dew does not fall, but is condensed on the best radiators, such as grass and trees."

Going no further into explanations, let us consider the dewy morn as we find it. What of this "early, bright, transient, and chaste" moisture that bathes the world alike? No, it does not, by the way. Many a spot is dry as powder, while elsewhere all is dripping. It does not do to make sweeping assertions even about such a

phenomenon as this. You will stir the lurking critic in his den if you do, and what a fell catastrophe !

But to-day, October 3d, the dry spots are to be looked for, so scattered are they, and practically everywhere are sparkling globules of pure water. Finding the world so, it becomes the essential business of the rambler to determine its effects. Are the birds chilled to silence ? Does the field-mouse shiver in his grassy nest ? I think not. Often have I wished to detect some marked evidence of the influence of dew, but my sluggish senses have failed me. Up from the glistening expanse of weedy meadows comes the blithe song of the sparrow ; out from the misty depths of the river valley floats the triumphant cawing of the crow. The bluebird greets the dawn with prophetic warble, promising the brightness of summer when the dew has gone ; and chill though the night has been, the twittering swifts are alert and aloft at day-break. Whether there be dew or none, it seems to matter nothing to the birds. But it is a veritable tell-tale so far as the early stirring mammals are concerned. They can never move so daintily that the dew-drops are not brushed aside, and the long lines of swept herbage stand out in boldest relief as the sun-light sweeps across the field. One can now track the belated creature to his home.

Most marked of all the effects of a heavy dew is the beading of a spider's web. A more exquisite object than a dew-spangled gossamer I have never seen. Within a week I saw a single silken strand that reached a rod in length, and not a break was there in the row of sparkling beads that clung to it. At the same time, from rail to rail of the roadside fence were stretched the marvelous weavings of the geometric spider, and every horizontal thread was dew-laden. I waited until the sun broke through the bank of clouds in the east, anticipating a splendid exhibition, nor was I disappointed. Alas! that language is so inadequate to one's needs, when such magnificence is before us. What the spiders may think of dew remains to be determined. As I prodded several of them, and forced them to the fore, they were a sorry-looking set, and shook their webs and themselves in a disconsolate way, as though chilled to the core. An hour later, as I passed by, their energy had revived.

And now what of dew as a weather sign? I turn to the "weather proverbs" that have been gathered and made into a little book (*Signal Service Notes*, No. IX), and find the sum and substance of fourteen "sayings" to be that dew in summer and autumn is indicative of fair days; the absence of it, of rain. "If your feet you wet

with the dew in the morning, you may keep them dry for the rest of the day." It is a comfort to know that a modicum of truth lies in some of the sayings in everybody's mouth; and certainly a dewy morn is likely to be followed by a dry and sunny noon. Nevertheless, do not expect to notch off your three score and ten years without a failure in these sayings. Euripides never hit the nail more squarely on the head than when he wrote—

What to-morrow is to be
Human wisdom never learns.

Sooner or later in October we have frost. The beautiful dewy morning two days ago was followed to-day by a no less beautiful morning; but the meadows were gray with frost. Says the physical geography: "When the weather is cold, so that but little vapor can be carried in the air, the dew-point may be below 32 degrees Fahrenheit. In this event what is deposited is solid frost."

The third day comes a frost, a killing frost, and whatever it might have killed it compensated therefor by adding life to the air. Despite its beauty, the country was reeking with an unseen, unsuspected poison, but one none the less sure in its fell effects. How different to-day! There is evidence of vigor so widely spread that

the blighted leaves and drooping blossoms may well be overlooked. No sounds are muffled; the faintest chirping of a distant bird falls sharply on the ear. The loose bark of the nut trees snaps and crackles at the squirrel's touch, and not a tiny twig breaks in the timid rabbit's path but we plainly hear it. The languor that held spellbound the woods and fields fled with the coming of that "killing frost." Well can we spare the daintier bloom of summer, seeing how great a train of blessings follows in the wake of frost.

There is a widespread impression that animal life is affected almost to the same extent as vegetation by these so-called killing frosts. This is not true. Insects are benumbed by it, but recover before noon. Frogs and salamanders are silenced and sluggish, but the morning sun renews their vigor; and who ever heard of a frostbitten bird? On the contrary, scarcely an hour after the sun rose on October 5th, there were a dozen birds, that, moping and peevish, had petulantly chirped for weeks, and now sang gayly. Later there was an old-time concert in the hillside thicket, even a brown thrush singing half his May-day song. Nature is renewed by a killing frost. It destroys the old to give place to the new; and this early autumn life that makes glorious October and softens the gloom of

November has charms too little heeded. The world does not need to be embowered in green leaves to tempt the rambler. He who lives out of town well knows how many are the frosty days when the uplands and meadows alike teem with myriad forms of happy life.

A Hermit for the Day.

A PECULIARLY disagreeable northeast storm, continuing for some time, kept me out of the woods, and it was long after the October moon had fulled that my opportunity came. Then I turned hermit for the day.

I question if it matters much at what time of year you turn your back upon civilization and take to the woods. They will greet you kindly at all seasons. If, by reason of your delay, they do not charm you with spring flowers, they have cool shades to offer when the dog-star rages; and following these, a carnival of color and harvest of sweet nuts. If you have tarried in town too long for these, then plunge into the forest at midwinter, and, sheltered by a sturdy oak, build your camp-fire. Do this, and if you return without a harvest of new thoughts, the chances are that you have turned up on the wrong planet.

The best means of realizing what others have enjoyed or suffered is to taste of their experience. I know of hermits from hearsay only, and I wished to test the accuracy of what I had heard and read concerning them. Pleased with the novelty of my quick-laid scheme, I renounced the world at midnight, and, laden with a blanket and provisions, started long before sunrise for a hollow sycamore miles deep in a lonely swamp. Of what I was to do when I reached the proposed goal I had no idea. The one controlling purpose was to get, not out of the world, but on one of its edges. Trudging half-heartedly along —the silence of midnight clogs one's energy—I reached before dawn the confines of that lonely swamp. As seen by the dim light of the drowsy stars, there was little to tempt me to enter, although the now scarcely discerned wood road that crossed it was familiar enough. What if there was no real danger (and he is a coward who turns from an imaginary foe) still the imagination persists in peopling a forest with most strange shapes—shapes at which one shudders; and yet, contradictory as we are, we give no heed to hosts of creatures daily about us that are far more marvelous. If I had any purpose whatever in this unusual outing, it was to study wild life; and now, because the dry twigs cracked loudly and the chafing branches over-

head groaned dolorously, I was disposed to forget that it was my own feet that broke the former and the wind that moved the tree-tops. What a fool man can be upon occasion! Be it on record, however, that the woods were entered, and many a rod was measured with firm steps, when, at a turn in the road, a flickering, sickly light danced in the foreground. A gypsy camp, I thought, and how still I stood! Then, while staring steadily at the pallid flame, I saw there was no one near it, and the truth flashed upon me. It was merely a will-o'-the-wisp. I laughed at my blunder; so did an owl. *Woo-roo-roo!* shouted the feathered imp in my ears. Never was sound more welcome. Now I was well at home. A hermit for a day loves company—this I learned; and the little red owl and I are old friends. I took his hooting as a hearty welcome, and with lighter steps followed the crooked wood road. Now every sound excited curiosity, no doubt; and when this is true, a walk in the woods, be it night or day, is an unmixed delight. Later, as the pale gray dawn sifted its meager light through the trees, I paused at many a familiar tree and shrub. All regrets had vanished, and I bade the swamp "Good morning" with a hearty shout, when the old sycamore loomed up before me, its scattered leaves gilded by the herald rays of the slowly rising sun. There was

scarcely a dozen rods between us, but that much of my journey was not to be accomplished. A huge old maple had fallen across the road, the course of a little creek had recently been changed, and bees were swarming about the hollow tree. It was plain that I must seek a new hermitage. But why any particular spot? There was no tree so inhospitable as to refuse me a shelter. But why seek shelter at all, under an unclouded sky? Placing my burdens on a mossy knoll, I sat down. Now, I thought, I am a hermit, and perhaps a fool. The latter thought nettled me, but what could I do? Still I vowed that I would not return empty-handed. I had met Nature half-way; would she make like advances?

Click-click-clatter, so it sounded, and I cut my meditations short. The work of the hermit was, I hoped, about to commence. Chatter, clatter, everywhere, as if every twig were busy; nor was all this varied volume of sound derived from but one source. There were squirrels overhead, and chipmunks among the dead leaves. Two downy woodpeckers were scanning, in close company, the dead limb of an old oak, and flitting everywhere were scores of kinglets and warblers. A host of tree-sparrows and white-throated finches filled the chinkapin shrubbery; while, dearest of all, a brave black-capped titmouse came almost within reach, looked me

boldly in the face, and twittered "Good morning." It was worth all the drawbacks of being a temporary hermit to be greeted so cordially. It is true the woods are never quite deserted, and yet it is not in them that birds most congregate; but here, this day, were more birds immediately about me than I ever saw before. More tree-sparrows directly from Canada than I saw in all my tramps there two months ago; and certainly more kinglets than I ever saw before. The chilly northeast storm doubtless had something to do with this abundance of birds, but this matters not. Here were birds in abundance. What can they teach me?

To think that with one glance of the eye more Canadian sparrows could be seen than I found in all my Canadian tramps two months ago! And they had all the freshness, too, of this brisk October morning. There was no listlessness, however long their journey may have been. *Snap—crackle*, these crisp words best describe their songs and movements; and when life snaps and crackles, whether it is our own or that of other creatures, it is life worth living. So marked is the difference between bird life now as compared with what we see of it in May that the same species are scarcely to be recognized as such. This is peculiarly true when the spring and autumn plumage are different, as

in the case of bobolinks, that now are flitting southward as yellow-brown reed-birds. With our recent arrivals, as well as all-the-year-round birds, it is now a season of fun and feasting. Life has few cares for them for months to come, and they appreciate the fact.

It was the old story. I was seeing too much. Had I not kept in the background, the day would have teemed with adventure, but I should have been less of a hermit. It was hard to single out some one small bird among a hundred. I turned from white-throats to kinglets, from woodpeckers in the trees to chewinks on the ground, but everywhere there was no end of bustle, if not confusion. Silent woods, indeed! No city could have shown a busier thoroughfare than the interlocking branches of the trees. The Stock Exchange was never noisier than when a crowd of grackles came rushing from the outer world and settled in a little cluster of white pines. Here seemed the opportunity of a lifetime, yet I was puzzled to know what to do. To merely catalogue the species as they came in view would have been absurd; to say that a flock of this or that species was feeding in the tree tops is equally uncalled for. Would there never come some startling incident? It came that moment. A swift-winged hawk dashed through the trees. I fancied I felt the fanning

of his wings upon my face. But, better than all, I saw something of the swifter tactics of threatened birds. Their darting earthward was simply, marvelous ; their clinging to the under side of branches was wonderful ; but, above all, the instantaneous recognition of danger and promptness to find a safe shelter struck me. After all, the sense of danger was ever present with these happy-go-lucky birds. Unless there was such a sense controlling them their movements could not have been so efficacious and so wholly free from confusion. Here is no loose interpretation that profound critics love to dwell upon. One has but to see a host of birds, and if of several species so much the better, to recognize how busily their brains keep working that the dangers really ever in attendance shall not rob them of all comfort.

Never shall I forget one tiny kinglet that squatted upon the blanket at my feet. Its wings were outspread, and, looking directly up, it seemed in utter despair ; but the shadow passed as quickly as it came, and when I innocently stooped to pick up and soothe the kinglet, it was too much itself again, and sped away as cheerily as though nothing had happened.

“What next?” I asked after a moment’s quiet ; for the kaleidoscopic effect of ever-shifting flocks of busy birds soon became monotonous.

I longed for hawks at the rate of one every ten minutes at least; so firmly fixed is one's desire for adventure. But the hawks came not. Instead, that matchless songster of sweet summer days appeared, and made the woods ring with his sharp metallic "*click.*" How I longed for his May-day melodies! But no, he chirped and teased; and then, as if ashamed, warbled a few faultless notes, and away he sped. The whole host of finches caught the magic of that song, and every white-throat whistled at his best. Up from the woods rose a swelling volume of sweet sound that should have bid murder pause. It only brought destruction upon their heads again. A rush of wings, a dark streak across the sky, and every bird was silent. But their plans varied in this. When the danger had passed they seemed of one accord too insecure at this spot, and left me to my meditations. Here again was a noticeable feature of bird life. Either each group had its leader, or every individual was at the same moment impelled by a like thought to seek safety, and all in one direction. This is improbable, and certainly the fact of like species flocking indicates that they find good in association and have means of communication, for, without some sort of language, flocking would be a source of danger. This has been shown, however, time and again. Birds

have language and an abundance of fore-thought, and so are better worth study than some would have us believe.

The woods were now, for the first time, really silent. I listened for several minutes, but could detect no sound, and was delighted at last when the wind sprang up and rustled the dead leaves. Then a faint chirp was heard, and a chickadee came within arm's reach. Its busy search for food reminded me that I had brought food with me, and I sat down to eat. Tossing the crumbs before me, they were scrutinized by the little bird, but not closely, and I was myself more the object of its curiosity. How I longed for it to perch upon me! But it would not, and my opportunity for a pretty story was lost. Birds do not like solitude. Where there is one chickadee, rest assured another is not far off; and soon there were two before me. And now I would that some critical know-all would tell us the meaning of such an action as this: these chickadees came together; they faced each other, twittered faintly in each other's ears, then looked directly toward me; then came nearer, and, alighting on a branch not three feet from my head, looked down at me, twittering all the while. Would they have done this had I been a stump? Were they not discussing me? He who says they were not may be a "thorough nat-

uralist," but he is something besides—no matter what.

And the chickadees passed by.

But the woods proved not an aviary only. I have spoken of squirrels. There were rabbits, mice, and a stray mink, also, there, and what host of hidden creatures, furred and feathered, we shall never know. The heyday of the wood's wild life, however, was well-nigh over. It was past noon, and rest was the order of the hour. What creatures I saw moved with great leisure, as if annoyed that they had to move at all. The mink crept along a prostrate log as though stiff in every joint, but when at the end of his short journey I whistled shrilly, with what animation it stood erect and stared in the direction of the sound ! How evident that this feature of the sense of direction is well developed ! Half concealed as I was, the mink saw nothing to rouse its suspicions ; it was merely curious or puzzled ; it was thinking. Here was an occurrence beyond the range of its experience. What did it mean ? The mink did not move a muscle, but stared at me. Then I commenced whistling in a low tone, and the animal became more excited ; it moved its head from side to side, as if in doubt, and needed but a slight demonstration upon my part to convert this doubting into fear. I whistled more loudly, and moved my arms. In

an instant the mink disappeared. There was not in this case a single act upon the part of the animal that differed from a timid and at the same time inquisitive child, and however much others may demur, I consider the mental activity the same in each.

Long before sunset the sky became clouded, the shadows in the wood were deepened, and wild life was better heard than seen. Then the resounding raindrops striking the crisp leaves dulled all other sounds, and bade me seek refuge. I had not long to search, and, without hesitation, pushed through a jagged opening into a huge hollow maple. It is seldom that such convenient shelters are unoccupied ; certainly this one was not.

Spiders in that hollow tree,
How they came and glared at me !
On trembling bridges overhead
To and fro in anger sped ;
But the fear they would arouse,
While unbidden in their house,
Failed my stubborn nerves to touch,
Though they threatened overmuch.
From the moss, with glittering eye,
Mottled snake went gliding by ;
With its forkéd tongue thrust out,
Wondered what I was about,
Standing in the hollow tree,
Wild-life's home, this century.
Centipedes, uncanny forms,
Slimy, slippery, noisome worms,

From the cracks and crannies there
Startled each from hidden lair,
Crept and crawled, above, below,
Threatened me with direst woe
If I chanced to cross their path,
If I dared excite their wrath.
From a distant nook afar,
Gleaming like a double star,
Eyes of owlet, full of fire,
Questioned my insane desire
Here within the tree to stand,
Trespassing on wild-life's land.
Why not in the outer world?
This the question at me hurled.
But I stubbornly refused
To be other than amused.
Nor till night I bent my way
Homeward, hermit for the day.

Snow-Birds.

IF my memory serves me no tricks, I have never known an October without snow-birds. This year, they appeared as early as the second day; and as I have seen them daily since, it has been a source of wonder that they should ever have been called "snow-birds." Peter Kalm, writing of them in 1749, remarks: "A small kind of birds which the Swedes call snow-bird and the English chuck-bird, came into the houses

about this time (Jan. 21). At other times they sought their food along the roads. They are seldom seen but when it snows." The same author, thirty pages further on, says the English called it "snow-bird," and the reason is that it is only seen in winter, "when the fields are covered with snow." This impression, which there is no reason to believe was correct when Kalm wrote, still prevails, and yet there is not a tittle of reason for associating the bird with snow, as there is with the snow-bunting, an Arctic bird that you may or may not see when the snow-storms come.

Neither Wilson nor Audubon gives any reason for such a name, and what has been written since is of little moment. Wilson's reference to one phase of the bird's habits would make the name "snow-bird" more appropriate, but Wilson repeated ill-considered hearsay in this case, for these birds care less about weather changes than many another. They enjoy a foul day, whether it rains or snows, and hunt for food wherever it is to be found. Being nearly black, of course they are very conspicuous against a white background, and not at all so when the ground is bare. Possibly this may have given rise to the name. Well, this miscalled bird is now here, and has been for three weeks; and to-day is twittering gayly over wilted asters, and

so intent on seed-hunting that I can almost reach it with my hand. It has always seemed to me an autumn rather than a winter bird, and is one of several that is loved because of association rather than for any marked trait of its own. I never see them but I recall my first experience in trapping. One December day, forty years ago, it was snowing, and I murmured that I must remain indoors. As a recompense, I was allowed to trap. A sieve was tilted up and rested upon a stick, to which was tied a string reaching to the kitchen door. A few crumbs were sprinkled under the sieve. How I watched! How quickly the stormy morning passed! The snow-birds came and went, and at last, spying a crumb that had not been covered, a bird hopped beneath the sieve. I pulled the string at the right moment. For once there was a happy mortal upon earth. How impetuously I rushed out to the sieve and, raising it, saw the frightened snow-bird fly away! Oh, the bitterness of my grief! My bird had been fairly caught, but it would not stay a captive. And I have had such adventures since. Painfully often have I failed to make good my captures. A deal of labor and empty hands at last!

But let us back to our ornithology. October 20th was a perfect day. There were snow-birds in the gardens and the old maiden-blush apple

tree was in bloom. Nutty October and flowery May, each a delight, and here commingled! There should have been music, but every bird was mute, and the hyla piped his one note at long-drawn intervals.

So undemonstrative in every way, so silent save the occasional faint twitterings, these birds of the summer-like afternoon might readily have been passed by unnoticed; but it will not be so later. They gather energy as the mercury falls, and when the next hoar-frost whitens the meadows and the uplands' weedy fields, then will they shake tall grass and rattle the dry twigs as you approach. They are timid birds, and your shadow or that of a hawk creates a riot in their ranks; but they find their wits as soon as they lose them, and if you but stand quietly, orderly, seed-hunting is promptly resumed. What, then, is their peculiar merit, that attention should be asked to them? I am sure that I do not know, unless it be that I love them. This is merit enough in my eyes; and who that spent his youth in the country but recalls the birds of winter? It may be that there was too much work to be done at other times of the year to give heed to the summer songsters; but never in winter were the days too short to set a rabbit trap, to follow a covey of quails, or, less murderously inclined, to listen to the squirrel's bark or

the chirping of the sparrows in the hedge. Seldom, indeed, are the snow-birds alone. There are several other species of the same family (the finches) here in the same weedy pastures, and far oftener all are singing than that any are silent. Autumn, either early or late, is never a dismal season. As you wander in the woods or near them, you can not say—

“I walk as one
Who treads alone
Some banquet hall deserted.”

What Summer took away with her Autumn has replaced. There has been a shifting of scenes, but the actors are as numerous as before. The round of the seasons is a serio-comic drama with no heroes, or with every creature one, as you happen to view it.

In midwinter, when the deep snows come—if they come at all—how effectually the snow-birds enliven what might otherwise be a dreary outlook! On the projecting twigs above the huge drifts they gather, and, plunging down deeply into the snow, find seeds on many a sturdy weed that winter winds have not cast down. Their curious antics at such a time, so vividly described by Lockwood, make us forget that the day is cold, and, whatever the weather, I would rather be among the birds and see them close at

hand—closer than is ever possible from my study windows.

Perhaps snow and snow-birds is too short a list of attractions for a winter-day outing. It is not for me; but I have never found it an all-inclusive list. There was never a snow yet, since the days of palæolithic man at least, that covered the tree-tops, and here the—

“*Chic-chicadee dee!* saucy note
Out of sound heart and merry throat”

is very sure to be heard, even with the mercury below zero. It accords well with the rippling twitter of the snow-birds, and completes the day's attraction, or should do so. How tiresome our northern summers would be without a bit of winter, now and then, wherewith to contrast them. It is strange, but true, that when the occasional rambler takes an outing he must have a whole menagerie at his elbow or votes the woods in winter a dismal solitude. It is seldom that our snow-birds have only the titmouse for company. Given a blackberry thicket, and the white-throated sparrows will be there and how gloriously they whistle! Overstaying cat-birds, here in New Jersey, will be a surprise, and their mid-summer drawling will sound strangely coming over snow-banks; but of late it is a feature of a winter walk. Winter, in fact, is overfull of sights and sounds.

October to March. For five months we have had snow-birds, and none the less a feature when the asters empurpled the hillsides than later when the fields were snowbound. What of them, too, as summer comes on apace? Even above the wreckage of a wild winter, snow-birds can be cheerful. Never so tattered and torn the rank growths of the dead year but the snow-birds have reason to rejoice. If not at the present outlook, then they take a peep into futurity and sing of what will be. Probably our world looks its dreariest in March, as the darkest hour of night is just before the dawn, but happily the gloom does not weigh upon snow-birds, and to know how cheerfully they can sing one must hear them then. Their whole souls are in their utterances, and when a hundred or more ring out their gladness, March sunshine grows the brighter, the winds are tempered, and many a yellow leaf becomes a golden blossom.

Blue Jays.

"WHAT is the most characteristic feature of November?" asked a shivering friend from town, as we stood with our backs to the rain-

laden winds. "Birds and blossoms," I replied. Of course he thought me trifling with him, and I asked if he expected me to say "rheumatism."

What have birds and blossoms to do with such a dreary outlook? This was evidently the tenor of my friend's thought, although he said nothing more. To him, as it was raining hard, the world was unutterably dreary, and he longed for the crackling blaze upon the andirons which he knew awaited us. In a few moments, as we skirted a bit of woodland, I remarked: "Blue jays are a feature of this month. See! here are half a dozen." They were very tame and full of merry ways. They hunted the leaf-strewed ground and played bo-peep among the lower branches of the oaks. They screamed, laughed, chattered, and at times uttered that peculiar flute-like note which sounds so strangely in the woods, particularly when the silence of mid-winter broods over all. My friend forgot that it was a dull November day.

These dandies in their cerulean suits can do no mischief now, and I love them for their vivacity. Their cunning shows out continually, and it needs not the dictum of the naturalist to learn that they are cousins of the crow. That they lived so largely upon eggs during May and June told against them at the time, and they were then the incarnation of fiendishness. Let the

dead past bury its dead. One can not be happy who is ever cherishing dislikes, and I find the blue jay of the present sufficient unto November days. For my part, he is right welcome to the woods as he finds them. While the six merry jays were before us, I picked a violet, a bluet, and a daisy, and offered them as proof that November blossoms were not a myth. There are, I assured my friend, more than a score of flowers to be found by a little careful searching. What, then, if Summer's glory has departed ; if her skies are no longer overhead ; her songs no longer fill the air ; the odor of her blossoms no longer scent the breeze ; is it not a poor wheel that can not spare one spoke ? Nature is not so niggardly with her gifts in November as summer tourists, for instance, are apt to suppose. November is comparatively bare, it is true, and positively ragged ; but it is not always safe to judge a man by his coat.

A jay is something more than a bird with blue feathers. October 23, 1889, it snowed violently for three hours, and the ground was white. Masses of snow, too, clung to the limp foliage that remained, and gave a curious aspect to the wooded hillsides. It was then that the jays were moved to unwonted activity, and I saw them at their best. The snow puzzled them, and, being intent upon their own affairs, they

paid no heed to my proximity. "What does this mean?" was the question I fancied each asked of his comrade, and then a dozen would attempt explanation at the same time. Such a chattering! Although the air was thick with snow, it did not muffle the harsh sounds—noises as distracting as cracked sleigh-bells. A great company of these birds had been for a week in the hillside woods, sociably inclined but not intimately associated. The snow brought them together, and after an hour of vain discussion, as a compact flock, they left the woods and flew in a direct line for a cluster of cedars half a mile away. It appeared to me that some one of these birds made the suggestion that the cedars were a better protection than half-leaved oak woods, and all took up with it. At any rate, that is where the birds went and remained until the snow-squall was over. Of course, it might have been a mere coincidence, and all their chattering mere meaningless noise, and so, to the end of the chapter; but I am not disposed to view bird-life from such a stupid standpoint. It may suit the "feather-splitters," as Burroughs aptly calls them, to look upon birds as mere conveniences for their nomenclatorial skill, but he is happy who escapes them and seeks directly of each bird he sees to know what thoughts well up from its little but lively brain. Now, I have

never seen, but upon this occasion, a large number of blue jays, a dozen or more, fly in a compact flock. Here, on the home hillside, and I know nothing of them elsewhere, they wander about during the autumn in companies, but always in an independent manner, as if a very general knowledge of the company's whereabouts was quite sufficient; but to-day such a method would have been impracticable. The air was too thick with snow, and therefore, predetermining the direction, they gathered upon the same tree, and then, when closer together than ever I saw red-winged blackbirds, off they flew. To say that this simple occurrence does not prove beyond question a wide range of mental faculties is to deny that two and two make four. Probably the unhappy growler who descants upon the all-essential importance of "the element of accuracy," which no one denies, will find this incident contrary to the officially recorded conditions of jay life, and insist that I saw red-winged blackbirds and mistook them.

An ornithologist once wrote to me, "Some of your birds in New Jersey have strange ways," but this is not true in the sense he intended. Birds about home are simply, here as elsewhere, wide-awake, cunning, quick to scent danger, and wise enough to suit themselves to their surroundings. This latter fact goes far to explain many

a point, for it must be remembered that it is the country that decides the bird's habits, and not that the latter are a stereotyped feature of the country. The same people may dwell among the hills and upon the sea-coast, but how different are the mountaineer and the 'long-shore man ! Concerning birds, the difficulty lies in the fact that so many people, even naturalists, are too little concerned with birds' ways, and rest content with a mere knowledge of their names. I once attended, with a prominent naturalist, an ornithological meeting. There were a score of bird-men present, and very soon they fell to egg-measuring ! My companion fell asleep !

But what of the flock of blue jays ?

They had not long to wait for clearing weather. Soon the sun shone brilliantly, and Nature for a brief hour wore a strange garb. Many a tree was yet green, many were brilliant with gold and crimson, and all were flecked with masses of glistening snow. It was a splendid spectacle, a swiftly fading pageant, that, like a glowing sunset, is remembered long after it has passed away. And how the lively blue jays rejoiced at the return of the sunshine ! "Now for the oak woods again !" I could hear them scream, even though so far away ; and sure enough, one after the other came trooping back to the same trees whereon they had sported when the snow

commenced. How different now was their every movement from the time that they counseled together and took refuge in the cedar! Now, again, they are the blue jays that every country lad well knows; when I saw them but a short time ago, they were almost as strangers to me. It is something to have an outing during an October snow-storm; when the next comes, let me have blue jays again for company.

It was two weeks later when I next saw the same birds, and under widely different circumstances. November had accomplished much in the way of marring the fair face of Nature. Scarcely a leaf was left upon any tree except the oaks, and the damp mist that veils the meadows during November was never denser, gloomier, and more forbidding than on the 8th of the month. Long before sunrise I was out of doors, and not a bird greeted me until I came to the creek-bank, when out from gloomy depths came the shrill scream that of itself is hideous, but at such a time almost musical. I tried in vain to locate the sound, but could not while the fog lasted; but this mattered little. All other birds seemed depressed and moody. Not a sparrow chirped until the sun made the world a little more distinct; not even a robin, if there were any about, cared to salute such a sunrise. It was something then to have one brave heart making merry, and

I shall long thank the jays for cheering a lonely traveler.

An hour later, the birds thought better of the day, and every hedge-row rang with merry music, but the pleasure of the earliest sounds I had heard was not forgotten, when their continuing screams marred the melody of red-birds and foxy finches. But why were they so persistently noisy, and so confined to one spot? My curiosity was aroused and I threaded a tangled brake to my sorrow. In a cluster of sassafras sprouts were several jays and all intent upon an object upon the ground. I hurried on, held back by green briars that were really my friends, and finally reached the spot. By mere accident I escaped a serious encounter with our most treacherous if not dangerous mammal. A skunk had caught a blue jay and scattered its feathers far and near. The victim's companions were bemoaning its fate or berating the murderer, I know not which, nor did I pause to determine. I assumed the former as more creditable to them and so score another point in favor of these maligned birds.

What though there are violets still in the meadows, Nature is rugged now; and, among the gnarly branches of the oaks, better the shrill cry of the jay, as the north wind sweeps by, than the soothing melody of summer's tuneful thrushes. November needs all the help that she can get to

escape our malediction ; and the cry of the blue jay prompts me, at least, to be charitable.

The Growth of Trees.

IN the spring of 1835, a considerable number of white pines were planted about my residence. Of these fifteen are still standing, and are apparently in full vigor. My uncle, who planted these pines, states that they were of very uniform size, their trunks measuring about two and a half inches in diameter. At present the smallest of the series measures forty-three inches in circumference, four feet from the ground, and the largest seventy-nine inches. Nine of them vary from sixty-two to sixty-eight inches. The average circumference of the fifteen trees is sixty-two and a half inches.

These trees were not placed at uniform distances from each other, and some show the certain ill-effect of overcrowding. This is conspicuously the case with three of the pines, and these have suffered. Had the planting been done with greater reference to the future, and an equal chance given each tree, the average circumference would have been greater by at least three inches ; the girth of the twelve largest

being sixty-five inches. As it is, including the three somewhat stunted trees, the growth (circumferential measurement) has been sixty inches in fifty-four years; an annual increase of one and one ninth inches.*

These pines stand upon a bluff, composed of compact ferruginous sand of great depth, and are exposed to the full sweep of the western and northern winds. In the matter of soil and exposure they have had equal chances. It is not readily seen, if at all determinable, why more of these trees should not have reached the maximum size, and become stately trees, which, in a sadly deforested landscape, are commanding objects.

A year later two wild cherries were planted near the pines by the same person. "These trees were very small," he writes me, "as I pulled them up with my hand and carried them to the yard, as one would a walking-stick. Probably neither was more than an inch in diameter."

* Since the above was written, one of these pines has been felled, and the rings of annual growth carefully counted. They are sixty in number, which accords with the history given above of the planting, now nearly fifty-five years ago. It may be well to add that, while each ring is distinctly defined, there are several much larger than the others, and a general increase of the width of the rings upon the southeastern side of the trunk.

These trees are in full vigor to-day, one measuring seventy-three inches and the other sixty-eight in circumference. The former is fully fifty feet in height, and the crop of fruit it bears annually is enormous,

In 1836 my grandfather found among a lot of peach-trees that he had purchased an elm (*Ulmus Americana*) which "was a mere switch." It was planted in an out-of-the-way corner, and is now a splendid tree, with a spread of branches measuring seventy feet. The circumferential measurement, at a height of four feet from the ground, is one hundred and three inches.

Of the oaks, cedar, and beech, of which I have many fine specimens upon the farm, I have not been able to gather any definite data, but it would appear that the growth is exceedingly slow, after a certain term of years. My uncle is very positive that a black oak in the lane and a red cedar near by have not increased materially in growth in the past half-century. He believes the cedar to have "quite stood still," and this may not be so strange, for it is known to be considerably over one hundred years old. It was a conspicuous road-side tree in 1802. It measures but eighteen inches in diameter.

Fossil Man in the Delaware Valley.

THE modest, peaceful valley of the Delaware River, from the head of tide-water southward, is as little suggestive of the Arctic Circle, for at least nine months of the year, as do its low and weedy banks in summer suggest the tropics. On the contrary, every tree, shrub, sedge, beast, bird, or fish that you see above, about, or within it is a feature of a strictly temperate climate. Nevertheless, a dim recollection of more stirring times still clings to it, and the year not unfrequently opens with the river firmly ice-bound. Over its shallows are often piled great masses of up-river ice, borne hither after a storm by the swollen current. Often the broad and shallow channel is effectually closed, and the river becomes, for the time being, a frozen lake.

But the ice, of late centuries, has not been able to hold its own for any significant length of time. The increasing warmth of the sun, and the south winds with their accompanying rains, soon start the little icebergs oceanward, or melt them when they are securely stranded. Except a few scattered masses along the shady shores, the river, by April, is a quiet, shallow, tide-water stream again.

No appreciable amount of detritus is now

brought from the up-river region by a single winter's accumulation of ice. As the river and its shores are to-day, so they were a century ago—perhaps for many centuries; but the winter of our varying year is a mere puppet-show compared with what New Jersey winters once were, and the culmination of arctic rigors gave our Delaware Valley, in that distant day, a far different aspect; and, with each succeeding glacial flood, more and more sand, gravel, and great bowlders were rolled down from the rock-ribbed valley beyond and spread upon the open plain through which the present stream unruffled flows.

The land was somewhat depressed then, and the water flowed at a higher level, but nothing unfavorable to man's existence obtained in the whole region. As a skilled geologist has pointed out, "The northern ice was one hundred miles away, and did not prevent primitive man from assembling about the low and hospitable shores of the miniature sea, . . . and over the bosom of the bay, little affected by tide because of its distance from the ocean, and little disturbed by waves because of its shoalness, palæolithic man may have floated on the simplest craft, or even have waded in the shallow waters." Ay ! may have ; but did he ? What evidence is there that that most primitive of mankind, who

left such abundant traces of his presence in the valley of many a European river, and also in Asia and Africa, was ever likewise here in eastern North America? It is precisely the same evidence—rude stone implements of the simplest type, often but slightly modified cobbles merely, that were found to be more effective by having a chipped and jagged edge, rather than the smooth and tapering one that water-wearing produces. These same worked stones—in other countries always of flint, but in New Jersey of argillite, a slate-like stone that has been altered by heat, and possesses now a conchoidal fracture—these occur in the Delaware gravels; and the vivid pictures of glacial time, with primitive man a prominent feature thereof, that have been given by Wright, Wilson, Haynes, McGee, Upham, Cresson, Babbitt, and others, are doubtless familiar to all readers of recent scientific literature.

In associating man with ancient river valleys, we are too apt to think only of the stream, and ignore the surrounding country. Though largely so, palæolithic man was not strictly an amphibious creature; for instance, on each side of the ancient Delaware River extended wide reaches of upland forest, and here, too, the rude hunter of the time found game well worthy of his ingenuity to capture, and so powerful that all

his wit stood him well in need to escape their equally determined efforts to capture him. While the seal and walrus disported in the river, while fish in countless thousands stemmed its floods, while geese and ducks in myriads rested upon the stream, so, too, in the forest roamed the moose, the elk, the reindeer, the bison, the extinct great beaver, and the mastodon, all of which, save the elk, had long since left for more northern climes when European man first sighted North America.

The association of man and the mastodon is somewhat startling to most people; but, as has been time and again conclusively shown, it is no unwarranted fancy. We are apt to consider the mastodon as a creature of so distant a time in the unrecorded past, that man must necessarily have appeared much later upon the scene. The truth is, comparatively speaking, the creature so recently became extinct that, in all probability, our historic Indians were acquainted with it. Certain it is that, in the distant long ago of the great Ice age, the mastodon existed, and equally certain that with him lived that primitive man who fabricated the rude implements we have described. The bones of the animal and the bones and weapons of the man lie side by side, deep down in the gravels deposited by the floods from the melting ice-sheet. In February, 1885, I

walked to and fro over the frozen Delaware, where it reaches a full mile in width, and saw at the time many horses and sleighs passing from shore to shore. I recalled, as I walked, what the geologists have recorded of the river's history, and it was no wild whim of the unchecked imagination to picture the Delaware as a still more firmly frozen stream ; so firmly ice-bound, indeed, that the mastodon might pass in safety over it—not cautiously, even, but with the quick trot of the angry elephant—and picture still further a terror-stricken Stone-age hunter fleeing for his life.

Just as our brief yearly winter gives way to milder spring, so, as the centuries rolled by, the mighty winter of the Ice age yielded to changes that were slowly wrought. Century by century, the sun's power was exerted with more telling effect ; constantly increasing areas of northward-lying land were laid bare, and the forest followed the retreating glacier's steps. This great but gradual change had, of course, its influence upon animal life, and many of the large mammals that have been named appear to have preferred the cooler to the warmer climate and followed the ice-sheet on its northward march.

In the unnumbered centuries during which these changes came about, man increased in wisdom, if not in stature, and the rude implements

that characterize the lowest known form of humanity—palæolithic man of prehistoric archæology—were gradually discarded for smaller and more specialized ones. This change was doubtless the result of faunal changes that required a compound instead of a simple implement, as an effective weapon—a small spear-head attached to a shaft, instead of a sharpened stone held in the hand ; and we find now, as characteristic of conditions geologically later than the gravel-beds, a well-designed spear-point, larger than Indian arrow-heads, of a remarkably uniform pattern, and which might readily be supposed to be the handiwork of the historic Indians. But let us examine into the history of these objects a little closely. In the first place, the conditions under which these rude spear-points are found, as a rule, are very significant. In certain upland fields, never far from water-courses, and which were the high, dry, habitable localities when the later gravel areas were yet comparatively low and swampy, these objects are found in great abundance, and very often not associated with the familiar forms of Indian implements. Again, they also occur in the alluvial mud which has been for centuries, and is still, accumulating over the tide-water meadows that skirt the banks of the Delaware River from Trenton to the sea. Now, it may be maintained that we are without warrant in as-

suming that the age or object of any given form of stone implement can be determined by the character of the locality where it happens usually to be found—exception, of course, being made to the palæolithic implements of an earlier geological period. To a certain extent this is true. A bead is none the less an ornament, whether dredged from the river-bottom or found in an upland field; and yet how very seldom does any implement or other relic of the Indians occur, except where we should expect to find it! In basing any conclusions upon the characteristic features of a locality where implements are found, it is necessary to determine if there has been any recent general disturbance of the spot. This is readily done usually, and the principal barrier to a logical conclusion is removed. Long experience in archæological field-work has fully convinced me that, in the vast majority of instances, stone implements are practically in the same position that they were when buried, lost, or discarded. A single specimen or many of them might mislead; but it becomes safe to base a conclusion upon the locality, when we have the material in such abundance as in this instance of these rude spear-points, and find that fully eighty per cent are from the alluvial mud of the river meadows, or such isolated upland areas as have been described. But more significant than all else is the

fact that these simply designed spear-points are all of argillite, the same material of which are made the rude implements found in the gravel. There is, therefore, no break, as it were, in the sequence of events in the occupation of the region by man—no change of race, no evidence of an abrupt transition from one method of tool-making to that of another, but merely an improvement that was doubtless as gradual as the change from the epoch of glacial cold to that of our moderate climate of to-day. What at first sight appears fatal to the views here expressed is that a people so far advanced as to make these spear-points should have made many other forms of stone implements; but only the former are found deeply buried in the mud of the river. If, as is believed, the spears were used in fishing more than for any other purpose, they alone would be likely to be lost. Other objects in use upon their village sites would seldom, if ever, be taken to the fishing-grounds; and, as a matter of fact, there are found numbers of stone objects of a rude character, usually considered of Indian origin, but which are identical with those used, for instance, by the boreal Chukches. In Nordenskiöld's Voyage of the Vega is described a series of stone hammers and a stone anvil which are in use to-day for crushing bones. Every considerable collection of "Indian relics" gath-

ered along our seaboard, from Maine to Maryland, contains examples of identical objects. Of course, the Indians might have used—indeed, did use—such hammers and anvils, but, considering all the evidence, and not merely a part of it, it does not follow that all hammers and anvils are of Indian origin. I have only made incidental mention of the historic Indian, and nothing further is necessary. He plays an important part in our early history, but his origin is yet to be deciphered from many sources. His arrival in the river's valley dates, as we reckon years, long, long ago ; but no evidence is as yet forthcoming that it was prior to the valley's practically present physical aspect.

Let us consider these rude argillite spear-points, and the circumstances under which they occur, a little more closely. In this magazine (January, 1883), I based the opinion that these objects were of an earlier and other than Indian origin, because of their occurrence in so many localities at a depth greater than that at which jasper and quartz arrow-heads are found. In other words, the plow unearths the Indian relics in great quantities ; but, my digging deeper, objects of argillite are found in significant numbers. In this earlier communication to the magazine, reference was made only to scattered objects ; but now I propose to call attention to strictly surface-

found specimens, where they have been discovered in such abundance as to plainly indicate the former sites of camps or villages. If such localities are really pre-Indian in origin, then it remains but to consider the fate of this earlier people; but, before indulging in speculation, what of the facts? The results of my labors may be summed up in a brief account of a visit to one locality; for all subsequent and preceding visits to distant points resulted similarly.

In two instances, collections which I studied were of such magnitude, and had been brought together with such care, that they had a decided bearing upon the question. The particular fields from which the great bulk of the specimens had been taken were studied most carefully, and it soon became evident, in each case, that the reported commingling of all forms of stone implements was more apparent than real. The physical geography of each locality plainly showed that for a very protracted period these spots had been habitable and inhabited. It was evident, in each case, that a very undulating surface had existed, through which meandered a small stream that had long since disappeared. These areas of hillock and dale had been densely wooded, with here and there a little clearing; and now, for nearly two centuries, plowed over almost every year. What, then, should we expect, presum-

ing that the relics of two peoples had been left upon a tract of some two hundred acres? First, the tract was deforested, which would lead to much disturbance of the surface soil; secondly, the stumps of the trees were uprooted, which would lead to a greater disturbance; and, lastly, constant plowing, exposure of a raw surface to winds and rain, and the erosion due to the flooding of the stream that drained the tract, would result inevitably in the moving of objects, as small as arrow-points, to considerable distances from where they were left in Indian or pre-Indian times. It would be strange, indeed, if any evidence of earlier and later occupancy had withstood such vicissitudes; and yet such was the case. The highest ground afforded ninety per cent of the specimens I was able to find, of argillite; while in the low-lying area of the one-time stream's tortuous bed the argillite and jasper implements were commingled, with a preponderance of jasper and quartz in the ratio of seven to two. It was evident that the washing down of the higher ground and partial obliteration of the valley had transported the argillite and mingled it with the jasper, and not generally commingled and brought to certain points the equally scattered objects made of these minerals. During the summer of 1887 a very careful and intelligent observer reported to me that, in a field not far from

where I live, he had found a considerable deposit of argillite chips, rude arrow-heads, and bits of pottery; but that there was no trace of jasper or quartz, or indeed of any other mineral. As I had collected Indian relics by the hundreds, in this same field, I refrained from visiting the spot, but requested my friend to examine the locality again with great care, and report to Prof. Putnam, of the Peabody Museum at Cambridge, Massachusetts. What was the result? My friend reported, briefly, that the spot was one uncovered by heavy rains, and formed part of the bank of a brook that crossed the field (this brook, I would state, was a considerable creek in 1680); that the argillite chips, rude arrow-points, knives, scrapers, and bits of pottery were found at a common level, and about fifteen inches below the present surface of the field. Prof. Putnam, in acknowledging the receipt of the specimens and report as to their discovery, replied that "the pottery was of unusual interest, as it was exceedingly rude and differed very greatly from any that Dr. Abbott had sent from the same general neighborhood." As the bits of pottery from this general neighborhood that I have collected amount to hundreds of thousands, it would seem that Prof. Putnam's remarks have a good deal of significance.

As having a most important bearing upon

this general question, it is well to refer to the results of others' labors in the same general field. In an address before the American Association for the Advancement of Science, at its Cleveland (Ohio) meeting, August, 1888, I referred to the Lockwood collection, now at the Peabody Museum at Cambridge, Mass. This series of ancient stone implements is one of exceeding value, because the objects are nearly all from shell-heaps on the coast of New Jersey. When arranging this collection, I was much impressed with the fact that the argillite implements, of which there were many considerable lots, were all labeled by Prof. Lockwood as having been found alone—i. e., not associated with similar objects of jasper or quartz; and again, that with the argillite was much very rude pottery, that bore little resemblance to the fragments of earthenware found in other places associated with the jasper, quartz, and chert implements. Subsequently, Prof. Lockwood informed me that, while these various finds did not vary in depth, they were very marked otherwise, and he did not recall any special "find" where the commingling of the two forms indicated that they had been in use at the same time.

Taking a hint from little brooks and the surrounding fields, let us consider, in conclusion, the more pretentious rivers and their surround-

ing uplands. Will the same results be obtained? Can we venture to reach out from the particular to the general? These were the questions that I frequently asked myself, and, after many a weary tramp and toilsome digging over a wide area, I am happy to state that I believe my efforts have been crowned with a full measure of success. What held good in a particular field holds good of a county, and what I now claim for the tide-water portion of the valley of the Delaware I believe is true of a much more extended area.

In no case have I been able to find stone implements significantly distributed over a considerable space—i. e., tracts of five hundred to a thousand acres—except where there was, or very recently had been, running water. The ground then to be examined was either the high land that shut in the valley, or the valley itself, limiting that term to the banks of the stream and the immediately adjacent meadow tracts; exception being made where the bank of the stream was and always had been very precipitous. In such a case the brow of the bluff would be equivalent to the meadow or low land of a gently sloping valley.

In every such instance—and I have made or have had made many careful examinations of river and creek valleys—the result was the same:

a very marked preponderance of argillite implements on the crests of the uplands, and a very great excess of jasper and quartz on the bottom-land, or that directly adjacent to the stream. From this condition I am led to infer that, when these higher points were occupied, the present streams maintained a uniform flow as high as the freshet stage of these water-courses ; and the fact that an Indian village site near by will be much nearer the river or creek shows clearly, I hold, that on a small scale the same conditions were repeated that occurred in the gradual change from glacial to post-glacial times. The volume of water in all our streams, comparing century with century, is gradually lessening.

Comparing then the rude objects of argillite, specialized as they are, with the magnificent flint-work of the historic Indians, I would designate the former as *fossil implements*, the latter as *relics*.

To this point I feel that I have been handling facts only, and deducing from them only logical inferences ; but now looms up the natural and ever-interesting question, Who were these people? The origin of any race is a difficult problem to solve, but none can compare with these misty vestiges of prehistoric humanity. It seems to me but one inference is permissible : they who fashioned these rude argillite imple-

ments were the descendants of palæolithic man, and his superior in so far as a knowledge of the bow and arrow and rude pottery indicates. Beyond this, perhaps, we can not safely venture. Prof. Haynes has recently observed, "The palæolithic man of the river gravels at Trenton and his argillite-using posterity the writer believes to be completely extinct." While this at present seems to be the generally accepted conclusion, there is a phase of the subject that merits consideration. May not this "argillite-using" man have been a blood-relation of existing Eskimos? To accept the view of Prof. Haynes that "argillite" man became extinct infers an interval of indefinite length, when man did not exist on our central Atlantic seaboard; but if we may judge from the abundant traces of man that have been left and of the relation as to position that these three general forms—palæolithic, later argillite, and Indian—bear to each other, it would appear that, in the valley of the Delaware, at least, man has not for a day ceased to occupy the land since the first of his kind stood upon the shores of that beautiful river.

By referring these intermediate people to the existing Eskimos, I would not be understood as maintaining that these boreal people were directly descended from the argillite-using folk of the Delaware Valley, but that both were derived

from palæolithic man ; in other words, that with the disappearance of glacial conditions in the Delaware Valley, and the retirement northward of the continental ice-sheet, if such there were, the people of that distant day followed in its tracks, and lived the same life their ancestors had lived when northern New Jersey was as bleak as is Greenland to-day ; but that not all of this strange people were so enamored of an arctic life, and that many remained and, with the gradual amelioration of the climate, their descendants changed in their habits so far as to meet the requirements of a temperate climate. This explanation, it seems to me, best accords with known facts.

It is fitting, after a long tramp in search of human relics or remains, still so abundantly scattered over and through the superficial soil, to halt, at the day's close, upon the river's bank, and rest upon one of the huge ice-transported bowlders that reach above the sod. From such a point I can mark the boundary of the latest phenomenon of the valley's geological history, and seem to see what time the walrus and the seal sported in the river's icy waters ; what time the mastodon, the reindeer, and the bison tenanted the pine forests that clad the river's banks ; and what time an almost primitive man, stealing through the primeval forests, surprised and capt-

ured these mighty beasts—what time, lingering by the blow-holes of the seal and walrus in the frozen river, surprised and killed these creatures with so simple a weapon as a sharply chipped fragment of flinty rock. And, as the centuries rolled by, and the river itself lessened in bulk, until it but little more than filled its present channel, there still remained along its shores the more cultured descendants of the primitive chipper of pebbles. As a savage, so like the modern Eskimo that he has been held to be the same, this pre-Indian people still wrought the argillite that their ancestors were forced to use for their palæolithic tools; and as these spear-points are being gathered from the alluvial deposits of the more modern river, I can recall to their accustomed haunts this long-gone people, who, ere they gave place to the fierce Algonkin, were the peaceful tenants of this river's valley. Then as we gather the beautiful arrow-heads of jasper and quartz, and pick from superficial soils grooved axes, celts, chisels, curiously wrought pipes, strange ornaments, ceremonial objects, and fragments of pottery, literally without number, we marvel at the skill of those who wrought them, and faintly realize how long these comparatively recent comers must have dwelt in this same valley, to have accumulated such an endless store of these imperishable relics.

We rightly speak of the antiquity of the Indian, but remote as is his arrival on the Atlantic coast, it is modern indeed, in comparison with the antiquity of man in the same region. We can think of it, and perhaps faintly realize it, as "time relative," but in no wise determine it as "time absolute."

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