Toronto Field Naturalists' Club

440

MARCH MEETING

Monday, March 7th, 1960, at 8.15 p.m.
at the
ROYAL ONTARIO MUSEUM

JOURNEY INTO SPRING. Mr. Paddy Carey's superlative film is centred in and around Selborne, England, home of the immortal Gilbert White. Many times an award winner, this is regarded as one of the finest natural history films ever made. Should his busy schedule permit, Mr. Carey may be present to introduce his film.

A DAY AT F.O.N. CAMP. A glimpse of life at F.O.N. Camp through the medium of slides generously lent by Mr. John R. Heron of Montreal and by Mr. Graham Atkin of Billie Bear Lodge, Huntsville. Commentary by Mrs. J.B. Stewart, secretary-hostess of the Camp, assisted by Mr. Atkin at the projector.

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THE BOTANY GROUP will meet on Thurs., March 17, at 8 p.m., at the library, Eglinton Public School, Eglinton & Mt. Pleasant. Speaker: Dr. Margaret Heimburger, Faculty of Botany, University of Toronto. Subject: "Plants of Field and Roadside." Illustrated with slides by Mr. Marshall Bartman.

OUTINGS. Sat., March 19, at 9 a.m. Cedarvale Ravine. Birds. Meet at north end of Boulton Drive at ravine entrance. Leader - Dr. R.M. Saunders.

Sat. & Sun., March 26 & 27. Sat. & Sun., April 2 & 3. We suggest a trip to Long Point to see the spring migration of whistling swans. Drive to Simcoe via Hwy. #3. Go south from Simcoe on Hwy. #24, then turn off for Vittoria, St. Williams and Port Rowan. The entrance to Long Point Park is a short distance west of Port Rowan.

JUNIOR FIELD NATURALISTS will meet on Sat., March 5, at 10 a.m. at the Museum Theatre. The Mammal Group will be in charge.

AUDUBON SCREEN TOURS. Tues., March 29 and Wed., March 30, Eaton Auditorium, at 8.15 p.m. We are proud to present a Canadian speaker, Mr. Chester P. Lyons, of Victoria, B.C. The Right to Live depicts the colourful plants and animals in each of the five altitudinal life zones from the west coast to the rugged mountain peaks, as Mr. Lyons skilfully weaves the story of how man should manage his domain for the benefit of all. Tickets $1.25, available from Eaton Auditorium box office ten days before the lecture.

1959 BIRD CHECKING LISTS. For the convenience of our bird-watching members we have obtained a supply of Royal Ontario Museum field-checking lists. These may be obtained from the Secretary at the meeting or picked up at her home. Sorry, no mail orders. Price, 5¢ each.

THE HAMILTON NATURALISTS' CLUB announce their first International Exhibition of Nature Photography, to be held in April. Members of the T.F.N. are invited to submit entries. Closing date, March 25th. For mailing address and further particulars please telephone the Secretary, HU 1-0260.

President - Mr. A.A. Outram

Secretary - Mrs. H. Robson,
49 Craighurst Ave.,
HU 1-0260.

Number 170 February 1960

The grapevine, that very efficient means of communication employed by birdwatchers and other naturalists, has been working at top speed recently. Whether this is the result of an unusual number of odd birds choosing to spend the winter with us, or because an unusual number of birdwatchers are busily chasing after the birds is hard to say. The end product is the same, a high number of reports and many dashings hither and yon, most of them successful.

Most astonishing of all the reports was the one from Dr. Donald Gunn on the evening of January 20, to say that there was nothing less than a grasshopper sparrow staying at his feeding station. This bird is none too easy to find around Toronto in summer; in winter it has been totally unknown. Had the call not come on the verge of evening I would have gone out at once. As it was I arranged with my wife to pick me up with a lunch as soon as my morning class was finished so that we could make the trip to Port Credit during the lunch period.

We left at 12.15, reaching the Gunn's home at 12.50. No-one was at home but since they knew that we were coming they kindly left the front door open. We went in, divested ourselves of coats and overshoes, spread out our lunch on the kitchen table where we could sit and watch the bird feeders, and in three minutes had the grasshopper sparrow in view!

It was feeding on the snow beneath a settle feeder on which seed was strewn, some of which had spilled onto the snow. A large group of house sparrows were in attendance at another ground feeder near the hedgerow. They paid no attention to the little sharptail but soon four tree sparrows flew in to the feeder where it was. As soon as they arrived they took exception to the stranger, dashing at it threateningly and finally ousting it. The grass hopper sparrow retreated to some unseen shelter near the house, coming out again as soon as the cantankerous tree sparrows left.

Soon all the birds in the vicinity flew up, either taking off or finding shelter in the midst of trees and bushes. We could not see what had frightened them, and thought that perhaps we had done so ourselves until we saw a male

sparrow hawk alight on a wire over the hedgerow. As the feeding birds had been inexplicably nervous before the falcon's arrival it probably had been visible to them though not to us, perhaps being on top of a nearby TV aerial.

Of the identity of the grasshopper sparrow there could be no doubt. Its tiny sharp tail was the most noticeable mark, this being in obvious contrast to the longer, fuller tails of the tree sparrows and house sparrows. The heavy lining on the back, the slightly-lined underparts with a yellowish background, the characteristic dumpy shape and over-sized light-colored bill, the whitish eye-edging, all betokened the juvenile grasshopper sparrow. Unbelievable as it might be, here was one of this kind in winter, the first ever to appear in our region at this season, almost certainly the first winter record for Canada. It really picked the right place to turn up too, the feeding station of one of the most active birders anywhere around.

When the little sparrow disappeared this second time it again retreated to cover near the house. On peering out the back door window I could see that there was a small pine tree beside the back stoop. It must be in or under this tree was our guess, but we did not go out for fear of disturbing it.

Whilst the sparrow hawk stayed no birds returned save one purple finch that ventured bravely into the top of the tree nearest the falcon and there thrust up its "crest" vigorously many times at the predator. Such a performance I had never seen. Indeed, that a purple finch could be "crested" had never occurred to me, and the altered appearance of the bird caused by this action was so great that it was necessary to study it for quite a while before being sure of its identity.

Ross Gunn, Dr. Gunn's son, came in while we were still watching the hawk. When he saw what was going on, and heard that the sparrow had gone to cover, he said that it must be under the steps as that was where it always sought refuge. He then went to the back door, stepping out in order to scare the falcon which obliged by scaling off into the neighbouring orchard. We thought he would frighten away the sparrow too but he did not think so. In this he was quite right for when he went around by the garage so as to get a better look under the steps he immediately signalled that our bird was in place. Thereupon we also tried to go out the back way but in doing so upset the garbage can. This was too much for the sparrow, only a few feet away, and it flew.

Not until we had returned to the kitchen and I looked out the north window did we know that it had merely dashed around the jutting ell of the house and taken refuge in a narrow, protected nook between an overturned wheelbarrow and the house wall. It was the light-hued striping on the head--I was looking down the bird--that gave the sparrow away. Otherwise it merged almost perfectly with the dun-coloured earth which was free of snow for a few inches beside the house. As we watched the bird recovered from its fright and began to pick up something from the exposed earth, then off the uneven concrete surface of the house's foundation. Soon it was busily at work at this job. What was it getting? Grit? Weed seed? Insect eggs on the wall? Even hibernating insects, perhaps? Whatever it was there was obviously an attraction in it for the bird.

Ross told us this sparrow had been around for several days and had stuck closely to the area in which we saw it, spending most of its time when not feeding under the little pine or the back steps. Obviously it had found both

shelter and food, a combination that must have been a lifesaver during the recent icy days. It would naturally stay as close as it could to such a haven.

Since the presence of this rarity became known there has been a steady parade of birders from miles around to the Gunn doorstep, and some people have seen for the first time in their lives at this winter feeding station a bird they could normally only hope to see in the hot dry fields of summer. For myself it brought my total winter's list of birds, seen in the Toronto region since 1934, to 144 species.

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The grapevine sounded again, most urgently, on Sunday, January 24th, just as we were finishing dinner. We had been to church, and were entertaining students for tea, so I had no intention of going out birding at all. But when Bob Trowern called to tell me that there was a saw-whet owl in a spruce tree beside Mrs. Bunston's feeding station across the street from his house I was stirred to action. Making a rapid calculation of time I realized that I could make the trip and get back to my house in time for the students at 4.00 if Bob would meet me at the Jane Street end of the Bloor car line. He readily consented, so off I went. Having proper Sunday clothes on already it didn't matter if I got home at the last moment.

As it turned out I had to run for a bus on Avenue Road, then hurry to catch the Bloor car, so that I was five minutes early at Jane Street. Bob arrived at 2.00, drove me to the Bunston's place directly, having phoned Mrs. Bunston to make sure that the owl was still there. We walked in behind the house, birds scattering from feed on the ground as we entered. Bob quickly located the owl in the middle of a spruce tree, and I was looking at it when Mrs. Bunston appeared at the window. As she did all the feeding birds swept into the air or into hiding. A hawk was flying over. Mrs. B. called that it was "the goshawk"--she had seen one around off and on for several days. When I quickly switched my attention from owl to hawk I was most gratified to find the big goshawk full in my glasses overhead. It passed by without stopping and the birds immediately returned to their feeding, except for a few house sparrows that had discovered the little saw-whet and were now jabbering curses at it. With the returning birds came two grackles--they have been here all winter--and two evening grosbeaks.

As soon as I had seen the owl and the other birds Bob drove me back to the Jane Street car stop. I was home again by five minutes to three. The whole trip had taken 1 hour and 55 minutes from house to house. During this time--really in 10 minutes of birdwatching--I added three new birds to my year's list, and two of these--the saw-whet and the goshawk--are never easy to find. This surely was one of the fastest and one of the most successful trips for special birds I have made, thanks to Bob Trowern's generous cooperation, and Mrs. Bunston's tremendously successful feeding station.

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On January 30th, Ray Pannell used the grapevine to let me know that a hermit thrush was to be seen in Wychwood Park. Leaving the correcting of essays for a while I rushed up by streetcar and bus to his house. He and Mary and I then walked into the park, going down around the south end of the pond. The thrush has been frequenting a feeding station at the northeasterly

corner of the park and we expected to find it there, but as we were rounding the pond our bird flew up from a cleared bit of ground near a garage.

Not much alarmed it alighted low in a near tree, then dropped into a tangle of limbs newly fallen in the ice storms. From this cover the thrush set up a steady chucking complaint directed at us. When we responded with chucks and pishes of our own it went silent for a while then flew two houses up the road, only to reappear when we walked on, now choosing to sit on a wire right above our heads. Clearly more curious than fearful it looked us over with great care then flew leisurely away towards a feeding station across the little stream. This bird is manifestly wholly at home in this neighborhood.

That it should find this vale a suitable winter resort is not strange. The brook that feeds the pond remains open over much of its length all the time thus providing both water and soft earth. Dense barberry hedges along several gardens are laden with red berries so that even in the worst of weather conditions, such as the recent ice storm, there could hardly be any lack of natural food for a thrush which depends on wild fruit a good deal in winter. To cap it all there are several feeding stations here, providing seed and suet, thereby offering a multiple assurance against starvation. Thus there is food, water and shelter closely adjacent in an area where danger from any source must be minimal, the local cats probably being the only real threat. A summer winterer like the hermit thrush could hardly find a haven more to its liking.

There have been many reports of hermit thrushes at feeding stations and protected spots all over the Toronto region this winter, far more than usual. This is particularly interesting in view of the low point reached by this species during the past two years. It would look as though a good recovery is being made.

You will forgive me for not telling you more of these grapevine experiences for the grapevine is ringing again. Our President, Alan Outram, is telling me of a mockingbird that is to be seen at 194 Parkview Hill Crescent at the feeding station there. I must go and see if I can find it.

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Sometime towards the middle of March or shortly thereafter, depending on the course of the season, you will, if you are sploshing along one of those fine, spongy banks--a south-facing one by preference--where upwelling springs help the climbing sun eat away the snow, see a touch of purple. Maybe it will seem only a purplish shadow on the weeping mud, then again it may strike a bold contrast to the lingering snow. Indeed, it may thrust itself in dynamic defiance right through the last white veil of winter, turning that aging garment into a gay ruff for surgent spring. For that indeed is what you are gazing at, the first flower of spring.

Look a little closer and you will see the purple to be the curling top of a rising spathe. Perhaps it will have the green tips of emergent leaves alongside; perhaps not, for often it comes first, alone. Watch for the delicate stripes and spotting in green and brown, flecks of light on the sombrer purple. It is a brave bright beauty that breaks the sway of winter and bespeaks the dawn of spring.

Too bad it carries the unlovely name of Skunk Cabbage (Symplocarpus foetida), a designation referring to its odor, more prominent later in the season when the huge leaves are fully developed. Such a name, fit enough in a way, makes people overlook the beauty of color and design that is there. Many of our nature photographers know this beauty well, and eagerly seek to record its proud upsurge through the snow, the voice of spring in the world of plants. They are wise. May other naturalists be as much so.

The Skunk Cabbage loves the wet places. In our region some of the best stands have been found in Highland Creek near Golden Wing Swamp, along the little stream on the way into Rattray's Marsh, and along the Humber near Baby Point. I fear, however, that recent building developments and flood control clearing has done irreparable damage to these. It may be necessary to go further afield to places like Twelve-Mile Creek and the Rouge Valley. But wherever you find it there is something worth looking for, something to give you a lift after a long, trying winter of nothing freshly growing.

Whereas the Skunk Cabbage holds undisputed possession of first place in the chronology of spring blooms, the contenders for second place are several. What the wanderer afield may see next depends to a large extent on the habitat he chooses to visit and on the season. Should the spring be forward he may before the end of March see a scene such as came my way two years ago on the fourth of April.

On that date in 1958 snow remained in the woods only in sheltered places as depleted drifts. Yet, it was so recently gone, and there were still so many bits and patches of it left that we who were out had no idea of seeing flowers. We were both amazed and delighted, therefore, to discover that our favorite spring wood was dotted with dainty blooms. Hepaticas in hundreds, ranging in hue from deep, almost indigo blue to white and pink, freckled the brown, winter-pressed mat of leaves. Along with them were the fresh green leaves of wild garlic pushing up through the brown. The combined effect of the two-hepatica blooms and garlic leaves--gave to the wood a delicately vernal look, the dress of new-born spring. Nor were the hepatica the only flowers, for near the entrance to the wood bloodroot was raising white faces sunward from beneath the shelter of high, grey limestone rocks, while amongst the trees a few spring beauties already nodded fragile pink blooms beside moss-green boulders. Here and there we saw the grey-purple flush of cohosh plants just rising, looking like little purplish fountains bubbling up amidst the old brown leaves. A further flash of color, the brilliant red of the scarlet cup mushroom, enlivened the scene every so often. Sometimes a whole line of them flamed forth from some dark decaying stick. With black pools of water glistening in the sun, and snow piles hiding in sheltered shadows this whole woodland was a living demonstration of the departure of winter, the arrival of spring.

Such a panorama may come your way in late March. It is possible though rare in this region so early as that. More likely it will be in early April that you may expect this joy. Last year the same wood did not assume its vernal garb until a week or ten days after the date given. So the seasons go, each one a little different from the last.

If these are the flowers you are most likely to find in or near a wood, there is another that is more possible if you tramp the roads and the open spots, though it too may surprise you along some woodland stream or beside a

wooded glade. This will be a cheery yellow disc that at first glance you may take to be a dandelion. But take a second look. This bloom will be on top of a sturdy, grey-green stem, adorned with close-hugging little bracts; no dandelion was ever upheld by such a stem as this. Another surprising thing will be that you will find no leaves to go with the flower because in this plant the blossoms come before the foliage. Later, if you go back to see, you will note large, heart-shaped leaves, coarsely toothed and lobed, that some imaginative people have considered to resemble a colt's foot. Thus the plant gets its English name of coltsfoot. But its proper Latin name of Tussilago Farfara tells us something else about it, for Tussilago refers to a common human ill, the cough or tussis, and coltsfoot was long held by our ancestors to be a remedy for this ailment. Probably it got to America for this very reason, like so many other introduced plants, coming with the pioneers as a part of their old home life. Though it is a native of the Old World it is now completely naturalized in northeastern North America and one of our regular plants. If you do not yet know it, look for it this spring.

Favorite places for coltsfoot to grow are waste places, especially sandy edges of roads, railway embankments, and once-cultivated fields reverting to the wild. In the Toronto area two places are well-known: the Don Valley near the Bayview Viaduct, and the road from Inglewood to Forks of Credit near the bridge over the Credit River. But you may easily find that it flourishes in a dozen other spots if you watch the types of habitat suggested.

Greeting the flowers of spring is one of the exciting pleasures of the new season that is so close upon us. It is linked with the coming of the birds and a new stirring of life in all creatures. The spring is a reawakening. A field naturalist will aspire to know, to experience this rejuvenation in all its phases. For if he cannot know it all, his life will be fuller and richer for every part that he can know. The life of the field naturalist can be a ceaseless enriching adventure just because he can never know all.

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News or items about insects seldom come our way though the role of the insects is so major a one in the world of nature. Hence, when we saw the following three articles appear in the Nature Bulletins series of the Forest Preserve District of Cook County, Illinois, we felt at once that we should make them available to the readers of The Newsletter. Here they are then, and we thank the editor of these bulletins for permission to publish them here.

Nature Bulletin No. 573

September 26, 1959

GRASSHOPPERS AND LOCUSTS

A grasshopper, to many people living east of the Great Plains, is merely a happy-go-lucky harmless clown of the insect world. That myth probably stems from Aesop's fable about the improvident grasshopper and the industrious ant; or from Walt Disney's movie, based upon it, with the grasshopper's rollicking theme song: "Oh, the world owes me a living."

Actually, grasshoppers have always been among the most destructive of insects. The Book of Exodus relates that, in Egypt, a vast swarm covered the face of the earth "and there remained not any green thing." From the earliest Assyrian, Egyptian and Chinese chronicles we know that terrible famines resulted from plagues of locusts that repeatedly devastated parts of Africa and Asia.

In 1797, grasshoppers ruined crops in New England; in 1818 they destroyed them in the Red River valley of Minnesota; in 1848 the Mormon settlers in Utah were saved from starvation by flocks of gulls that consumed hordes of grasshoppers devouring their crops. This was a wingless species misnamed the Mormon cricket.

The most spectacular outbreaks in this country occurred during the 1870's when tremendous swarms of locusts --the Rocky Mountain grasshopper--migrated into the Great Plains states and southward to Texas. They left the prairies utterly barren, with only holes in the ground where wheat or range grasses had been. Trees were stripped of all leaves and young bark. Horse cars in Omaha, and Union Pacific railroad trains, were stopped. One swarm, about 100 miles wide and 300 miles long, was so high and dense that it obscured the sun and darkened the land.

There are two principal groups of grasshoppers. The long-horned group, with slender antennae as long as or longer than their bodies, includes the katydids, the cone-headed grasshoppers that also sing at night, the meadow grasshoppers that sing in daytime, and the shield-bearing grasshoppers on which the wings are absent or so short that they cannot fly. The latter include the only serious pest in this group, the Mormon "cricket".

The short-horned group, with stout antennae much shorter than their bodies, are all destructive. The non-migratory species mostly live and die in the fields where they were hatched, but there is a huge number of migrating kinds. Some of them, when conditions are favorable, multiply enormously and migrate in immense swarms that devastate the lands they visit. It is they that, since Biblical times, have been named locusts. Of 142 species found in our western states, 17 are most abundant and 90 percent of the damage is done by five of them.

A typical grasshopper has long powerful hind legs for catapulting it into the air, and two pairs of wings that fold back over its body. The front wings are straight and leathery; the rear pair are broad and membranous. It has chewing mouth parts and five eyes: two large compound ones, and three tiny simple eyes--one in the middle of its forehead--for close vision. The ears of a short-horned grasshopper are on its abdomen, just behind the long legs; long-horned species have them on the front legs.

As a rule, only the males "sing" or make sounds. Most short-horned kinds rasp their hind legs against the front wings, but some make a clattering noise by vibrating their wings. Long-horned grasshoppers rub their front wings together.

As boys, we believed that a grasshopper chewed tobacco and that this "spit"--really a digestive juice--would cure warts. For boils, our grandmothers applied poultices made of grasshoppers' hind legs and this old remedy, believe it or not, has been proven valuable.

Nature Bulletin No. 576

October 17, 1959

DROSOPHILA: THE FRUIT FLY

Have you noticed any tiny flies in your kitchen or around the fruit bowl? They are so small that they come through ordinary screens into homes, stores and restaurants. From midsummer until the killing frosts of autumn, swarms of them cluster wherever ripe or fermenting fruit is exposed--outdoor markets, tomato canneries, garbage cans, melon patches, vineyards, and apple, pear or peach orchards. At this season, hordes of them are found around cider mills where they breed in the cakes of pressed apple pulp or pomace. A few adults and young survive the winter in basement drains and other protected places with food and warmth.

These Fruit Flies are strongly attracted by the sour or yeasty odors that come from rotting fruit and other fermenting substances. Yeast is the main food of both adults and young. Because of these preferences they are also called Vinegar Gnats and Pomace Flies. Dozens of species are known, all much alike in habits and appearance. By far the most common and best known is Drosophila melanogaster, the one reared in bottles on a large scale for school use, research, and as food for small aquarium fish, captive spiders and other insect-eaters.

Fifty years ago, the fruit fly was discovered to be an almost ideal laboratory animal for the study of heredity--usually called genetics. Among its advantages is the fact that they breed the year around, and twenty or more generations a year are easily obtained. Each pair of parents can produce a hundred to several hundred offspring in a small milk bottle with some fermenting banana or specially prepared food. They are clean, inexpensive to rear, require little care, and a hundred of these bottles can be kept in the schoolroom or laboratory.

Over the years, geneticists have found hundreds of different heritable variations or mutations in Drosophila and have traced in detail their methods of inheritance. Breeding experiments between pure-bred pedigreed races of fruit flies with different eye colors, body colors, wings and dozens of other characteristics, are widely used by students in schools and colleges for exciting studies of heredity. Leaflets describing the methods for rearing fruit flies and for carrying out some of these experiments may be had free of charge from the General Biological Supply House, 8200 South Hoyne Avenue, Chicago 20, Illinois.

The adult wild fruit fly, seen through a hand lens or low-power microscope, has large bright red eyes and a tan-colored head and thorax. The abdomen of the female is crossed by dark lines. That of the male has a black tip. In addition, each of his front legs bears a conspicuous jet-black "sex comb" having several teeth. By their second day of adult life, these flies are sexually mature. Then the male begins his "courtship dance". Facing the female, he shifts from side to side, flirts his wings up and down, and does his best to show off.

Against a dark background the elongate white eggs are barely visible to

naked eye. Within two days, at room temperature, tiny white glistening larvae hatch. These feed constantly and reach full size in about six days. Then they form into straw-colored pupae, shaped like little wheat grains, which rest for five more days before the adults emerge.

Consequently, students can repeatedly observe the entire life history of fruit flies, learning about insect biology, as well as heredity, from them.

That mote in your eye may be a fruit fly.

Nature Bulletin No. 583

December 5, 1959

HONEY

Man was a hunter of wild honey and a keeper of bees in prehistoric times. A rock painting on the wall of a cave near Valencia, Spain--made many thousands of years ago--shows a Stone Age man hanging by grass ropes and surrounded by angry bees as he takes a honeycomb out of a hole in a cliff and puts it in a basket. The lore of the honeybee and the uses of its stored honey have been favorite topics since the beginnings of written mythology and history. Certainly, honey has been the all-time favorite sweet of mankind.

The early colonists brought the honeybee to America about 300 years ago. Before that time there was no native honey except the spoonful or two in a nest of bumblebees. There was no other source of sweetening except maple sugar which the Indians learned to make by laboriously boiling down maple sap. Soon, swarms of these Old World honeybees escaped and established colonies in hollow trees. Over the years they spread westward through the forests, usually keeping about 100 miles in advance of the frontier. The Indians called them "white people's flies." Woodlands near prairies with their wealth of flowers were especially productive and, in 1820, an early traveller said that Illinois had more honey than any other place in the world. Bee trees were hunted as much as big game and were more valuable.

Honey is the sweet, sticky fluid which bees make from the nectar of flowers. Honey is not the same as nectar because the double sugar in nectar is changed chemically while it is in the bee's honey sac. Each molecule of that sucrose (cane sugar), is split into two molecules of simple sugar: one of dextrose and one of levulose. Then the bees put this freshly made honey into the cells of the comb where it is allowed to "ripen", and air is fanned over the open cells until about half of the water evaporates. Then each cell is sealed with a cap.

Honey contains about 77 per cent of sugar and only 18 per cent of water. Used as human food, the dextrose of honey is quickly absorbed by the blood and becomes an immediate source of muscular energy and heat. In contrast, before levulose can be used as fuel, it must first be converted into glycogen in the liver, then reconverted into dextrose. Honey, with its simplest sugars, is often recommended by physicians and athletic trainers.

In Illinois, nectar is gathered mainly in summer from white clover, sweet clover and alsike clover, yielding a light-colored honey with a mild flavor. In fall, nectar of the smartweeds produce an amber honey with a stronger fla or while that made from Spanish needles is golden with a slight spicy flavor. The famous buckwheat honey is dark purplish and strong. Hundreds of other kinds of flowering plants contribute to the honey yield but by far the bulk of the Illinois crop comes from cultivated plants, many of which could scarcely survive without the services of these bee pollinators.

Each American eats an average of about one pound of honey in a year. Most of it is extracted from the comb before it is sold, and the comb is re-used by the bees. Some of the finest is marketed, in the comb, in small wooden frames, each with a double layer of cells and weighing about a pound. Traditionally, honey is spread on bread, biscuits, pancakes or waffles. Bread and bakery goods with honey in their recipes, instead of cane or beet sugar, remain moist longer. In olden times honey was fermented to make the drink called mead.

Bees must make 40,000 to 80,000 trips to make a single pound of honey. Each trip averages one to one and one-half miles--a total distance more than twice around the world.

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