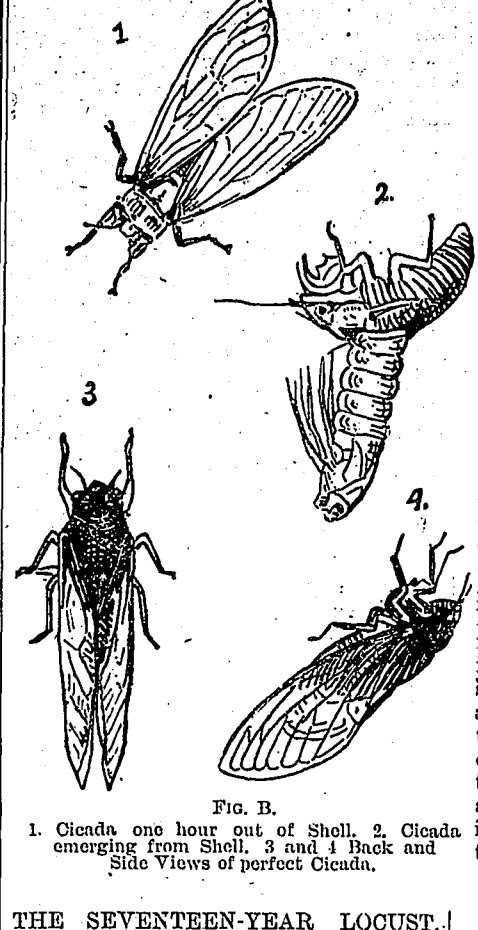

FIG. B.

1. Cicada one hour out of Shell. 2. Cicada emerging from Shell. 3 and 4 Back and Side Views of perfect Cicada.

THE SEVENTEEN-YEAR LOCUST.

To begin with, the seventeen-year locust is not a locust at all, but a cicada. The locust is a grasshopper-like insect which feeds on the green foliage of grain or grass crops, and which, in its turn, is considered a dainty edible by our Indians, and has been so considered in Asia and Africa for ages. It is peddled about the streets of some of the North African cities to-day, and there sold by the measure like the peanut with us, and it is spoken of in the Bible as having formed part of the food of John the Baptist at one time. It is probably because the locust appears in great swarms at times, and that the cicada does the same, that the early settlers of this country named it the locust, after the swarming insect of the older countries. And it will always go by the name of locust in spite of anything that may be said.

The seventeen-year locust was noticed by the settlers of Massachusetts as early as 1633, when it was described as "a numerous company of flies, which were like for bigness unto wasps or bumblebees; they came out of little holes in the ground, and did eat up the green things, and made such a constant, yelling noise as made the woods ring of them, and ready to deafen the hearers." Excepting for the fact that they do not eat the green things, this is a very good description of the seventeen-year locust, as those who are now being favored with a visit from them will avouch. The manner in which they come out of little holes in the ground smacks of the marvellous. They pass seventeen years underground, and then, as if by preconcerted arrangement, make their appearance out of the little holes almost simultaneously, and in numbers that run far up into the millions. This is always done after sunset, and by nine o'clock the same night the hordes have appeared. They are not very active when they first appear out of their subterranean homes, but they make what speed they can toward the nearest trees, and climb them to the lower leaves, where they fairly swarm, sometimes as many as thirteen pupæ clinging to one oak leaf (*Fig.* A). Those which are belated either cling to the bark of the tree or—if too late to get that far—fasten their claws to the first convenient object, and wait for the grand transformation which is to convert them from ugly crawling things of silence and gloom into gorgeous things of the air and sunlight, the males endowed with musical powers, and both sexes clad in gay suits of orange and black, with gossamer wings of iridescent hues. But a few minutes elapse after the pupæ have secured a resting-place before the dull skins begin to crack along the back. Then the imprisoned cicada works his way to freedom, at the first a soft white thing, but quickly developing wings, and becoming hard and active (Fig. B). For the most part, it does not require more than twenty minutes for the soft-prisoner to become a perfect cicada, though sometimes an hour or more is consumed in the process, and several hours are required to produce the final color. The males are the first by several days to appear, and they herald the first dawn of their new existence by trying their drums; for their musical apparatus is in effect drum-like. At first their music is rather feeble, but in a little while it secures the proper tone and force, and then it scarcely knows any rest. Nor do they drum at hap-hazard, but rather in unison, and so it is that the noise of the swarms can be heard fully a mile away, and is positively deafening when close at hand.

The male cicada eats very little while waiting for the female to appear, and that little is in the form of sap from the trees, the bark of which is slightly punctured for the juice to exude. The coming of the females is hailed by the waiting lords with an increased noise, and for a few days the air is thick with the flying insects, so much so that the sun is obscured for small areas. In a few days after this the males die gradually, and the females busy themselves with the task of egg-laying. Each female will lay in the neighborhood of five hundred eggs, and the manner in which she lays them is really remarkable. She selects young twigs only, and with a singular apparatus,

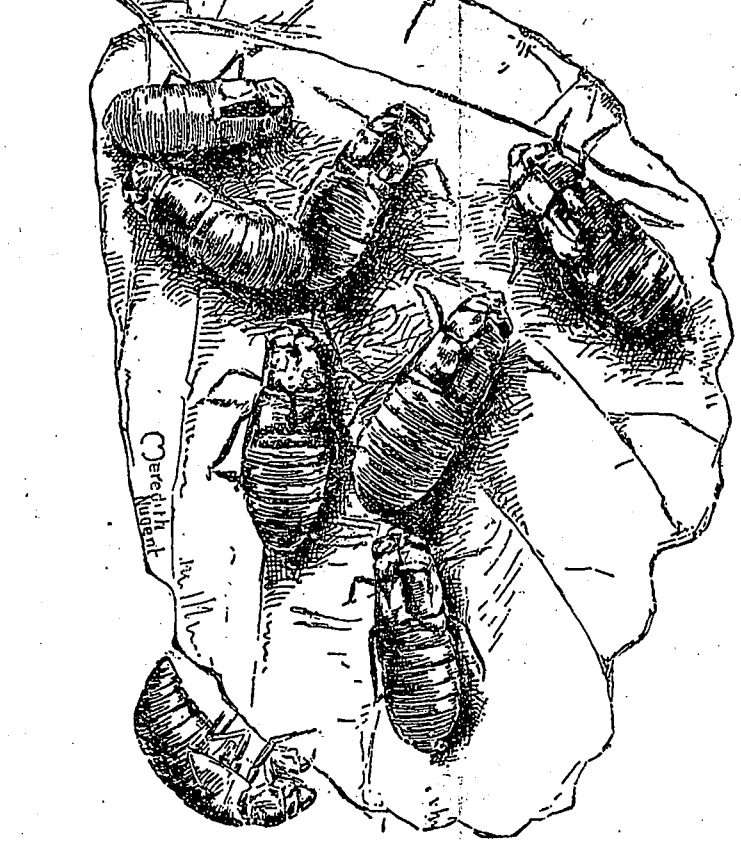

FIG. A.

called an ovipositor, bores holes in regular order along the underside of the twigs, into which the eggs are regularly and carefully placed. Each nest contains about twenty eggs (Fig. C). The ovipositor is a most ingenious contrivance, and is composed of three parts, one part being an awl with which to pierce, and two parts being opposing saws with which to cut. And after the nest has been cut out of the twig, the ovipositor acts as a tube, down which the egg is propelled into its place in the nest.

After the cicada has laid all her eggs she loses her strength and dies. She has lived a dreary underground existence of seventeen years, to enjoy a brief life of a few weeks in the air and sunshine. And now the new brood is started on a seventeen years of life. The eggs hatch in about six weeks, and the baby cicada is about one-sixteenth of an inch long, and very active, though so light that it falls to the ground from a height sometimes of a hundred feet without the least injury. It has a pair of strong claws with which to dig a hole in the ground, and it puts them into use immediately. Down it goes into the earth, and for seventeen years burrows and burrows, sometimes going as deep as twenty feet, and sometimes not one quarter of that, but changing its skin twenty-five or thirty times during its underground travels. It lives on the juices extracted from roots, and sometimes, but not often, injures trees. When the time for its reappearance on earth comes near again, it gradually works its way toward the surface, and finally digs a tunnel upward to the surface, going up occasionally to peer about and discover by signs known to itself when the 20th of May has come. If the soil is marshy where it has elected to appear, or if heavy rains are prevailing at the time, it has been known to build a turret six inches above-ground, with a roofed cap, so curved that it can go up into it and be in safety from drowning in case of flood. It is at the time when it emerges from the earth after its long sojourn there that it is in most danger from enemies; for then the hog and other animals find it a toothsome morsel, and devour it in great numbers. At a later period, when it has gained the power of flight, it becomes the prey of some birds, though it was reserved for the little English sparrow to make the most determined and destructive war upon it. So ravenously have the sparrows been known to devour the insect, that in the height of the cicada season a few years ago the air would frequently be full of the floating gossamer wings of the devoured insect.

The only real injury done by the cicada is when the twig which has been bored to receive the eggs is not strong enough to recover from the wound. As a rule, the twig does recover and the wound scars over, but with very young nursery trees the wound is very likely to injure the tree beyond recovery. As a matter of fact the life of the twig in which the eggs have been deposited is considered necessary to the hatching of the eggs, though it was at one time thought that the female deliberately sawed the twig off after depositing her eggs in it. The cicada is also often maligned by being credited with having a poisonous sting. It has no sting at all. It can bite, but never has been known to do so to anything but the bark from which it wished to extract some juice. It might cause trouble by depositing an egg with its ovipositor in the flesh of a person, but the person who would quietly submit to that process, for the fifteen minutes which would be required to accomplish it, could have no just cause for complaint. Country boys freely play with them, inciting them to drum for the pleasure of watching the vibrating diaphragms, which in the seventeen-year locust are located just under the wings. And they carry them to school in their hats occasionally, that they may there discourse such music as is in them.—*John R. Coryell in Harper's Weekly.*

THE BAD OLD TIMES.

For a change, how does the above caption look! We have long been accustomed to the other phrase, "the good old times," let us change it. There were the bad old times of the French Revolution when blood flowed like water and the greatest murderer was the best fellow. There were the worse old times before the French Revolution; times of tyranny and royal caprice and unutterable debauchery in high places; times that could only be purified as by fire. There were the bad old times of the Middle Ages in Europe when little children were allowed to have their feelings wrought upon so that they would enlist by the ten thousand in a hopeless crusade against the Moslems, only to die by the ten thousand; there, too, were the bad old times when the Bible was chained, and when people were flogged and killed for reading a New Testament, and when the fires at Geneva and Paris roared and hissed around their victims. There were the bad old times in England when it was a perfectly respectable thing for a gentleman to get drunk once in a while, and when no one was read out of good society because he was a gambler, and when women labored half-naked in the coal-mines worse treated than the donkeys themselves. These were the times when only a few could obtain an education, and the masses could scarcely hope to get above the condition of their fathers. There were the bad old times in our own land when there was only one professing Christian to every fourteen of the population, instead of one in five as at present; when our rulers were pronounced atheists, and our scholars were pronounced sceptics. There were the bad old times of slavery and disunion and civil war and carpet-bagism. There were the bad old times when not one solitary voice, even of one crying in the wilderness, was raised against the curse of rum-selling; when some ministers of the gospel themselves tippled at each house on their round of pastoral calls, and the members of the flock were not slow to follow their example. Let us thank God that the bad old times have *gone never to return, as we hope.* The new times are not as good as those that are coming but they are better than the past, and the eastern sky is brightening.—*Golden Rule.*

GREAT thoughts are mariners of the mind,
With strong white sails unfurled;
Words are the vessels that they find
To bear them round the world.

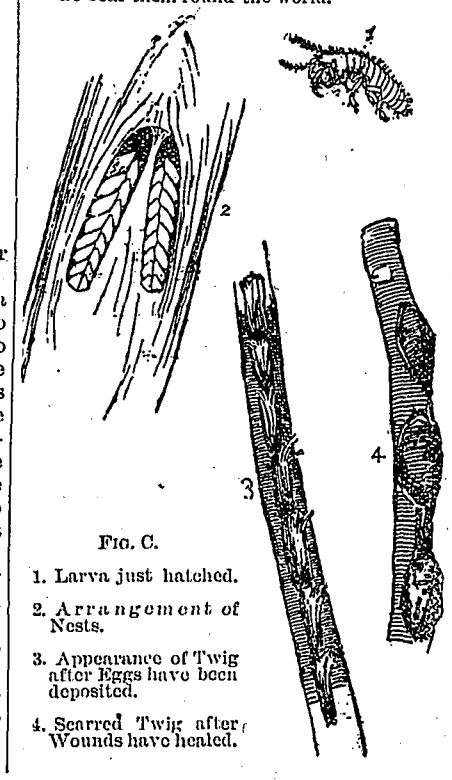

FIG. C.

1. Larva just hatched.
2. Arrangement of Nests.
3. Appearance of Twig after Eggs have been deposited.
4. Scarred Twig after Wounds have healed.