

**THE PARASOL ANTS OF TEXAS.**

At a recent meeting of the Philadelphia Academy of the Natural Sciences the Rev. H. C. McCook presented the results of his studies of the habits of the parasol ants of Texas. Two forms of nests were found by him—one that of a mound twenty-one feet long and four feet high, built around the trunk of a double live oak tree, and the second form consisting of twenty or thirty circular, semicircular, and S-shaped elevations, consisting of fresh earth pellets scattered over a flat space denuded of grass. The mound nest resembled a spittoon in shape, having a round entrance on top. This mound, when first seen, seemed to be deserted; but as evening approached hosts of ants of various sizes were seen hurrying out of the open gate into the neighboring thicket, and two long double columns were stretched from the bottom to the very top of the live oak. The ants in the descending column all carried above their heads portions of green leaves, which waved to and fro and glanced in the lantern light, imparting a weird look to the long line of march. They resembled a procession of Lilliputians bearing their banners aloft.

The opening and closing of the great gate to the nest occurs before and after every exit and entrance of ants. Towards evening the gates are gradually thrown open and remain so until morning, when they are again carefully closed. The work is performed by ants of various sizes, who transport particles of wood and fragments of leaves, etc., of proportionate bulks, for the ants themselves vary from one fourteenth to one sixteenth of an inch in length, at least ten distinct castes or sizes having been counted. When the gates are to be opened, the minions, or smaller forms, carry away from the heap particles of sand. Larger ants take bits of refuse, which they deposit a couple of inches from the gate. This process is slow and it takes a long time to accomplish very little. When the whole mass is thus loosened comes the final burst, with soldiers, majors, and minors in the lead, who bear away the rubbish in front of them, which, in a few minutes, is thus cleared away from the gallery and spread around the margin of the gates.

In cutting, the parasol ant grasps the leaf with feet outspread and makes an incision at the edge by a scissors-like motion of its great sickle-shaped, toothed mandibles. It then gradually revolves, cutting as it goes. Carriers on the ground take up the fragments as they fall and carry them to the nest, each piece being loaded up on its edge within a deep furrow which runs along the entire middle line of the ant's head, and is kept in position by prominent spines on the edge of this furrow and on the fore part of the ant's body.

The cutting and carrying was done, as far as was noted, by the smaller ants. The soldiers rarely engaged in this work, but were seen to precede the excursion columns as they moved out of the nest and up the tree, and afterward to return as though only engaged as scouts or pioneers. The principal leaves gathered were those of the live oak, although others were cut and carried off by the ants. These

ants are fond of sugar, grain, and tobacco. The use made of the cut leaves is to construct cells, slightly resembling those of the hornet's nest, but more irregular in shape. These cells were contained in the underground caverns, or pockets. Within these caverns great numbers of the smaller castes of ants were found.

With regard to the opinion of the late Mr. Belt, that these leaf-paper masses were used as a sort of "mushroom garden," a minute fungus being purposely cultivated upon them, which the ants were supposed to use for food, the belief was expressed that this was not correct, but that the ants fed upon the juice of the leaves, the fungi being merely what would naturally grow under the circumstances.

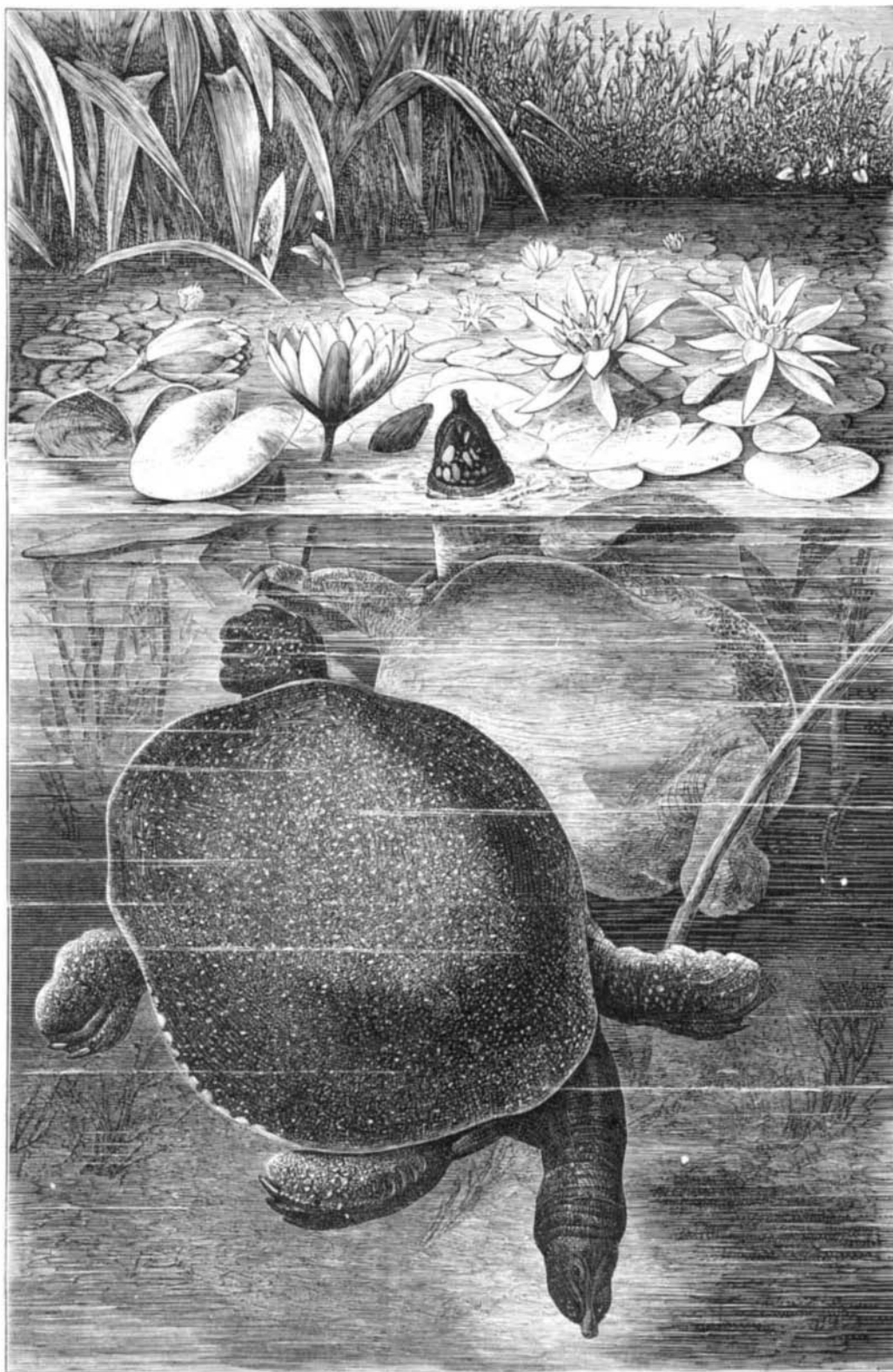
The ability of these ants to excavate vast halls and subterranean avenues was alluded to. Some of the holes examined were nearly as large as the cellar of a small house, and Lincecum's assertion that a tunnel had been excavated under the bed of a stream was pronounced to be not at all incredible.

The digging operations were participated in by the smaller castes only. The large castes would therefore appear to as-

sist in opening the gates, making the excursions, and doing the cutting; the small forms dig and carry out the excavated earth, while the smallest castes assist in opening and closing doors and take care of the larvæ.

These smallest castes, or minions, however, are quite ferocious in the attack and gallantly support the large headed soldiers.

The extreme variation of size found in one nest is one of the most serious special difficulties which the evolution hypothesis has encountered. The variations of domestic cattle by inter-breeding and other results of cultivation, although they throw some light upon the matter, yet require an efficient superintending intelligence which cannot be supposed to operate in the differentiation of ant forms, unless, indeed, we may believe that the evolution hypothesis implies and requires the interposition of a personal intelligence infinitely superior to that of both ant and man.



**THE GIANT SNAPPING TURTLE.**

Dr. Ruschenberger remarked that these parasol ants in Panama did not confine their operations to the night time, but were seen in long columns transporting leaves during the day also.

Dr. John Le Conte gave an account of the work of these ants in Honduras, where he had known them to excavate a gallery under a roadway into a house. The tiled wall of the house being too hard for them to penetrate, they had tunneled the adobe wall for a foot or more above the floor, and had thus obtained access to the room. Efforts to expel the visitors by the explosion of a mixture of sulphur, saltpeter, and charcoal met with but partial success, and it was only by forcing powdered wood ashes into their gallery and thus neutralizing the formic acid by the help of which they probably carry on their excavations, that their inroads could be in the least prevented.

Dr. Joseph Leidy spoke of the advisability of examining the contents of the stomach of these insects microscopically for the purpose of determining the nature of the food used by them. He was of the opinion that the fungi found in the formicaries were only such as would naturally be found on

such vegetable deposits, with the accompanying conditions of heat and moisture. SAMUEL M. MILLER.

**THE GIANT SNAPPING TURTLE.**

In the accompanying engraving is represented the North American giant snapping turtle (*Tryonix ferus*). It attains a weight of about 60 to 80 lbs., and specimens nearly six feet in length have been frequently caught. The back is of dark slate blue color and covered with numerous yellow and reddish dots. The belly is white and the head covered with dark spots. A light band connects the eyes and descends on both sides along the neck to the shoulders. The chin, feet, and tail are marbled white; the iris of the eye is of a bright yellow color.

This turtle inhabits principally, according to Holbrook, the Savannah and Alabama rivers, also the northern lakes, and even the Hudson River; but it is missing in all rivers entering the Atlantic between the mouth of the Hudson and that of the Savannah. Into the great lakes of the North the turtle was probably brought from the great Southern rivers, in which it is indigenous, by the great inundations, by which the Illinois River is brought in connection with Lake Michigan, the Peters River, and Red River. Into the State of New York it probably emigrated through the Erie Canal, as before the completion of the latter it was unknown in New York waters.

In most of these rivers, especially those of the South, this turtle is very common. In clear, quiet weather they appear in large numbers at the surface or on the rocks in the water, sunning themselves. When watching for prey, they hide under roots or stones, and lie motionless, till some small fish, lizard, or even a small water bird, approaches its hiding place. Then the somewhat elongated neck darts out suddenly; it never misses its aim. In an instant the prisoner is swallowed, and the turtle resumes its old position to repeat the same operation, when opportunity offers. They are also great enemies of the young alligators when these are just hatched. Thousands of them are devoured by the voracious turtles, which again fall a prey to such of the grown up alligators as were happy enough to escape.

In May the females select sandy spots along the shore, mounting hills of considerable size if necessity requires it. Here the eggs are deposited. Their calcareous shells are very fragile, more so than those of the eggs of other sweet water turtles. Very little is known of the early life of the young, which are hatched in June.

Among all North American turtles this species is, for culinary purposes, the most valuable, and it is therefore extensively hunted. They are either shot or caught in nets and with the hook. Grown specimens must be handled with great care, as they defend themselves desperately, and can inflict dangerous wounds.

**The Latest Snake Story.**

Under the above heading, a reporter communicates to one of our daily papers as follows: Mr. Jacob Smith, an undertaker, in Freeport, L. I., owns a horse which recently

became blind in the right eye—a bluish film completely covering the eyeball. Under this film, playing about in a lively manner, could be distinctly seen something resembling a snake, apparently about three inches long and as thick as a large sized darning needle. It was in constant and rapid motion, having the action of a snake or an eel in the water. A great many people in the neighborhood inspected the phenomenon, which to all was unaccountable. A few days after the snake disappeared as suddenly as it came, leaving the eye totally blind.

Whether the above story is correct or not, similar cases of a worm—*Filaria papillosa Rudolphi*—in the eyes of horses are well authenticated.

The SCIENTIFIC AMERICAN SUPPLEMENT, No. 168, contains an illustrated article on the subject, with engraving of the worm, actual size. A similar parasite has been known to exist also in the human eye.

By observation and experiment alone can the mind of man arrive at a knowledge of the laws which rule the universe.—Bacon.