6807

upper lobes prolonged somewhat like those of Q. falcata. Like the water and willow-oaks, its leaves are green during the first of winter. Acorn about 1 inch long, and ½–¾ inch broad. Leaves 4–8 inches long by 3–5 wide. A beautiful tree, with dense, deep green foliage. Wood close-grained, white, or of a light red color, and used for similar purposes as the Shumard Oak.

Quercus Durandii.—Leaves obovate, entire, or slightly 3-lobed at apex, with rudiments of one or more lobes at the margins, lobes very obtuse. When mature, smooth on both sides. Acorn round, or ovoid rotund. Cup very shallow, scales acute, closely appressed. Leaves 3–4 inches long, 1–2 inches wide. Acorns ½–⅝ inch long, about ½ inch wide, scarcely one-eighth of an inch being included in the cup. Tree 2–3 feet in diameter, and 40–50 feet high, bark of trunk, and branches light gray, scaly, resembling the white oak (Q. Alba). The leaves are mostly entire, varying from obovate to oblong-ovate. Wood white, close-grained, and very tough. It is often worked into splints for baskets to hold the picked cotton. Used for farming utensils, and sought after to make screws for cotton gins. Called "Basket Oak," and "Bastard White Oak."

Wilcox County, Alabama, Upper Louisiana, and Middle and Southern Texas. Durand's Oak. In honor of E. Durand, of Philadelphia.

Quercus annulata.—Leaves broad-ovate, entire or irregularly and sparingly lobed, sinuses shallow, divergent lobes very obtuse, upper surface smooth and bright green, under surface pale, smooth, or subpubescent, petioles short. Acorn oblong-ovoid, with a depressed ring near the apex. Style cylindrical, long, truncate, cup shallow, one-third the length of the acorn. Acorn 5–9 lines long, and 3–4 lines broad. Leaves 2–4 inches long, mostly lobed. Bark of trunk and branches light gray, scaly. Small tree or shrub, bearing a great abundance of acorns.

Common on the rocky limestone hills in the vicinity of Austin, Texas.

Note on Quercus coccinea.

In Upper Louisiana and in Eastern Texas, last autumn, I often found Q. coccinea with acorns depressed at the summit and leaves agreeing exactly with Michaux's figure of that species, the accuracy of which has been questioned by some boanists. It had not the scarlet leaves after frost which is said to be characteristic of that species. Its bark is a dark gray or slate color, deeply furrowed, and wood porous, of a reddish cast, and esteemed of little use.

Myrmica (Atta) molefaciens, "Stinging Ant," or "Mound-Making Ant," of Texas.

BY S. B. BUCKLEY.

ANTBIB #2131

Neuter.—Color reddish-brown, labium brownish-black, mandibles subfalcate serrate, triangular, blackish-brown. Antennæ two-jointed, the anterior joint clavate, hairy, head disproportionately large, upper side rotund, occiput truncate, under side of head longitudinally concave, with a dark line extending along the middle of the cavity, mentum somewhat hairy, eyes black, thorax triangular, compressed, prothorax large, with a slight knot on the upper part of each side, metathorax upper side two-spined, pedicle long, two-knotted, anterior knot inclined forwards, legs long, slender, tarsi two-clawed, abdomen smooth, smaller than the head, ovate, slightly hairy near the sting. Female has head like the neuter, excepting its front is slightly hooded, thorax oval, or rhomboidal in outline, knotted, compressed, slightly hairy, metathorax has rudimentary spines, abdomen ovate, smooth on the upper part, with a few scattering hairs on the under side. Wings not extending beyond the abdomen.

These ants are the most numerous of any in Texas, where they have frequent

PROC OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA 12 (1860): 445-447

T

abodes in paths and roads, on the prairies and in the fields and woods. They form their habitations in the ground, where they have many apartments connected by tunnels about an inch in diameter. Some of their cellars have deep shelves on all sides, where their food is stored. Their rooms are rarely found at a greater depth than six feet, nor do their cavities often extend over a greater area than from four to six feet diameter, over which, at the surface, there is generally a more or less conical mound, sometimes as high as three feet, with a principal entrance at its summit. This mound is merely the dirt brought to the surface when they are making their tunnels and cellars. Many of their dwellings have no mound at the surface, it having been washed away by rains, and also either levelled by the hand of man or the feet of animals. We first noticed the exodus of their males and females on the twenty-seventh of last July, when the whole community were in a violent commotion. Then the males and females issued from their doors in great crowds. Some flying away, while others were seized by the neuters and dragged struggling off. During the following month the females began to form new columns, commencing by a few neuters joining a female and digging a small hole to shelter her. This is daily and nightly enlarged, until its inhabitants and rooms become so numerous that it also sends forth swarms of females, and neuters to found new cities.

Their chief food is the seed of various plants and grasses, but, like most ants, they also eat flesh. They boldly attack all beetles and worms who venture near their doors, when great numbers seize the unlucky intruder, and, if it be a beetle, its legs are seized and body covered with ants, who bite and sting at the same moment, by which the beetle is soon killed, unless at the first he flies; and we have seen beetles fly away with ants hanging to their legs, nor did the ants let go, at least while the beetle was in sight. The stinging ant does not work during the hot sunshine; but they labor at night and during the cool of the day. On cloudy days their work continues. Indeed, night is the busy time, among all or nearly all of the ants of Texas. Seeds of various grasses and flowers are the principal food of the stinging ants, who, in seed-time during the summer, lay up stores of food for the winter season, when "Northers" come and storms rage, and confine the ants within doors sometimes a week or more at a time. One of their habitations in Dr. Linsecom's garden, at Long Point, in Washington County, Texas, was dug into to the depth of about two feet, and large quantities of water thrown in to destroy the ants. They recovered, and for several days after were busily engaged in bringing their store of seeds to the surface to dry. A part of these, by heat and moisture were sprouted, and unfit for preserving for future use, and these, when dry, were not taken back to their cellars. Most of the seeds were those of a species of geranium (Erodium Texanum). Miss Sallie Linsecom, a daughter of the Doctor, went into the garden daily to see the ants bring out their store of seeds, which she told us were more than half a bushel.

Mr. C. G. Caldwell, who resides on the Colorado river, about eighteen miles below Austin, has lately been digging in order to exterminate a nest. While there, recently, we became acquainted with the shape of their cellars and winding tunnels. Their apartments are rarely more than six or eight inches in diameter, with shelves, as before stated. Often a tunnel descends vertically to a room, then horizontally to another apartment, then up nearly perpendicularly to other cells, which last rarely become wet even by very heavy rains. Mr. Caldwell assured us that he had often seen their shelves full of seeds. By such an arrangement of their rooms they avoid storing seeds in heaps where they would be apt to spoil. During a very heavy rain at Cedar Creek Post-office, in Bastrip County, that whole region seemed to be flooded; and we waited with some impatience for the storm to abate, in order to see its damage to the ant,—the stinging ants having many nests in a prairie, which the rain had covered with water. Next day we saw them bringing to the surface

grass seeds to dry from their cellars. Every ant-hill in the vicinity had more or less seed strown around their outer doors. A few days later we visited the same locality, and the seeds had disappeared,—having doubtless been stored away again by the ants.

They cannot carry as heavy burdens as the cutting ant (Myrmica Texana), nor do they, like that ant, place their load upon their backs, but carry it with their mandibles and head; and, whatever they wish to take home, is, if too large, cut into segments to be thus transported.

The stinging ants are generally peaceable in their habits, rarely fighting with other species, or among themselves. In one or two instances we have noticed two different houses, situated a few rods distant, connected by a well beaten path, along which ants were passing back and forth, from one house to the other, in the greatest harmony; but one of these may have been a colony founded by the other.

Once we noticed two of these ants, which probably belonged to different houses, combating in an ant-path, along which a few ants were passing to and fro. Occasionally one of these would stop a moment, look at the contest and pass on. The struggle was obstinate and long. We became tired of the sight, and, after considerable trouble, succeeded in parting them,—both being quite lame. One we put far away, and left the other walking slowly around in search of his enemy, when, on reaching the path, he seized the first ant he met, and the fight was more animated than ever,—one of the parties being robust and untired. Suddenly they stopped, looked a moment, and then began caressing each other, soon after which they started side by side for their town, not far distant. It seemed as if the first fighter, blinded by rage, had lastly fought his own brother. We have been stung several times by them, and think the pain about equal to that caused by the sting of the honey-bee.

Descriptions of New Carboniferous Fossils from Illinois and other Western States.

BY F. B. MEEK AND A. H. WORTHEN,

Of the Illinois State Geological Survey.*

ZOOPHYTA.

SPHENOPOTERIUM, (new gen.)

σφην, a wedge; ποτηριον, a cup.

Corallum free, (or attached?) cuneate or irregularly subturbinate, and provided with a few large inseparable cells, which increase in number by lateral and interstitial development. External wall rather dense, but perforated by a few pores, which seem to terminate in the cancellated substance of the coral without reaching the cells; surface marked by numerous fine, anastomosing striæ. Cells circular, or when crowded, more or less angular; without diaphragms, columella, or well developed rays, their walls being merely marked by distinct vertical striæ, and pierced by numerous pores which appear

*Illustrations with more extended descriptions, remarks, &c., to appear in the forthcoming report of the Illinois survey.

NOTE.—While investigating the fossils described in this and our paper published in the last number of the Proceedings, we have been placed under many obligations to the Secretary of the Smithsonian Institution, for the free use of the extensive collections of works on Palæontoloy, Geology, and various branches of Natural History, belonging to the Smithsonian library. Also, for the use of rooms in the Institution, and for access to the large and rapidly accumulating geological and palæontological collections in the Smithsonian Museum.