seven specimens, four species. Osten Sacken, in his Monograph, describes twenty-four species, but of these only five have the description of both sexes; the species are based entirely on the females. As the wing and abdominal markings vary considerably in the two sexes of the same species, it is sometimes quite difficult to determine the males. Of the twenty-two species in his collection, he had the males of twelve. The females are very common during June and July, while the males are rare and usually found on flowers. The specimens taken in North Carolina were caught on the flowers of the "Chinquapin," or dwarf chestnut.

Prof. Smith stated that among the moths collected by Laurent, in Maine last Summer, were two very poor specimens of *Noctua treatii*, which is very rare, of which he knew of but one other specimen which is in the collection of the National Museum.

No further business being presented the meeting adjourned to the annex at 10.45 P.M.

THEO. H. SCHMITZ, *Secretary.*

ENTOMOLOGICAL SECTION OF THE CHICAGO ACADEMY OF SCIENCES.—The regular meeting was held in the Matthew Laflin Memorial Building, Lincoln Park, November 15, at 8 P.M. The Recorder of the Section, Mr. A. J. Snyder, gave an address, illustrated by maps and stereoptican views, entitled "Snap Shots taken by an Entomologist in Utah, Idaho and Yellowstone Park."

The Entomological Section

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

PROCEEDINGS OF MEETINGS.

The following papers were read and accepted by the Committee for publication in ENTOMOLOGICAL NEWS:

ON THE NESTING HABITS OF ANTHIDIUM CONSIMILE.

By A. DAVIDSON, M.D., Los Angeles, Cal.

I discovered this bee three years ago, having captured my first specimen in the process of building its nest in the crevice of a rock near this city. Since that time I have gathered numerous specimens of its nest in various parts of San Bernardino and Los

Angeles Counties. These nests are built either in the crotches of the terminal branches of shrubs, as shown in the illustration, or in depressions or angles of stones or boulders lying on the ground. The nests vary in size according to the number of cells; if containing six or seven they may be as large as a walnut; if

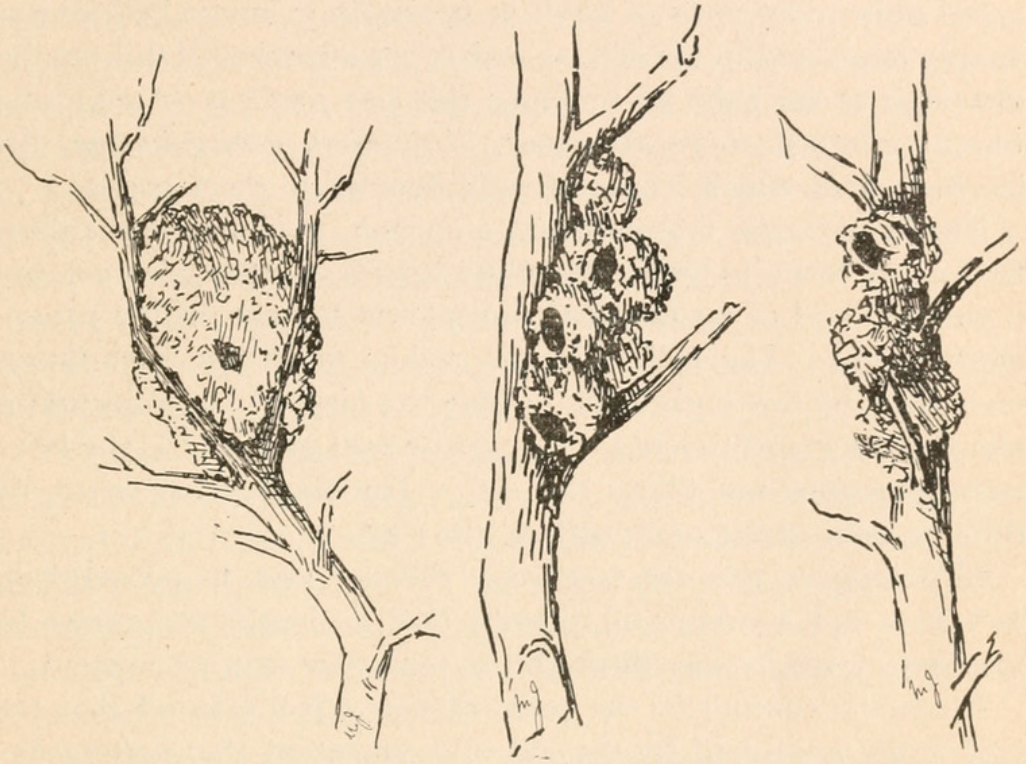

FIG. 1. FIG. 2. FIG. 3.

1.—Mass of cells of *A. consimile* Ashm.
2.—*A. consimile* Ashm. on twig.
3.—Cell showing cocoon in situ, with nipple-like projection.

only one, little more than a quarter of an inch long; but all are of the same composition, whether plastered in a crevice of a rock or cunningly perched on a twig. The main mass in which the cells are somewhat irregularly arranged is composed of a tough glue-like substance very copiously intermixed with comparatively large grains of sand.

Each cell when completed is covered over with these sand grains closely cemented over its surface, and the next cells placed alongside and similarly treated until the whole mass which is ultimately neatly rounded off, looks like a fragment of sandstone, or a miniature conglomerate through which the twig had pushed its way. The outside, by exposure becomes almost as brittle as the rock itself, but internally the mass is always soft, though quite tenacious. The grains and stony fragments utilized to build and

cover it externally are those of the immediate neighborhood and may consequently be either sandstone or granite.

The bees make their exit in the first two weeks of June, and very soon after commence the construction of their cells, each nest being, I believe, the product of one bee. The food is the usual pollen-like mass of medium consistency, and I believe it is simply deposited in the cell, as with other members of this family, although in its habit of building this bee forms a strange and unique contrast to its congener, *Anthidium emarginatum*, the life-history of which I have already detailed in these pages.

The larva, when mature spins a cocoon, as shown in the illustration; in form it closely resembles that of *A. emarginatum*, but is thinner, and of a somewhat transparent texture, with a prominent nipple. The cell measures rather more than one-fourth inch long by one-eighth inch wide; the nipple-like projection is one line long and touches the opposite wall of the cell, the larva in consequence not filling the cell. The nipple is, as usual, on the side nearest the outer wall of the nest.

In making its exit the bee has a difficult task to accomplish, and it is not a matter of surprise that it should sometimes be unable to force its way through the tenacious mass of cement.

From the contour of the point of exit I feel assured that the exit is accomplished by the aid of a secretion that softens the cement and allows the bee to force its way out. No fragments were ever found that would indicate that the bees had gnawed their way out, nor does it seem possible that such material could be bitten through by a bee.

The hymenopterous parasites affecting this species are, on account of the usually exposed situation of the nests, probably quite numerous, but so far only four have been discovered. The most common of these is a small bee identified as *Alcidamea producta* Cress., of which seven emerged in one instance from one group of cells. Many of the other parasites were unable to cut their way out, and were discovered dead in situ on breaking open the cell. Of these, *Monodontomerus montivagus* Ashm. is the most common. *Leucospis affinis* Say, was found once. A new species named *Torymus anthidii* Ashm. occupied two cells. Of the last there were twenty in each cell, the larvæ having attacked their host just after the cocoon had been spun.

While collecting at Palm Springs on the Colorado desert in

April, 1893, I gathered a large nest of this bee from one of the desert shrubs; the nest had evidently been constructed the previous season. Some of the occupants found their way out in the following June, and the remaining cells lay unmolested in my cabinet until this Spring, when my curiosity prompted me to examine them. On dissection I found in two of the cells dead, but apparently full-grown, specimens of *Trichodes ornatus* var. *tenellus* with the thin membranous shroud with which the larvæ had surrounded themselves. In two others larvæ were found, one of which was of a dark vermilion hue, and is probably the larva of this *Trichodes;* the other was enclosed in an *Anthidium* cocoon. I put these two larvæ carefully aside, and the bee, which proved to be a typical *A. consimile*, issued in July. The beetle larva is still active and crawling around its prison with apparently no disposition to reveal its identity.

The *Anthidium* last to emerge must have remained in the larval stage for nearly three years, the egg having probably been deposited in the Autumn of 1892, and having remained in my possession since April, 1893. This, although unique in this family, is not the only instance of long continued existence in the larval state; the historic *Osmia* of the British Museum having furnished an example of the same kind.

Instances of bees remaining for more than one season in the larval state are probably not so very rare. It seems reasonable to suppose that those species inhabiting such arid districts as Palm Springs must have some such natural provision to preserve them from extinction, as it frequently happens that in two successive seasons absolutely no rain falls, and food must, of necessity, be very limited.

The beetles found, and the larva still under observation, are probably of the same species, and present the same peculiarity as the bees in question, in that some of them remain for an extended period in the larval state. Of the habits of these beetles (*Trichodes*) I know nothing, although I believe some members of this genus have been found in the nests of bees.

Appended is Mr. Ashmead's description of the two new species:

Anthidium consimile Ashm. n. sp.—Female. Length 7 mm. Black, punctate; a line before front ocellus, the clypeus, the anterior orbit widened at clypeus, a small triangular spot on middle of face just below insertion of antennæ, a stripe on posterior orbits, two large spots on an-

terior margin of mesonotum, the anterior margin of tegulæ, a spot on the large dilated scale in front of tegulæ, a spot on the anterior margin of mesopleura, hind margin of axillæ and scutellum, stripe beneath the anterior and middle femora, the tips of all femora, and the anterior face of tibiæ, a spot at base of hind tarsi, the posterior margin of first abdominal segment dilated laterally, bands on margins of segments 2 to 5 interrupted medially, and two spots on the sixth segment, all lemon-yellow. The lateral middle of the yellow abdominal bands are all emarginated by a quadrate or quadrilateral black spot. The hind coxæ beneath are armed with a small whitish spine. Wings hyaline, the marginal cell and the apices broadly fuliginous.

Allied to *A. parvum* and *A. simile* Cr.

Torymus anthidii n. sp. ♀.—Length 1.75–2 mm.; ovipositor nearly as long as the abdomen. Dull bronzy green, finely sericeous, the collar anteriorly and beneath bluish. Head and thorax finely shagreened; scape and tibiæ brownish yellow, tarsi whitish, the hind tibiæ, except tips, sometimes embrowned; coxæ and femora metallic; flagellum brown, the joints, except the conical last joint, all wider than long. Head transverse, very little wider than the thorax, antereo-posteriorly not very thick, flat behind the eyes; viewed from in front almost round, not longer than wide, the frons with a slight antennal impression; eyes large; ocelli subtriangularly arranged, the lateral closer to the margin of the eye than to the front ocellus; mandibles ferruginous; antennæ inserted a little below the middle of the face. Thorax a little more than twice as long as wide, the parapsidal furrows distinct, but not deep or sharply defined; scutellum convex, longer than wide, rounded posteriorly, the axillæ a little nearer to each other than their width at base; metanotum very short, without a median carina, the spiracles very minute, round. Wings hyaline, the veins brownish yellow, the postmarginal vein twice as long as the stigmal, the marginal vein one-half longer than the postmarginal. Abdomen short, subcompressed, viewed laterally it appears nearly as deep dorso-ventrally as it is long, the first body segment is fully two-thirds as long as the whole abdomen, the second segment as long as the third and fourth united, the fourth being longer than the third, while the following segments are short.

Described from several ♀ specimens, reared by Dr. A. Davidson, from the cells of a bee, *Anthihium consimile.*

———o———

DESCRIPTIONS OF NEW SPECIES OF NOCTUIDÆ.

By JOHN B. SMITH, Sc.D.

(Continued from vol. vi, p. 340.)

Acronycta pyralis n. sp. Pl. xv, fig. 1.*—Ground color a very dark powdery gray; head and thorax without distinct markings, but the tip of the collar grayish and the patagiæ indefinitely black margined. The pri-

* The references are all to Plate XV in the December number of Volume VI.