

REMARKS ON THE HISTORY AND ARCHITECTURE OF THE
WOOD PAPER-MAKING WASPS.

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The history of the wasps of temperate America has not been recorded. It appears that entomologists have no great desire to study those interesting insects; and although several species occur in Canada, we know little or nothing of their natural history. One species, the spotted wood wasp (*Vespa maculata*, Linn.), occurs commonly, as near as I can determine, about every third year, in our northern woods. Having partially studied its habits, and collected a series of the nests in all their stages, it is particularly in regard to the latter that I claim attention. But before I proceed to relate what I have ascertained regarding their architecture, it will suffice to state that each large nest which we notice suspended from trees towards the end of summer consisted of a colony of males, females and workers, or imperfect females, as they are termed. The large nest is certainly the second, probably the third structure which has been formed by an industrious colony of workers during the warm months of summer. In this latitude, late in the fall and early in spring, we find large and small females in a torpid state. They are the generators of the forthcoming colonies, and the only living remnant of the large number of distinct individuals which inhabited one of the deserted nests of the previous season. These females leave the nest on the approach of cold weather in October, or according to the latitude where they occur, and they then carry impregnated ovaries from which are produced eggs to constitute a young colony of from eight to twelve workers in the following spring. The gradual warmth, generally in the early part of May, awakens the torpid female, and she emerges from her winter's abode to perpetuate her species. After partaking of such food as can be procured at this season, she is now prepared to fulfil another part of her mission—instinct teaches her that she must be her own builder—and for this purpose she goes forth to select a suitable sheltered situation. When this is found, she collects and prepares woody fibre from weather-worn fences, &c., by which, in the course of a week or ten days, she forms a little pretty spherical paper nest. After it is perfected, she attaches a single tier of hexagonal cells, in each of which an egg is deposited. The first egg is placed in the central cell, and as far as I have been able to watch the parent, and from examination of several of these small nests, I am of the opinion that she does not deposit all her eggs simultaneously, but that there is a lapse of time between the deposition of each egg. I am led to this conclusion because in several nests which I have examined larvae occupied the central cells, while some of the surrounding ones contained eggs; besides, I have ascertained that the young workers issue from their cells at stated periods, one after another. Here, then, we