

XXVI *Two Letters of Mr. John Harrison of Cambridge in New England, to Mr. Peter Collinson, F. R. S. concerning a small Species of Wasps.*

S I R, Cambridge, 29 July, 1748.

Read May 9.  
1751.

**A**BOUT the 28 of May last, I discover'd hanging to the roof on the inside of my green-house (which is of wood) something about the size of a child's farthing ball, in shape like a Provence rose full-grown, before it opens, that is, a round bottom, ending in a blunt point; at which point is a round hole, large enough for insects (something less than a wasp) to go in and out at. I soon perceiv'd, that it was the work of insects, a small species of wasps. They have six legs, black next to their body, then yellow, ending in cinnamon-colour. Some have 6 and 7 rings, of a bright yellow colour, round the tail part of their body, with small hollows or indents on the upper parts. The divisions between the rings are of a bright jet-colour; the face is yellow; on the head are two horns.

These little insects are very industrious in making their nest. The top of it is fastened or glewed to the cieling, and is formed of many round coverings, one within another, yet not touching each other, by the 8 part of an inch. Probably this space is left to make their cells, in which they lay their eggs. These coverings have been repeated until there are now thirteen finished, ranging equally one over another.

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It is most curious to see their manner of working. As this performance is most externally, I have an opportunity of seeing every minute circumstance of this operation, which is carried on with as much pains and application, as (but I think I may say with more skill and contrivance than) the honey-bees, who are beholden to a hive or hollow tree, &c. to fabricate their combs in; whereas these little animals are, the sole builders of the outward walls, as well as the interior parts of their dwellings. They range about for the materials, but with all my endeavours I could never observe, from whence they were collected; only this I know, that they bring a little lump of dark-colour'd paste between their fore-legs, about the size of a radish-feed. This they carry first to the inside of the covering, which they are about to finish, and stay near half a minute, I suppose to work some of it on that side: then they return with the greatest part, to enlarge it on the outside, which they execute in a most dextrous manner (as I have many times seen) by taking the paste from between their legs with their mouths (which open cross ways to their body) and fixing it on the edge of the covering, working backwards, for about an inch at a time in length, and then spread and smooth it with their horns. This is all performed in about two minutes, and they are seldom more than five days in finishing a whole cover. By the nicest observation I could make, their number is between 20 and 30. They seem no-ways hurtful; and are so intent on their business, that if 3 or 4 people at a time are looking within so many inches of their nest, they neither attack them, nor forbear to carry on the

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public work; which is now 5 inches diameter, and about 4 deep. In my next you shall hear further how this little colony goes on. I am, Sir,

Your most humble servant,

John Harrison.

S I R,

Cambridge, Dec. 22 1748.

**W**HAT I have further to add to my former observations on the pretty insects, that were building their nest in my green-house, is, that they continued their work, in the same manner as before-mention'd, untill they had finished 15 coverings one over another, and began three more, which they never completed, but one is more finished than the others.

About the 16 of August there was a cessation of their usual industry. I could only observe one or two in a day at work, which continued to the 26, when they quite gave over adding any more to their nest. Since that, I could only see one or two going in and out once or twice a day, for about a fortnight after. In that time I observed two of these insects come out of their nest, of an extraordinary size, at least one third larger than those, that built the nest. These seem to me, and undoubtedly are, the parents or queens appointed by the all-wise Creator for continuing their species, as their sluggishness has a near analogy to the queen-bees, that are sometimes seen to come to the mouth of the hive, without any other seeming business than to take the air, and shew themselves,

themselves, and then return into the hive again. About the 6 or 7 of September, I saw the last; none have since been seen.

As these insects are new to me, and to all who have seen them, I cannot say any thing certain of their future progress; but, if I may compare them to, as they most resemble the hornets, in their making and hanging up of their nest, the queens will only survive, and each in the next spring be the founder of a new colony. The common wasps are under the same regulation. The males all die at the approach of winter, and leave but very few females to survive them. This is wonderfully contrived to prevent the increase of such noxious animals; whereas the bees, so beneficial to mankind, survive the winter, unless robbed of their honey, which is their support during that season.

I have had at least 500 learned gentlemen of this university to see these insects, and their operations, Is it not very remarkable? Not any one of them had ever seen the like, or could give any similar account of any thing of this nature.

I have waited with impatience the coming of the spring; but, to my great disappointment, none of my pretty little inmates returned to their nest; which makes me conclude, that it is their annual work. This determined me to take it down carefully; and as I promised to send it you, I desire your acceptance of it, and of one of the insects. I hope it will prove an agreeable entertainment to you and your curious friends. I am, Sir,

Your most obliged humble servant,

John Harrison.