At the end of my paper I will add a few words of thanks.

In the first place, I am most deeply indebted to Prof. G. Born, Prosector to the Royal Anatomical School of Breslau and Director of the Embryological Section. It was he who first induced me to undertake these exceedingly interesting and instructive studies, he initiated me into the always difficult *technique* which work of this kind demands, and he assisted me by word and deed wherever he could, shunning no trouble and no expense. In return for his extraordinary amiability and self-sacrificing care I trust I may be permitted once more to express here my heartiest thanks to Prof. Born.

I am likewise under very special obligations to Prof. Hasse, Director of the Royal Anatomical School of Breslau, for the permission which he most readily accorded to me to work in the Embryological Laboratory of the School.

Lastly, my best thanks are due to Dr. A. Fleischmann, of Erlangen, who drew my attention to a series of highly remarkable facts, introduced me to the palæontological literature of the subject, and furnished me with very valuable statements and observations for my memoir.

LIII.—*On the Habits of a Species of* Trigona.

By J. H. Hart, F.L.S., Royal Botanic Gardens, Trinidad.

Among the several species of *Trigona*, or "wild bees," which are common in Trinidad none is more interesting in its habits than a peculiar small dark species which is often found in the proximity of dwelling-houses, under slates, or in crevices of the woodwork of out-buildings.

The specific name of the insect has not been ascertained, but it has been found that it belongs to the genus *Trigona*. It was first observed in 1887 in the walls of a dwelling-house, owing to its building a peculiar entrance-tube. This tube was about $\frac{3}{4}$ of an inch in diameter, about 4 inches long, with the entrance at the bottom, through a small hole in the centre of the wax disk which closes it.

When the office of the Royal Botanic Gardens was under repair quite recently the same species was discovered making its home between two walls.

An attempt was made to house them, and a small box prepared, with a small cut for entrance allowed, in a similar manner to that usually seen in the common bee-hive, viz. at the base. The bees took to the box and commenced work;

but after the first day they closed the lower entrance very completely with a sticky kind of wax, and adopted a small crack in the upper portion of their box as the entrance. To the inside of this crack they attached a tube similar to the one first observed, but completely adapted to the new position, by first building it along the crack and afterwards in a pendulous manner downwards.

Wishing to have the insects more completely under observation, I built a small glass-sided box with sliding covers, made an entrance for them in the top gable, and transferred them thereto. They again took very kindly to their new quarters and commenced work by rapidly sealing up every crevice, making their home practically air-tight. To the entrance they again attached the entrance-tube, which in this case was brought from the entrance inwards, but built in the same manner as the previous ones. It was, however, supported by wax stays, by which it was held at about $\frac{3}{4}$ inch distant from the inside wall.

During the removal from their former home opportunity was taken to examine the construction of their peculiar entrance-tube, and it was found on making a section that it was constricted in several places by disks, leaving only sufficient space in the centre for the passing of one bee at a time; and, if beaten back from the first, they have still the chance of holding the inner ones in succession. These constrictions and the sealing-up are evidently adopted by the insects as a means of defence against their enemies. A further defensive measure may be seen if the nest is examined after nightfall, when it will be found that the orifice which admits of ingress and egress during the day is sealed completely over, all but imperceptible orifices being left in the closing sheet of wax, we suppose for the admission of air. This safeguard is regularly removed in the early morning near daybreak, and again closed each night after nightfall. The honey-cells of this bee are distinct from the breeding-cells, are ovate in shape, over $\frac{3}{4}$ inch in length, and somewhat pointed at the closed apex; and the food- or pollen-cells are of the same form and size, but situated at a different part of the hive. The honey-cells are separated from the rest of the nest; they are affixed closely together, and are somewhat irregular in size, but firmly fixed to the side-wall of the hive in one layer only, cones pointing upwards. The pollen-cells are spread over the floor-space, reminding one of sacks of grain in a granary. The breeding-cells are not more than $\frac{3}{8}$ inch in length, regularly oval and in single tiers, held in position separate from each other by small wax stays, which leaves each cell sepa-

rate and distinct from its neighbour, though generally on the same or nearly the same horizontal plane.

In our nest there are several layers one above another, the main support being thin walls of wax built up the sides and throughout the mass at intervals in a perpendicular manner, and reaching to the top of the hive.

The queen has a very large body, very much larger in comparison with the workers than that of the queen of the common hive-bee, and very similar to some of the termites. A small dipterous insect was observed in the nest when it was first taken, but this disappeared after it was fully sealed. This may prove to be the natural enemy of this insect.

Our bee has no sting, which renders it particularly easy to handle and observe, and the want of which doubtlessly occasions it to use such careful means of defence to secure its home from the attacks of its enemies.

The honey is perfectly sweet and wholesome, very clear, and of a nice flavour, but when squeezed out soon becomes sour.

Another species of *Trigona* is found in hollow or decayed trees in our gardens, in large nests 2 to 3 feet in diameter, formed of black, gummy, waxy, or resinous matter. This species is very pugnacious, and attacks persons coming near it, with a buzz and hum similar to that of the common honey-bee; but it is powerless to harm, as it has no sting. It, however, fixes itself in the hair of the head or beard, and produces a peculiar tickling feeling, which quickly induces a sensation of fear in those who know the result of the attack of an angry common hive-bee; and even when its character is known the attack (almost unconsciously) causes the intruder to retreat.

LIV.—*Description of Two new "Pocket-Mice" of the Genus* Heteromys. By Oldfield Thomas.

While attempting to determine a specimen belonging to the genus *Heteromys* obtained by Dr. Audley Buller in Jalisco, Mexico, I have found it necessary to make an examination of all the species of the genus, and I find that they are readily divisible into groups by the characters of the soles, whether naked or hairy, with five pads or six. These characters do not seem to have been known to Mr. Alston when, in his