snow in a food search, or to clear a way for the herd through the bush, as in the case of many other deer.

I know you may quote against my assumption the fatal effect on the drone of a somewhat similar rending of its structure, but the analogy scarcely holds good, for with him we are dealing with an admitted perfect insect perishing after having successfully played its part in the world, illustrated many times in both vegetable and animal kingdoms, whereas with the worker we are dealing with an imperfect one—imperfect because of its inability to take part in reproducing its kind, however well it may indirectly aid others in so doing, just as the worker is a neccessary help in reproduction, by nectar and pollen-gathering, brood-reartng, cell-building, and so on, yet after all she is only an adjunct.

We find the queen humble-bee performing all these labors herself, until she has a family of workers round her as deputies, still they are only reliefs, lady-helps.

We must, I think, consider the sting of the queen, with its curved form and barbs, differing so much from those on the worker's sting, as a true ovipositor, the perfect instrument in the perfect bee, exactly corresponding (as it does) to the saw-lik eovipositor of other hymenoptera; we must put in opposition to the imperect instrument, either faultily used by the worker for another purpose than that originally intended, or in process of adaption or modification. We find the ovipositor of the queen curved towards the under part of the abdomen, the barbs fewer in number, and not so sharp and formidable as those on the worker's sting; the ovipositor, or sting, may thus be withdrawn when used in queen-fights. Here, then, is another bit of evidence against considering the instrument as a sting: The queen not using it when attacked by workers or any enemies such as ourselves when we handle or even injure her,

One cannot think, then, of the queen and worker being provided with such a complex and beautiful piece of mechanism, attached to which are the highly senstive palpi; the toothed sheath, the marvellous rods and slides, the barbs and poison apertures, the poison bag with its valves and admirable pumping arrangement, the oil-glands providing a lubricant which prevents the poison from clogging the darts, and (mark this) thus enabling them to be brought into use again and again at the need of the insect, the delicate poison-glands secreting the wonderful preparation from the blood and storing it in such an intricate reservoir,—I say we cannot think of all this work remaining dormant and useless in the queen, excepting on the occasion of a few fights spread over a few years, or in the case of the worker existing only as a standing menace of death if brought into play, especially when we remember that for every one bee using its sting as a sting in its wild or natural state, very many thousands die without ever so using it. It is not, I hope, blasphemy to say the Creator does not waste His work in any such way.

We must look around for as regular a use of this whole apparatus, as we find when we regard the tongue or the pollen-clearing and collecting contrivances. We cannot attend the queen in her movements on the cell-base during egg-laying, but we may clumsily try to imitate her. In this effort I take a piece of foundation; and make a scratch with a needle. I next apply strong sulphuric acid, the same diluted, and poison from a bee's sting to different parts of it, and I find the joint action of the wax and acid produce a stickiness of the surface, to which my little bits of thread (resembling bee's eggs) adhere, and remain fixed by their ends quite as firmly as if placed there by the queen herself, though the implement of the queen is much in advance of mine, insomuch as she can apply the corrosive fluid at the time of making the scratch by slightly bending the abdomen forward, or with her ovipositor she can use the side barbs as the saw-fly uses its saws, depositing in the groove her poison just as the saw-fly does. This discovery filled me with delight, for I could by analogy now see the use for what had hitherto seemed almost useless organs in the mother-bee. I could also dispense with the generally received notion that the egg is provided with adhesive secretion on it extrusion (but by what glands secreted we are not told). The necessity for the extremely sensitive palpi of the sting, so as to enable the bee to feel about on the ridges formed by the lozenges of the cell-base for a suitable spot on which the egg may be placed, thus becomes evident. Let the queen use her sting and poison in a contest with an opponent if you like but we can no more call that its true office than we can say the true use of the hind legs of a horse is as a means of attack and defence. Well, as the horse uses his heels, the worker-bee uses its sting, its old ovipositor, for which it has no use, other than those it can adopt it to. My idea that the sting is used by the queen as a groove-former, and the poison spread on waz as an adhesive compound, to which the egg is attached on being laid, is somewhat borne out by the experiment of Mr. C. N. Abbott. This well-known, practically scientific bee-keeper found that when he gave wooden-based foundation, the queen refused to lay in cells.

If we now experiment with bee-poison,