tennæ spring from near the apex of the snout, and are of considerable length; when at rest they lie along an oblique groove, situated before the eyes, into which part of the basal joint fits. The first joint is thin and club-shaped, and the rest of the joints are given off from it, in the manner of an elbow; they are short, and taken together, are longer the basal one; the external ones form a longish cone-shaped club; their colour is reddish. The thorax is not much broader than the hind part of the head, and it ssides are rounded; it is slightly contracted behind, but not so much as in front; there is a narrowish stripe down its centre, and two other broader arched bands on the sides, whose colour is whitish, or they are ornamented with brownish coppery shining scales. The base of the elytra is considerably broader than the thorax, and their entire shape is that of an elongated cone, being gradually narrowed at the apex, which is obtuse, and slightly rounded; they are considerably convex above, and are nearly uniformly fuscous, or sandy-coloured, punctate striate, with a stripe at the base of the suture, and one on each shoulder, whitish or coppery.—The thighs are dusky and scaly nearly like the rest of the body, their lips being rusty; the shanks are rusty red, and the joints of the feet are rather dusky; the third joint consists of two strong lobes, which lie something like a V; and the next apparent joint lying between these, is linear, and is terminated by two hooked claws. These joints confer a considerable power in grasping objects.

Provincially these insects are called "cuddies," *i. e.* asses, their colour, and a certain remote resemblance, having provoked popular comparison. They usually survive the winter in moss, within the shelter of stone walls, or in the hay or corn ricks; and in the first genial days of spring, they may be seen issuing forth, and ascending stone walls, and other eminences, in which they evince great perseverance, and appear to have considerable enjoyment, as place them as low as possible, they still show a propensity to mount upwards. This rambling *penchant* enables the Sitona to compensate for their sometimes imperfect wings (although these are often complete, and sufficient for purposes of transport), and it is their habit whenever met by a gust of wind, to allow themselves to be carried onwards by it. Owing to this we find this species, along with others, assembled in vast numbers in spring upon sandy sea coasts, the wind having drifted them into the hollows whence they attempt to rise by struggling up, with long-continued toil, and often fruitless effort, the slippery ascent of the sand-banks. At the close of evening they seek shelter under rubbish, heaps of sea-weed, or whatever immediate covert is offered; there most of the insects seen in this condition probably perish, and the fields are thus freed from a part of their last year's ravagers. The insects may be taken in great numbers by the sweeping net, though from their habit, when disturbed, of dropping in a pretended lifeless state, this may miss as many as it takes; *James Hardy, Penmanshiel, by Cockburnspath, Berwickshire, Oct.* 23.

PRODUCTION OF FUNGI.

Dr. Barry, is the Edinburgh new Philosophical Journal for October, 1843, page 219, asks the question—"How do vegetable productions arise in the infusions of organic matter? I venture to believe," he adds, "that they may have their origin in those particles which I have called the true cell germs. These cell germs, as part of the animal or vegetable organisms, for instance in the elaborated *liquor sanguinis* or the descending sap, would have been developed according to the stimulus received within that organism; but now set free, each becomes developed into an indeeendent organism capable of propagating itself and producing a like form, which it does in a variety of ways;" and he adds, "It is known that the various organisms and even organs have their peculiar parasites; and if the view just mentioned be admitted, this is no other than what we should expect from specific peculiarities of the organisms." Again, Mr. Carpenter expresses an opinion that fungi may be produced by the degeneration of the tissue of plants more elevated in the scale. The two following experiments seem to throw some light on this abstruse subject, and show that the views of Dr. Barry and Mr. Carpenter come in some degree near to, though they do not quite express the manner in which fungi are formed. The first experiment shows the forms of the tissue of a plant when nearly separated from each other, the second experiment points out the manner in which parasitic fungi are formed. 1*st Experiment.*—Having taken a fresh leaf from a green and vigorous

Potato plant, I placed the end of the petiole in a little caustic ammonia, in a watch glass, and having covered it with a glass jar, allowed it to remain in this position for three days. In the course of that time the ammonia had extracted a greenish fluid from the petiole and leaf, the latter of which had by this time fallen down, so that part of the leaf was also in contact with the ammonia. On removing the leaf, I found in the watch-glass, in addition to the greenish liquid, a quantity of the tissue of the plant, which had mostly separated into individual cells, although a few of them still remained united together. When the ammonia had nearly evaporated, the greenish liquid assumed a thickish appearance, like gum, having in it the separated tissue of the plant. 2*d Experiment.*—Having taken a piece of vegetable substance of about 1-16th of an inch square, which I had cut out of a green and fresh plant, I placed it betwixt two transparent bodies, after which it was folded in paper, and being subjected to gentle pressure, was allowed to remain there undisturbed, for some months. At the end of that time, the piece of greenish vegetable substance was found to be surrounded at its edges with a white mouldiness, consisting in some places of long, slender, white threads, and at other places having the fibres matted together as in the annexed figure, while small bodies like the fructification of fungi appeared here and there through the mass. On examining this substance with a compound microscope, I found that at its base, where it began to rise up, or separate from the body out of which it grew, it was formed like to the tissue found in the greenish liquid referred to in the first experiment. Having again examined this mouldiness more minutely, I found it was produced by what I may term an exfoliation* of the tissue of the plant. I was able by the microscope to trace the tissue exfoliating and elongating into long, slender, white threads, having here and there through it a few cells adhering together, which the threads had carried along with them, the structure of the whole mass showing the fungous thready substance to be an elongation and modification of the tissue of the plant. If these views be correct, we may see how fungi may be produced by any cause either external or internal, visible or invisible, which produces an abnormal structure, or morbid condition of a plant, and sets the tissue in part free. Again, having added a drop of rain water to the dried gummy matter mentioned in the first experiment, the colour of it nearly disappeared, the tissue becoming almost transparent. As the water evaporated, the greenish colour returned again, giving a striking, and probably true representation of the manner in which much of the greenish slimy matter is formed and becomes visible, which is found at the bottom of any vessel in which water has been kept for a considerable time. Lastly, the foregoing remarks may be the means of suggesting new modes of manipulation to those who are interested in the subject, and who are searching into the origin of parasitic fungi.—*Observator, Elgin.*

* I use the term exfoliation in reference to the exfoliating of the bark of a Birch tree, as it seems to me to convey more distinctly than any other term I can use, the manner in which the tissue seems to rise up, although it is not altogether correct.

CHEAP MANURING.

The farmer well knows that the art of economical manuring does not consist in using the lowest priced dressing, in the smallest quantities; but little farmers are not always aware of what it does consist in: namely, in appropriating the dressing to the course and crop, so that each crop shall have just what it wants, and not that which better suits another product. We must feed our plants as we would our animals, with