ly ſo fouled with the creature’s dung and urine, and with the dirt from their feet, that they do not care for them ; they eat but little of them, and what they do eat does not nouriſh them like the freſh roots.

The ſecond way is by incloſing the ſheep in hurdles, as in the former; but in this they pull up all the turnips which they ſuppoſe the ſheep can eat in one day, and daily remove the hurdles over the ground whence they have pulled up the turnips : by this means there is no waſte, and leſs expence, for a perſon may in two hours pull up all thoſe turnips ; the remaining ſhells of which would have employed three or four labourers a-day to get up with their crooks out of the ground trodden hard by the feet of the ſheep ; and the worſt is, that as in the method of pulling up firſt, the turnips are eaten up clean ; in this way, by the hook, they are waſted, the ſheep do not eat any great part of them, and when the ground comes to be tilled afterwards for a crop of corn, the fragments of the turnip's are ſeen in ſuch quantities on the ſurface, that half the crop at leaſt ſeems to have been waſted.

The third manner is to pull up the turnips, and re­move them in a cart or waggon to ſome other place, ſpreading them on a freſh place every day ; by this me­thod the ſheep will eat them up clean, both root and leaves. The great advantage of this method is, when there is a piece land not far off which wants dung more than that where the turnips grew, which perhaps is alſo too wet for the ſheep in winter, and then the turnips will, by the too great moiſture and dirt of the soil, ſometimes ſpoil the ſheep, and give them the rot. Yet ſuch ground will often bring forth more and larger turnips than dry land, and when they are carried off, and eaten by the ſheep on ploughed land, in dry weather, and on green ſward in wet weather, the ſheep will ſucceed much better ; and the moiſt soil where the turnips grew not being trodden by the ſheep, will be much fitter for a crop of corn than if they had been fed with turnips on it. The expence of hurdles, and the trouble of moving them, are ſaved in this cafe, which will coun­terbalance at leaſt the expence of pulling the turnips and carrying them to the places where they are to be eaten. They muſt always be carried off for oxen.

The diſeaſes to which ſheep are ſubject are theſe, rot, red-water, foot-rot and hoving, ſcab, dunt, rickets, fly-ſtruck, flux, and burſting. Of each of theſe we ſhall give the beſt deſcription in our power, with the moſt approved remedies.

The rot, which is a very pernicious diſeaſe, has of late engaged the attention of ſcientific farmers. But neither its nature nor its cauſe has yet been fully aſcertained. Some valuable and judicious obſervations have, however, been made upon it, which ought to be circulated, as they may perhaps, in many caſes, furniſh an antidote for this malignant diſtemper, or be the means of leading others to ſome more efficaci­ous remedy. Some have ſuppoſed the rot owing to the quick growth of graſs or herbs that grow in wet places. Without premising, that all-bounteous Provi­dence has given to every animal its peculiar taſte, by which it diſtinguiſhes the food proper tor its preſervation and support, if not vitiated by fortuitous circumſtances, it ſeems very difficult to diſcover on philoſophical principles why the quick growth of graſs ſhould render it noxious, or why any herb ſhould at one ſeaſon pro­duce fatal effects, by the admiſſion of pure water only into its component parts, which at other times is perfectly innocent, although brought to its utmoſt ſtrength and maturity by the genial influence of the ſun. Beſides, the constant practice of moſt farmers in the kingdom, who with the greateſt ſecurity feed their meadows in the ſpring, when the graſs ſhoots quick and is full of juices, militates directly againſt this opinion.

Mr Arthur Young, to whom agriculture is much in­debted, aſcribes this diſeaſe to moiſture. In confirma­tion of this opinion, which has been generally adopted, we are informed, in the Bath Society papers@@\*, by a correſpondent, that there was a paddock adjoining to his park which had for ſeveral years cauſed the rot in moſt of the ſheep which were put into it. In 1769 he drained it, and from that time his ſheep were free from this malady. But there are facts which render it doubtful that moiſture is the ſole cauſe. We are told, the dry limed land in Derbyſhire will produce the rot as well as water meadows and stagnant marſhes ; and that in ſome wet grounds ſheep ſuſtain no injury for many weeks.

Without attempting to enumerate other hypotheſes which the ingenious have formed on this ſubject, we ſhall purſue a different method in order to diſcover the cauſe. On diſſecting ſheep that die of this diſorder, a great number of infects called *flukes* (see Fasciola) are found in the liver. That theſe flukes are the cauſe of the rot, therefore, is evident ; but to explain how they come into the liver is not ſo eaſy. It is probable that they are ſwallowed by the ſheep along with their food while in the egg ſtate. The eggs depoſited in the tender germ are conveyed with the food into the ſtomach and inteſtines of the animals, whence they are received into the lacteal veſſels, carried off in the chyle, and paſs into the blood ; nor do they meet with any obſtruction until they arrive at the capillary veſſels of the liver. Here, as the blood filtrates through the ex­treme branches, anſwering to thoſe of the *vena porta* in the human body, the ſecerning veſſels are too minute to admit the impregnated ova, which, adhering to the membrane, produce thoſe animalculæ that feed upon the liver and deſtroy the ſheep. They much reſemble the flat fiſh called plaice, are ſometimes as large as a silver two-pence, and are found both in the liver and in the pipe (anſwering to that of the *vena cava}* which conveys the blood from the liver to the heart.

The common and moſt obvious objection to that opinion is, that this insect is never found but in the li­ver, or in ſome parts of the viſcera, of ſheep that are diſeaſed more or leſs ; and that they muſt therefore be bred there. But this objection will loſe its force, when we consider that many infects undergo ſeveral changes, and exiſtunder forms extremely different from each other. Some of them may therefore appear and be well known under one ſhape, and not known to be the same under a ſecond or third. The fluke may be the laſt ſtate of ſome aquatic animal which we at preſent very well know under one or other of its previous forms.

If this be admitted, it is eaſy to conceive that ſheep may, on wet ground eſpecially, take multitudes of theſe ova or eggs in with their food ; and that the ſto­mach and viſcera of the ſheep being a proper nidus for them, they of courſe hatch, and appearing in their fluke

@@@[m]\* Vol. I. art. xlvi.