but do not depend upon it for their subsistence. Besides, predacious insects do not belong to the prolific class. It is only the harmless tribes that have social instincts and congregate in herds. Fancy lions in flocks and antelopes in families, or sheep in pairs. The battle for life would soon put that right were it needed, but it is not. The predacious insects are too few in number to make much head way against such a multitudinous host as the Colorado potato beetles. Mr. Le Baron says that he has repeatedly walked through potato fields, with the express intention of taking note of their destroyers, without seeing any creature seriously deserving of the name. Nature, if left to her own resources, often exhibits wonderful curative and recuperative powers, which are ordinarily sufficient to preserve the world of insects and that of plants. If in any case like the present she seems to fail, it is because we have abruptly distributed the ballance by supplying these prolific insects with a superabundance of congenial food, and now that we are overrun by them we stand aghast at the consequences. But nature often accommodates her economy to human wants, and rectifies our errors; and we cannot doubt that the Colorado beetle, like other noxious insects that have been equally prevalent, will in time be reduced to reasonable numbers, if they do not wholly disappear even in those districts where it is now most abundant. A single year's destructive potato disease, such as that in 1846, would be sufficient to clear it away. The remedy is a sharp one—too sharp for voluntary imitation. Therefore let us rather see what can be done by direct remedies.

These are either simple hand-picking or sweeping together the masses of the foe when they are in such numbers as to allow them to be so dealt with. That they are often in such numbers we can vouch from personal observation in America. We have seen the potato plants loaded with them in such numbers that a rough shake would send down scores to the ground, and in some of the towns the beetles literally swarmed in such numbers that thousands were daily trodden down on the side walks and streets. Moreover, although the beetle is furnished with large wings, it is not always that it makes use of them. When we have knocked them off the plants they made no effort to fly. This, of course is a great help in hand-picking them, or collecting them by other means. Hand-picking has generally been the first and the principal means adopted to control them, especially in outlying districts, and where persistently followed it has generally proved sufficient to protect the small patches of potatos in cottage gardens and such places, but it requires to be constantly repeated and is of course exceedingly troublesome, and it becomes perfectly impracticable where large crops have to be dealt with. The usual method of collecting them on this small scale is to knock the insect off the plant with a stick into a small basin or pail containing a little water placed to receive them, and as both insect and larvæ drop off readily on the plant being struck great numbers are thus easily collected. These have then to be destroyed, which is usually done by throwing them into a hole in the ground and pouring boiling water over them. When large fields are to be treated other means must be had recourse to. For them an ingenious machine has been devised by the Americans as a substitute for hand-picking. A thing like a scoop is driven up the drills with an apparatus on each side for knocking the insects into the scoop. All such means of dealing with them, however, are clumsy and inefficient in the view of the great fertility and productiveness of the insects. Hundreds may be destroyed, but tens will remain, and these tens will in six weeks' time make matters as bad as they were before. Some more effective remedy was felt to be necessary, and it was found in the arsenical poison known as Scheele's green, and of which the emerald green of our paint boxes is an improved form, and is the pigment that has often produced deleterious effects in houses whose walls have been covered by bright green papers. It is called Paris green in America. In buying it in this country we had better ask for emerald green. It is an arseniate of copper, and, like all compounds of arsenic, is a deadly poison. The external application of this green has been found to be fatal to the Colorado beetle, especially to the grub, on whose soft and fleshy skin the powder more readily acts. It can be applied either in powder or mixed with water. When so mixed it cannot be called a solution, because it does not dissolve; but being constantly shaken up it remains sufficiently in mechanical combination with the water to allow it to be used as a solution. It is to be observed, however, that whether in powder or liquid, it must be used sparingly, for if used pure and too abundantly it will kill the foliage of the potato as effectually as the bugs would, and much more quickly but when used in powder if mixed with 6 to 12 parts of flour ashes, plaster, or slack lime, it causes no serious injury to the foliage and kills the bugs perfectly well. When applied in liquid it ought to be mixed in the proportion of three tablespoonfuls to 8 galls. of water. An ingenious contrivance has been adopted in America for sprinkling the potatoes with the mixture. It consists of a tin can to hold the liquid, made so as to strap on the back of a man. To the bottom of it are affixed two short gutta percha tubes fastened to holes in the bottom, and fitted at the other end with a rose, the bearer walks up and down between the drills with a rose in each hand, sprinkling the potatoes as he goes along. There is an apparatus inside the can for keeping the mixture stirred, and a lever for shutting off the outflow. It is said that from 5 to 8 acres a day can readily be sprinkled by one man using the can, and from 1 to 3 lb. of emerald green, according to the size of the plants, will be sufficient for each acre.

These are plans for dealing with the insect when it has established itself. Something more stringent must be had recourse to in attempting to stamp it out on its first appearance. The course adopted at Mullheim, near Cologne, on the occasion of its recent introduction there, seems to have been judicious. The vines of the potato field were cut down, and the whole field, vines and all, burnt with a mixture of petroleum and sawdust. Thereafter the field was sprinkled with emerald green.

One would have thought that such heroic treatment would have been successful; but it is a startling evidence of the difficulty of dealing with this insect, that it has not been so. Two subsequent outbreaks in the immediate vicinity of the first have since occurred, and there can be no reasonable doubt that they were either successive or continuous broods of the original importation. By continuous we mean the brood resulting from the protracted oviposition of the mother.

It is difficult to stamp out the insect, even where we can place our hand upon it in all its stages in a potato field, it is still more so to prevent its isolated entrance from abroad. We see that living individuals have reached Liverpool in the fodder of a cattle ship. We fear that it would be easier to find a needle in a bundle of hay than to shut all the doors of access to this most persistent intruder. —A. M.

Speaking of the improbability of the Colorado beetle reaching this country, a correspondent recently put this question, "How could it survive a sea voyage without its natural food?" Replying to this question, Mr. J. B. Doyle writes to the *Times* from Bessbrook, Newry, as follows:—In compliance with my request, a gentleman residing in the Sate of New York sent me, by my son-in-law, who was over at the American Exhibition, eight full-grown specimens which he enclosed alive in a little tin box about the size of a five-shilling piece, in which a single hole was punched. My relative had them in his possession for six weeks before I received them. He generally carried them about in his breast coat-