on the surface of the leaf, and the stem, and also on the calyx. As with most other prickly plants the spines are one of the means which nature uses for the distribution and spread of the plant, and there can be no reasonable doubt that the buffaloes, in their annual migrations southwards and northwards, have carried the seed vessels of this potato along with them, and extended its distribution as far as their own range. So long, however, as the dissemination of this plant was confined to the buffaloes, the spread would be confined very much to a northern and southern extension, for the migration of the buffaloes (at least since the time when they have become confined to the prairies west of the Mississippi and Missouri) have been practically north and south.

When, however, the progress of settlers in the west began to make itself felt in these wild regions, a new element was introduced. A traffic in cattle sprang up between the west and the east; the old pasture grounds of the buffalo were encroached upon by herds of the Spanish half-breeds of Texas, and a new direction given to the spread of the wild potato-plant. It then spread easterly.

This prickly potato plant is the food plant of the Colorado beetle, and the insect has accompanied it in its spread eastwards, so that at last, in 1850, it had reached a point within a hundred miles of the city of Omah, in the territory of Nebraska, and also, no doubt, reached many other outlying settlements under similar conditions, where it met the European potato cultivated by the settlers, and at once, contrary to the usual habit of insects, showed a preference for the cultivated exotic species over its native food plant. Attacking it voraciously, and increasing in numbers, it passed on eastwards, and in the short space of 15 years it has spread over the whole breadth of the United States, and after reaching the Atlantic shore, has even made a reconnaisance in Europe.

The above we believe to be the true history of the pest. It was at first said that the insect was a native of the Rocky Mountains, and that it had passed from them across the prairies by movement from potato patch to potato patch; but the idea is inadmissable, because even now (much less in the days before the Pacific Railway) there are no such potato patches to be found there, except c.. the eastern borders.

DESCRIPTION OF THE INSECT.

Little need be said on this score beyond referring the reader to the plate, which is the best description a non-entomological reader can have. The eggs are shining, translucent orange-red. The grub or larva in its first stage is Indian red, so intense as to be nearly black; it then becomes Indian red with a black head, and in its last stage it has become a lighter Indian red, with a double range of black spots along each side of its body towards the margin, and with a black head, the first segment of its body after the head also black, edged in front with yellow. The legs are black and the tarsi have three joints. The pupa is ochreous yellow, without markings. The perfect insect is ochreous yellow, with five black longitudinal stripes on each wing-case, bearing strong punctures along the sides of each stripe, and some spots which are variable in size and form, on the thorax and head. In the individuals that have been acclimatised in Canada and have passed over to Germany, the ground colour has become much paler, almost Naples yellow instead of reddish-yellow, except on the outer margin of the wing-case, which is still reddish yellow. The punctures along the black stripes are also less marked. There are also some black spots on the under side, and the knees and the tarsi are black. The antennæ have the first five joints yellow and the remainder black, and the wings are rosy red. In flight the head is depressed in front and the body behind, so that, looked at from in front, none of the after part is visible.

HABITS.

About the end of May the first eggs of the year are laid. They are placed on the under side of the leaves, and are hatched in about a week after being laid. The larva feeds upon the leaves, and undergoes at least three changes of skin. The period which it passss in the grub state is variable, a good deal depending on the weather, sometimes becoming full-fed in about ten days, but more usually requiring a fortnight, and in some cases three weeks. Seventeen days is said to be a normal average, at least in the northern parts of its range. As soon as it is full-fed it descends and buries itself in the earth, where in three or four days it passes into the pupa state, and after remaining in that state for about ten days longer the perfect insect comes out. In about a week the female begins laying a fresh brood, and continues laying at intervals for some time. The same course is repeated with the new brood, and so it goes on until the beginning of October, when the perfect beetles remaining at that date descend into the ground to pass the winter in a state of torpidity. They descend to a considerable depth—Mr. Riley speaks of feet.

The larva is a most voracious feeder, and has been estimated to increase in weight 200 times between the date of hatching and that of obtaining full maturity. It is melancholy to look at the potato crops when undergoing an attack of this insect—the head hangs down, the stems are flaccid and feeble, the leaves withering, and the whole looks as if struck by some blight.

But besides feeding freely on the cultivated potato, it also seems to be as injurious to the tomato. In Canada we have seen as many on it as on the potato. We have, however, heard within the last few days a very remarkable fact from Canada (London, in Ontario), that although in this present year, 1877, it seems as abundant as ever it was in the last three or four years, it is not doing the same amount of mischief to the potato. Entomologists have not yet said to what this is due, but it may be that it is extending its favours to other plants as well as the potato.

The above statement of the habits of this insect gives sufficient information as to the only period of the year when its arrival in this country need be looked for. From the beginning of October to the end of May it is sound asleep at some depth under ground, consequently it need not be looked for at that time. It is barely possible that some of the newly awakened beetles in the end of May or early June might by chance get shipped over to this country, but this is barely possible. The insects are then, we may presume, intent either on restoring their strength after their long winter's fast by making a copious breakfast, or upon their function of propagating their species so that until after the first brood has been reared they need not be expected. The first brood will be reared by the beginning or middle of July, and from that date until the end of October they go on increasing, both in numbers and, apparently, in vitality, if we may judge from their comparative restlessness and greater disposition to fly about. At first they were very sluggish in their movements. There is nothing to hinder their coming at any time between these dates.

REMEDIES.

Remedies divide themselves into two kinds, direct and indirect.

The indirect consist in the encouragement of the natural enemies of insects generally, and those of this special pest in particular.

Long lists of the insects that have been found preying upon it in America have been given in various of the scientific periodicals of that country. But as Mr. Le Baron, the state entomologist of Illinois, has justly pointed out, there is no one of these many enemies, with the exception perhaps of a minute parasitic ichneumon fly, that is exclusively appropriated to it. They all prey upon the Colorado beetle, when it comes in their way, as they prey on any other species,