

as the birds will devour sown grain unless prevented by artificial means. But in cases where rookeries have been broken up, the crops have in all cases been found to have been afterwards attacked by insects in an unprecedented degree, and in many instances the farmers have prayed for the restoration of these interesting and useful communities.

From a report read before the French Senate, praying for the protecting of those birds which destroy insects hurtful to our crops, we find it stated that the wireworm consumed £160,000 worth of corn in one department alone, and was the cause of the three deficient harvests which preceded 1856. Out of 504 seeds of colza, all but 296 had been rendered worthless by insects, entailing a loss of oil equal to 32·8 per cent. In Germany, according to Latreille, the *Phalaena monacha* consumed whole forests. In Eastern Prussia three years ago, more than 24,000,000 cubic metres of firs had to be cut down, being so destroyed by insects. Man is unable to cope with these destroyers of the produce of his labours. His eye is too dull to perceive, and his hand too slow to catch them. Without the aid of birds he would be vanquished in the struggle. The commission, while it excludes birds of prey from its protection, partially includes buzzards and rooks, because the former consume 6000 mice yearly, and the latter an incalculable amount of wire-worms and other grubs. Sparrows are re-habilitated, and their usefulness shown by reference to the facts, that when their destruction was attempted in Hungary, winged insects increased so rapidly, that rewards for the destruction of sparrows were suppressed, and given for bringing them back. Frederick the Great ordered the destruction of sparrows, because they ate his cherries; but in two years time he found his cherries and all other fruits devoured by caterpillars. In a sparrow's nest in a terrace in the Rue Vivienne were found the remains of 700 Tipula; the larvæ of which turn to wire-worms—the greatest enemy the gardener and farmer have to contend with. Owls, and birds of that class, which agricultural ignorance pursues as birds of evil omen, ought to be welcomed. They are ten times more useful than the best cats, and not dangerous to the larder. The martins that were killed were found to have in their stomachs the remains of 543 insects. In order to protect these insect devourers, the report proposes the prohibition of all means of destroying birds save by fire-arms, with the exception of nets for wild ducks and palmipedes generally. The report also proposes the prohibition of bird-nesting, and destruction of eggs and the young birds."

We append an extract from another source, in reference to rooks versus grubs:—

"The grubs of the tipula family are amongst

the most destructive enemies the gardener and farmer have to contend against. Their eggs are deposited in the soil. As the grubs are hatched they commence an active attack on the roots of most plants. The perfect insect appears in August, and is well known in Scotland as Dadd Longlegs—in England as Gaffer Longlegs, To-Taylor, or Tommy Longlegs. Their operation being carried on under ground, enables them to elude the vigilance of man, but the instinct of the rook is a match for them. It has been calculated that a family of rooks will consume 3,847 grubs per day. Supposing the consumption to be continued throughout the year, would amount to 1,404,156; and supposing single grub to destroy as many plants of wheat or other crop as might grow upon a space nine inches square, a family of rooks would reserve from destruction more than two acres of corn. If we extend our ideas further, and suppose all these grubs to live and propagate the species, it is more than probable that if this species of bird alone were extinct, the labour of the husbandman would be nearly, if not altogether, in vain. Man therefore, should be aware how he disturbs the balance of power maintained throughout the whole animal kingdom.

The power of reproduction in insects is of truly astonishing, and their destructive influence on cultivated crops, and sometimes even on trees of the wild forest is equally remarkable; our farmers of late years in particular, are too well acquainted. The study of the formation, changes and habits of these little creatures is exceedingly interesting, and is pregnant with valuable, practical results. A correspondent of a recent number of the *Ohio Farmer*, speaking of the increase of insects, says:

"It is a well-known fact in natural history that there is such a thing as alternate generations, and it is an equally well-known fact to entomologists, that there are viviparous and oviparous generations of the same insect, during the year. May not the first generation of the wireworm be oviparous, and the succeeding generation be viviparous, as in the following case of aphides. All the aphides, it has been well ascertained, which appear in the spring are exclusively females, no males being found till the autumn; and these females are endowed with fecundity almost incredible. M. Latreille states that one female during the summer months, produce about twenty-five a day, and Mr. Murmur calculated that one aphid may be the genitor of 5,904,900,000 descendants. It is necessary for the young female aphides produced during the summer to pair with a male; and indeed, would be impossible, as no males were then to be found; yet these females go on producing each their twenty-five a day of