

of young grouse. Hence, apart from the evidence acquired through the examination of stomachs, we are led to believe that the young subsist very largely upon such insects. They do not, however, by any means confine themselves to locusts. Caterpillars having smooth skin are consumed, from the largest sphinx larva, to cutworms, army-worms, etc.

As the season proceeds, however, the diet of the Sharp-tailed Grouse changes and while they still regard insects as luxuries, they now turn their attention to various grains, particularly wheat, which they occasionally damage to a small extent, though the damage as a rule does not extend over more than a month, while the injury itself consists of the birds resting upon the stooks and picking out the grains from the heads. By far the greatest portion of the grain eaten at this time, however, is gleaned from the ground, being waste material, and therefore of no value. This grouse is also troublesome sometimes before harvest, when it learns to break down the stems of grain to get at the heads. It is conceivable that if very numerous they might cause considerable damage by this habit, a contingency that does not seem likely to occur, however, under present conditions. They are also objected to occasionally by farmers through choosing one of their fields for a "dancing" ground in the spring months, when perhaps half a hundred males will collect for their morning and evening manoeuvres, thoroughly trampling down an acre or more of land.

Of course, all these little depredations are insignificant when compared with the birds' usefulness as destroyers of noxious insects, and their value for food purposes.

The Pennated, or Square-tailed Grouse (*Tympanuchus americanus*) is another with habits very similar to those of the Sharp-tailed. It, however, chooses the open country for its home, whereas the latter prefers open woodlands.

The food habits of the Ruffed Grouse (*Bonasa* sp.) are much more in question than those of the species mentioned above, for while they undoubtedly devour many caterpillars and other noxious insects during summer time, they feed very largely upon buds in winter, often almost stripping trees, particularly those of poplar, besides badly damaging lilacs and other shrubs. It may be said, however, that the buds eaten are usually flowering ones which in poplars are larger than leaf buds, thus the trees suffer to a comparatively small extent. This argument cannot be used, however, in the case of lilacs, which should be protected by wire netting.

Naturally such injury is confined to the vicinity of woodlands which are the birds' natural homes. Probably the summer food taken fully compensates in value for the damage