ducts arising from their wear and tear. As we watch the development of the insect from the egg, we find that as soon as the grub is hatched food has to be supplied from outside. Previous to the period of hatching there was sufficient material stored away in the egg to supply the wants of the growing embryo, but as soon as the grub is hatched the whole of its energies seem to be devoted to consuming and storing away as much nutriment as possible. Although we are not yet acquainted with the full details of the series of changes which take place in the interior of the grub as it develops first to the chrysalis, and then to the perfect insect, it is quite certain that the food consumed by the grub forms the foundation upon which all the subsequent parts of the insect are built, whatever may be their chemical composition. In other words, it is the food supplied to the rapidly-growing larvae which determines the activity of the imago.

A glance at some of the facts in the economy of insects as a class will show the importance of this generalization. Many habits and peculiarities which otherwise seem very strange, are thus easily explained. If we remember that the struggle for existence in the case of the grub is almost identical with a struggle for nitrogen, we obtain the key to many curious habits. It is well-known that proteid material is relatively scarce in ordinary plants, but what they do contain is, to a large extent, accumulated in or about the seed. The pod-bearing plants, such as peas, beans and clovers, obtain an unusually high percentage of proteid through the medium of the little bacterial masses growing on their roots. It is the function of the plant to build up proteid material from simple chemical substances. Animals are unable to manufacture proteid at first hand, and must obtain their supply directly or indirectly from the plant. Hence the growing portions of the plant, its seed and the various parts of the animal represent proteid in a purer and more concentrated form. Animals which are solely vegetable feeders will therefore have to consume and digest a much larger proportion of food in order to obtain a given amount of protein than is the case with the flesh eaters. The distinction holds good with regard to the larvae of all insects. Caterpillars and other forms which live entirely upon vegetable material, are noted for their voracious appetite, and the great quantity of food they consume in proportion to their weight. Even in the case of those insects in which the larvae and the perfect insect use the same kind of food, the appetite of the latter is small compared with what it was when in the larval stage, but in many cases besides the bee, we find that the larvae lives on totally different food from which it uses when it assumes the imago form. I presume that it is the richness of the tissues of the apple close to the seed which induces the grub of the codlin moth to bore towards the centre of the fruit. Many flies lay their eggs in putrifying animal matter, where their larvae are well provided with nitrogenous material, while their food in the imago form consists almost entirely of sugar. In the case of parasitic insects, such as ichneumon flies, which lay their eggs in the body cavity of caterpillars, the reason seems to be not so much a question of protective influence as that of a more liberal supply of nitrogenous food. The caterpillar has the trouble of collecting proteid material from the plant, while the parasitic larvae simply consumes the tissues of its host and in this way obtains its nitrogenous food with a minimum of trouble. Even while the parasites confine their atten