

In the spring its nasal "yank" is most commonly heard, but when nesting it is extremely quiet, though, I believe, no less common. Often, during the month of May, while eating my lunch in the woods (by choice I should select rather open maple woods and sit by the sugar-shanty) I have been attracted by the faint lisping imitation of the male Nuthatch's spring-time call. After sighting the bird, busily searching for larvæ, it was usually not long before a sudden quick flight to feed its sitting mate, would disclose the nesting-site.

PENTHESTES ATRICAPILLUS, Chickadee.

"Winter visitant; common."*

The Chickadee should be described as a rather scarce summer resident, as I have found it breeding on several occasions, both on the Island and in the immediate vicinity.

HYLOCICHLA GUTTATA PALLASI, Hermit Thrush.

"Summer resident; common. Breeds in Mount Royal Park."*

Mount Royal has become too popular a resort for this species and it is a scarce bird on the Island in the nesting season. Fifteen miles to the north and thirty to the east it becomes the common Thrush of the respective localities. It is particularly fond of sandy ridges with a rather sparse growth of pine and white birch.

THE TEACHING OF INSECT LIFE AND ITS PRACTICAL IMPORTANCE.

BY C. GORDON HEWITT, D.Sc., F.E.S.,
Dominion Entomologist, Ottawa.

Each year sees the origin of new methods, new ideas, and new subjects calculated to produce a more perfectly educated child. There is no doubt a concomitant racking of brains on the part of teachers to adapt and correlate these new additions to their previous curricula. Not infrequently, owing to a somewhat overcrowded and hopeless conglomerated time-table, teachers, usually those whose minds are not sufficiently elastic to enable them to progress with the evolving systems, utter a sigh of despair when any new subject is suggested, and for the sake of these it is necessary to dispel their fears and soothe their troubled spirits with the assurance that this article does not suggest any addition to their systems of instruction: such a sin I would be unwilling to have laid to my account. The reasons

advanced in justification of these random remarks strung together to form an article, are: first, that it is hoped that it may assist those who wish to make the teaching of natural history, in reference to insect life more particularly, of practical value to the child in showing the relations which these animals bear to man; and secondly, to show that this can be accomplished without any addition to already existing curricula, and how it can be correlated with such, at first, seemingly unconnected subjects as geography, hygiene and history. Teachers are realizing that it is only by a correlation of subjects that a harmoniously balanced system of education, as opposed to the ancient, and in many quarters still extant watertight-compartment and cast iron systems, that an all-round developed mind and a mind capable of thinking and reasoning can be produced.

For many years it has been the custom of a number of teachers to give instruction, both in school and in the open field, in the natural history of certain of the commoner creatures. Every child knows the tadpole and is acquainted with the fact that the butterfly is not always the gaudy creature it would have us believe, but that it has passed through a far more lowly stage before its promotion to a winged condition. Such facts as these were commonly inculcated. Then, like a tidal wave, the cult of "Nature Study" swept over the country; a new gospel to many teachers, but an old one to those who were nature lovers themselves. The great benefit of this insurgence was that it assisted in establishing the importance, which all true educationalists have realized for many years, of teaching the child the nature, relations, and meaning of the things around it, its fellow inhabitants of the world. To teach the child to see, what to many people is a closed book, the "fullness of the earth and the riches thereof." To enjoy to the full the unsurpassed pleasures of a country ramble, and to become an intelligent member in the great fraternity of living creatures, instead of an ignorant dweller on isolated Olympian heights. That to my mind is the greatest value of a rational system of instruction and guidance in this inexhaustible lore.

But to-day, such instruction is even more important, for with the advance of scientific investigations we are discovering daily that these humble fellow creatures, especially insects, bear a far greater relationship to the welfare of man than was realized some years ago. What has prevented the penetration and colonization of immense areas of the continent of Africa? Not the hostility of native tribes, nor impenetrable forests, for man has overcome these obstacles in other countries; it was nothing more than the presence of two small insects, the malarial mosquito on the one hand and the tse-tse fly on the other. It was not solely the

exhaustion of financial means which prevented the cutting of the Panama Canal, so much as the impossibility of carrying on the work in that mosquito-infested territory, which obstacle has been overcome by the application by the United States officials of such anti-mosquito measures as the study of the mosquito problem has shown to be necessary. It is now realized that flies, such as our common domestic fly, were responsible, by the carriage of the germs of enteric fever, for far more deaths in the South African War than all the bullets and shells of our adversaries. The activities of insects not only increase the rates of mortality, especially of our young children, in large cities, but also deprive man of the results of his patient toil on the land. It is estimated that in the United States and Canada that the total annual loss due to the depredations of insects alone is from 10 to 25 per cent. of the total value of the crops produced, which loss annually amounts to millions of dollars.

As an example of the enormous depredations of injurious insects in Canada, a species of saw-fly is causing the destruction of all the larch or tamarack trees over a tract of 1,500 miles of forest. In the eastern United States, two insects, the gipsy moth and brown-tail moth, which have been accidentally introduced from Europe, where they are kept in check by their natural parasites, are entailing an annual expenditure of over a million dollars in attempting to control them, and they are still spreading. These facts alone serve to indicate the practical importance, which is not usually realized, of the subject of insect life.

A few years ago an enthusiast suggested that the subject of economic entomology, as the science of entomology as applied to man's welfare is termed, should form a subject of the second curriculum. In reply to this it was pointed out by the writer that if insect life, or in fact animal life, were properly taught in schools, and no one will deny that such should be the case, this would necessarily include a consideration of the relation of animals to ourselves. It is not merely that the cow gives us milk, boots and knife handles; the sheep, clothing and food; the bee, besides being an example of industry, supplies honey and wax; and the silk worm, adornment; but what is equally if not more important (to quote a single example) the house fly is not only an annoying but a dangerous insect, and a menace to public health on account of its habits, which are now well known. These examples serve to show how insect life should be correlated with lessons on other subjects as hygiene, etc. Nor should teachers be unwilling to talk about the less attractive creatures such as the louse, in view of the reports of the Medical Inspectors of schools on the percentage of verminous children; this is not a pleasant subject for a teacher to deal with, but it is a very

necessary one, and one upon which there should be less ignorance than at present prevails. Instruction on insect life is incomplete and insufficient if these important aspects of the subject are not carefully interpreted to the child, and apart from the inherent utility, the increased interest aroused in the child's mind is such that the lesson will be remembered far better than if a mere "nature talk" of the usual type were given.

It is impossible in a short article of this nature, the object of which is one of suggestion rather than of formulation, to indicate the numerous subjects which insect and animal life treated in this manner supplies. There has been far too great a tendency in the past to treat animal life in a really lifeless fashion, and in a merely descriptive and "object lesson" manner. The interrelationship, the methods of living and the functions of animals have been insufficiently considered. To the child they existed, but existence is a small part of life. A living creature is not individualistic, it is a member of a vast kingdom of living beings, striving for existence, preying upon each other and in turn attacked insidiously by enemies greater or smaller than itself; seeking to secure the best means for the continuity of its kind, which is their chief end and paying dearly for mistakes in judgment or action. Individualism is impossible in the world of living things, every unit of life is dependent on and bears some relation to others, and, therefore, to treat them independently is not only impossible but wrong. A diatom is a microscopic unit of vegetable life and interesting in itself, but how much more interesting is it when we know it is not only one of the land-makers, by the accumulation of its microscopic skeletal structures, but also an important foundation of our food, for upon it numerous small crustacea feed, these in turn are consumed by larger crustacea of the crab family, and on these fishes subsist, and in this way contribute to the food of man himself. It is very rarely realized how dependent we are upon the constant warfare which is taking place in the realm of insect life for even our own existence. Were it not for the enemies of insects, to escape from which the latter are constantly striving, we should be deprived of every article of food, and vegetation would not exist, but the activity of certain insects, which are parasitic on the insects destroying our crops and vegetation, keeps them in check and thanks to the habits of those species of birds which feed upon insects, a balance is maintained. If a certain species of insects, owing to a plentiful supply of a suitable food, increases out of proportion, it is almost invariably checked by a concomitant increase in its enemies. The importance of parasitic enemies in controlling these insects destructive to vegetation and in maintaining this balance is well illustrated

in the case of the two moths to which reference has already been made, the gypsy moth and brown-tail moth, which have been introduced into America. They did not bring with them their parasites which keep them in check in European countries, and in the absence of these natural means of control they have increased enormously. For example, between the years 1896 and 1902, the brown-tail moth spread so rapidly that the infested area increased from about 26 square miles to 1,500 square miles. To-day, their parasites are being imported from Europe and Japan, and liberated in the United States in the hope that ultimately these natural means of control will render these insects no longer a conspicuous pest. This is a single instance out of many, showing the effects of this removal of the balance which Nature normally maintains, but with which man is constantly interfering. It can also be shown how insects affect commerce, prevent the colonization of countries, how they influence health, and how they may be responsible for the downfall of a people. No other group of animals bears so serious and important a relation to man himself, and any instruction, therefore, on insect life in which consideration is not given to these practical aspects of the question is as incomplete as a human being without hands.

In rural schools such knowledge is a *sine qua non*, and has been imparted in a number of such schools with which I am acquainted, but frequently owing to the want of the particular knowledge on the part of the teachers themselves such instruction is not given. The absence of instruction and suitable text books on the subject make this, to some extent, excusable, but if goods are demanded there is usually some attempt made to supply them, and if teachers will demand instruction of the nature I have endeavored to describe, efforts are sure to be made to provide the same. It is a question which rests with teachers, and to those these random remarks are made in the hope that a few may fall on good ground in addition to those which are destined to fall and be choked by the thorns of an over-crowded curriculum.

CONCHOLOGICAL NOTES.

Mr. Frank Collins Baker, of the Chicago Academy of Sciences, has issued his monograph on the Lymnæidæ of North and Middle America, recent and fossil. The volume is of 539 pages with 53 half-tone plates, and numerous illustrations in the text. The morphology of Lymnæa is fully dealt with, and a new and, I think, highly satisfactory classification arranged, based in the



Hewitt, C. Gordon. 1911. "The teaching of Insect Life and its practical importance." *The Ottawa naturalist* 25(4), 63–67.

View This Item Online: <https://www.biodiversitylibrary.org/item/17544>

Permalink: <https://www.biodiversitylibrary.org/partpdf/369507>

Holding Institution

MBLWHOI Library

Sponsored by

MBLWHOI Library

Copyright & Reuse

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.