RARE MOTHS AND BUTTERFLIES AND SOME WASPS.

Since I last spoke to you about moths and butterflies I have had some really rare ones sent to me by various girls and boys from north and south. I should like to tell you of a few of these, so that if you should see any like them you may let me know.

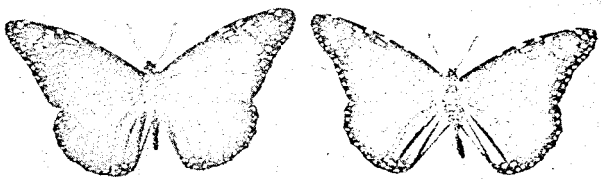
Last February Fanny Topine, of the Waiau School, Taranaki, sent me a beautiful butterfly, its black body spotted with white, its golden-brown wings with black-bordered lower edges also spotted with white, and narrow black bands following the veining of its wings. Her teacher told her it was a milkweed-butterfly,* and perhaps that is as good a name for it as any, since its food plant is a kind of milkweed.† He said, too, that it was the first of its kind he had seen in New Zealand.

Whilst the butterfly has been found now and again in various parts of New Zealand, it is very uncommon, and it is not certain that it is a native of New Zealand at all. The fact that birds are able to fly across the ocean from Australia and the Pacific islands to New Zealand is wonderful enough, but who would suppose that a butterfly could do so? Yet at one time, and not so very long ago, the milkweed-butterfly was not known to exist in any island in the Pacific Ocean at all. Scientists have actually observed the various dates when the butterfly first appeared as a permanent inhabitant in the different islands. I shall not trouble you with dates, but it seems to be only about sixty years since the butterfly was noticed to have become common in the Pacific.

* Its scientific name is *Danaida archippus*. † Asolepias or swallow-wort.

It is very common in America, its range extending far to the north and far to the south; and it is supposed that from America it has scattered far and wide over the Pacific. No one knows why it takes these long adventurous journeys; it seems to be a kind of insect Columbus setting out on expeditions into the unknown, discovering new countries and settling there if conditions are favourable.

Then, if it is such an adventurer, why did it not settle in the Pacific islands centuries ago and not only in the last sixty years or so? Because, apparently,



THE MILKWEED-BUTTERFLY, MALE (LEFT) AND FEMALE (RIGHT).

the conditions were not favourable. If it came to an island where it was unable to find a plant on which its caterpillar feeds, it must either return or perish; and no doubt thousands and thousands have perished in this way. It might lay its eggs; but most butterflies lay their eggs on the plant that forms the food of the caterpillar, or, if not, the caterpillar hunts for the plant until it is found; if no plant is to be found only one thing can happen.

When men seek new lands they take their necessities with them. They take plants and grain and animals such as will thrive in the new land and

be of use to them. Unintentionally, too, they take weeds with them, and that is why docks and fat-hen and wireweed are such nuisances in the garden. Milkweed is one of these weeds, as its very name tells us; and among other nuisances the roving white man took milkweed to the Pacific—into Australia and into New Zealand.

No doubt the milkweed-butterfly visited these lands long before the white man, but the butterfly could not carry its necessities with it, and, not finding its food, perished. It is said by the Maoris that this butterfly, by them called *kakahu*, was in New Zealand before the white man. It may have been. I believe that one specimen was found in New Zealand over eighty years ago; but not until milkweed was plentiful did the butterfly become common; and the same seems to be true of Australia.

It is known that it flies far out over the ocean, because it has settled on ships when they have been from two hundred to three hundred miles or more from land, and has then been so active that it could not be caught—as if it had merely settled out of curiosity, not because it was tired. It has been seen, too, resting on the calm sea, holding its wings so that they were not wetted by the water, then rising again and continuing on its way.

I can believe this last fact more readily because I have seen a similar thing. One summer day we were sailing in a small boat on the sea, over a mile from the shore of Kapiti, when I saw a dragon-fly on the surface of the water. I thought it had fallen in, but was surprised when, on the ripples from the boat reaching it, I saw its wings quiver and raise it from the water; and away it flew. I could not help thinking how quickly that gleaming dragon-fly would have disappeared had a barracouta caught sight of it.

There is yet more of interest about the milkweed-butterfly. Whilst the male and female are very much

alike—they may be over four inches across the wings—on one there is a small black patch in an angle of the veins in the lower half of the hindwings. This patch is a scent-sac, or sachet, and shows that that insect is a male. In his wing he actually carries a little receptacle where he keeps a fragrant scent. Some butterflies carry the sachet on the upper surface of the wing, some on the under-surface. A beautiful dark butterfly belonging to the same family as the milkweed-butterfly has quite a large sachet on the under-surface.

We think of the butterflies as living flowers: they are like them in this, too—some emit fragrance, some do not.

Lizzie Free, of the same school, at Waiau, Taranaki, sent me a moon-moth* in November, 1923, and in June of this year another scholar, N. Garland, of the Kariotahi School, near Auckland, sent me another specimen. The first one was rather battered about—moths and butterflies soon spoil their beautiful wings—but the second was an almost perfect specimen.

This moth has been found only in a few places in New Zealand. It measures about three inches across the wings, which are rich deep brown in colour, the forewings being darker than the hindwings. As seen in the illustration on the next page, on both fore and hind wings are three dark wavy lines, and on each forewing in addition near the upper edge is a crescent-moon-shaped mark with black and orange edging on a bluish ground. These marks are shining, lustrous, and waxy, and were called "moony eyes" by W. Colenso, a naturalist of New Zealand, who first found the caterpillar of the moth so long ago as the year 1878.

He described the caterpillar, which is over three and a half inches in length, as ash-coloured, finely speckled with tiny points of black and red, with two

* Its scientific name is *Dasypodia selenophora.*

bright red spots close together on the back near the tail, and two large triangular dark splashes seen on the back when the creature moved. It was dull white underneath, and its head pale yellow. He found it difficult to see the under-side, as always on being touched the caterpillar coiled itself up very quickly and closely.

He found it on the bark of a silver-wattle, which is an acacia. It seemed quiet and did not want to move, and would eat nothing. Wishing to know its food plant, he tried to feed it with several kinds of leaves, but it refused to eat. After reading about the milkweed-butterfly you will realize how important

THE MOON-MOTH, FEMALE (LEFT) AND MALE (RIGHT).

it is to know what a caterpillar eats. The naturalist kept it under glass, and before long it spun a small white cocoon, pulling together the edges of a geranium-leaf as a shelter when it went off into its strange transforming sleep.

This was towards the end of January; and after watching patiently every day Mr. Colenso was rewarded when, on the 21st March, the perfect insect emerged. It was the beautiful moon-moth. Its body and the upper parts of its legs were covered with a fine, silky down of a golden-brown colour.

The perfect insect was supposed to be found during January, February, and March, but the first one sent

me came in the middle of November, the second near the middle of June.

Who can discover on what plant the caterpillar feeds? And who can discover the use of the moony eyes? They are slightly luminous, and glow palely in the dark, as if the moth carried fairy lanterns on its wings. To us, who know little about these things, it seems almost a waste of beauty when a creature so lovely lasts so short a while; yet the flowers last no longer, and, as these contain the honey food of the moth, the creature goes to sleep when the sister flower fades and falls.

The moon-moth has been found only in the north. There is another moth that has been found only in

FEMALE, MALE, AND COCOON OF THE MOUNTAIN MOON-MOTH.

the south—that is the day-flying mountain-moth,* a specimen of which was sent by Jack Cosgrove, of the Waikaka School, Southland, in November last. This moth has been found only in South Canterbury and south of the Waitaki River. Another species of the family has been found in Nelson, and another at Lake Wakatipu; but all are scarce.

The wings of the male are about an inch and a half across. The forewings are black, with two broad dull-yellow streaks parallel with the top and lower edges, and fine lines between the streaks; the hind-wings are bright yellow with a broad black band at

* The scientific name is *Matacrias strategica*.

the outer edge, ending in a black spot, the band having an edging of crimson.

The female is without wings, seems to be a weakly creature, and is usually found under logs, as if in hiding. Except for laying eggs, she appears to have no reason for existence; for she creeps from the cocoon, hides away from the light, lives for a short time in the cold and dark, lays her eggs, and dies. The chrysalis, which is jet-black, is often found with that of the magpie-moth. The caterpillar is about an inch and a quarter in length, and feeds on grass. Some are glossy black above, rich brown beneath; these are thought to be the caterpillars of the future female moths; the caterpillars of the males are glossy brown above, light brown beneath. They, too, coil up into a ball if touched. They are very hairy, like the caterpillar of the magpie-moth, and spin a brown cocoon, into which they cleverly work the hairs from their own bodies.

The moths emerge during the night or early morning, the wings of the males being dry by the evening. The wingless female is dull grey in colour.

This moth would form a most interesting subject of study. Why is the female without wings? Why is she destined to spend her short life under logs and away from the light, when the male is able to fly swiftly in the sunlight among the trees and flowers? Yet we may be sure that there are things that give her joy too; it may be that the very forming and laying of the eggs is as great a joy to her as the blue sky and sunshine, the wind, and the flowers are to the male. What does it matter that she is in the dark? To us the dark night brings the wonder of the moon and the stars and the fairy-land of dreams: who knows but that the darkness brings to the female mountain-moth similar treasures to charm away the few brief hours of her dull existence?

(To be continued.)

because he always did ten times as much as he was paid to do.

There is no doubt that Poe was poor and unhappy for many years, and now that the veil has been lifted from his tragic story we know what poverty, sickness, and heartache he and his wife had to fight against. His work, however, redeems his life, and I like to repeat the lovely thing a clever writer said of him, "He is the Piper of Hamelin to all the later English poets. There is hardly one whose music does not show traces of Poe's influence."

Yours sincerely,

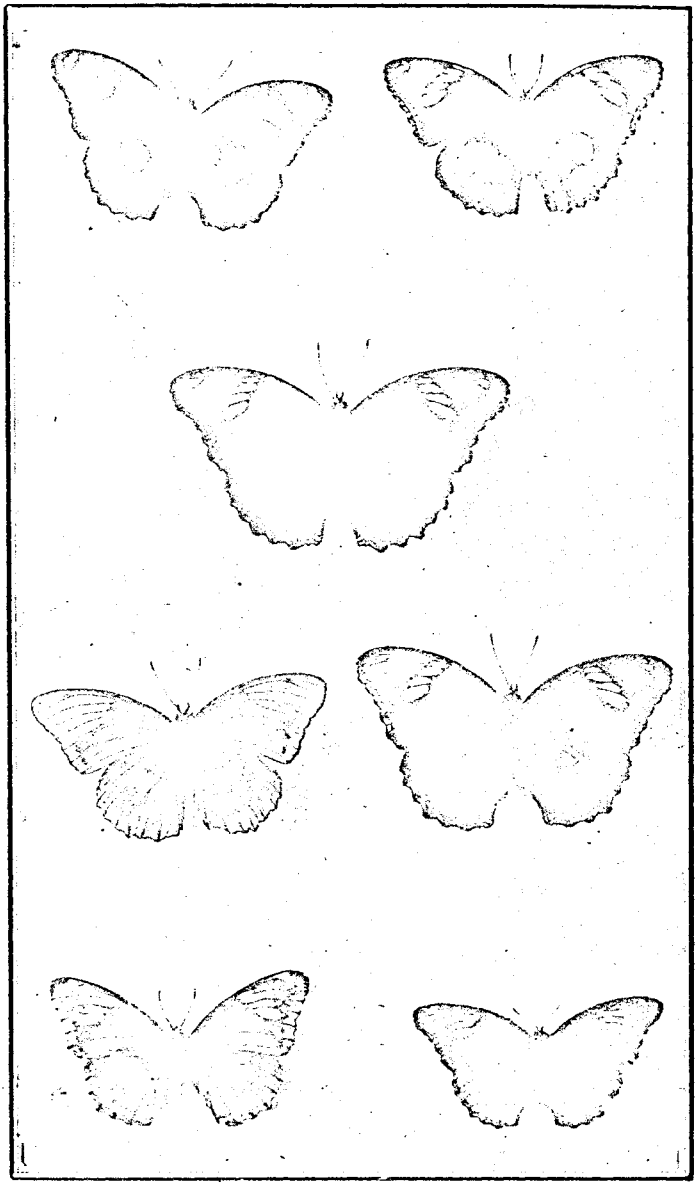
JOHN LECTEUR.

RARE MOTHS AND BUTTERFLIES AND SOME WASPS.

(Continued from page 213.)

I have told you of the two moon-moths that were sent to me; I have yet to tell you of a blue-moon butterfly.* This was sent to me by John McLennan, of the Little Grey School, Westland, on the 12th June last. It measures three and three-quarter inches across the expanded wings, and it is one of the finest of the butterflies found in New Zealand. It is found also in India, Australia (where the largest and finest varieties are found), Fiji, Samoa (where the smallest are found), and Rarotonga. It is rare in New Zealand, the first one being captured at Auckland in the year 1854. Later on, another was captured at Christchurch. These were both males. The first female was captured at Napier in January, 1876. Since then, from time to time, at long intervals, specimens have been seen or caught; and last year one was secured by a schoolboy at Motunui, Taranaki.

* The scientific name is *Hypolimnas bolina.*



THE NEW ZEALAND BLUE-MOON BUTTERFLIES.

The one I received from Westland was a male. His colouring is always the same—a deep brownish-black, with four irregular moony spots, one on every wing.

The centres of the moons are whitish, and around the whitish centre is a ring of the loveliest purplish-blue, seen only when the wings are held at certain angles to the light.

I have called it the "blue-moon butterfly" because it is so rare; it is found only "once in a blue moon." Besides, it carries the blue moon on its wings, and it is like other blue moons—it is there all the time, but it is only when you are in certain positions that you see it. That is like the blue bird of happiness, too; it is always ready for our company if we are ready to receive it.

Beautiful as the male is, however, the female is even more beautiful. The illustration shows how different the male and female markings are, but the illustration gives no idea of the lovely colouring of the female — purple, and orange, and brown, and cream, all in many varying shades and mixed in different proportions. The male is almost exactly the same in all parts where found; the female is always different.

How can I make you realize the difference? It is as if the garden of the world were nature's ballroom, and these lovely princes and princesses had come for a brief summer dance. As you know, at a ball the young men all look the same as far as their clothes are concerned. When you come to the young ladies, however, each one wishes to be different; and all are different. Their dresses are different in colour, material, and shape. So it is with the butterflies. Nature seems to have lavished her beauty upon them, and they dance in the sunshine of happiness as if they knew it.

The food plant of the blue-moon butterfly is not known. When I speak of the food plant I mean the

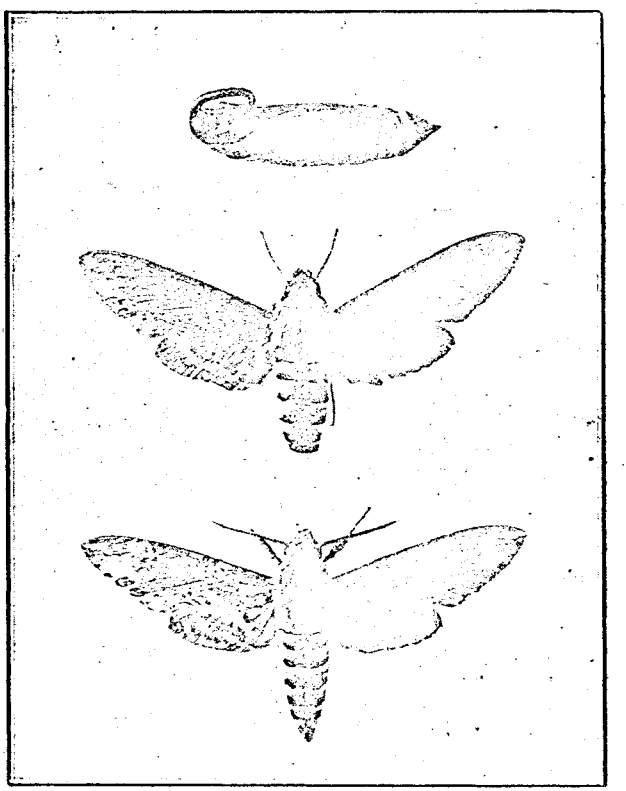
plant on which the eggs are laid and on which the caterpillar feeds. The butterfly itself, as you know, sips the honey that its sister flowers hold for it in their tiny jars. Perhaps some of you may one day see a blue-moon butterfly on a flower or leaf. Watch it. It may be only feeding, but it may be about to lay its magical eggs. If so, you will have a chance of rearing this wonderful creature; or if you have no convenient place at home where the eggs may hatch and the caterpillars spin their cocoon, send a small piece of the plant with the eggs on it to Miss A. Castle, Dominion Museum: she has an insect nursery there where the eggs may hatch out, and she will tell you what happens.

AUSTRALIAN BLUE-MOON BUTTERFLIES (MALE AND FEMALE).

That reminds me, too, that sometimes we are able to see something of what happens. From the Kariotahi School there was sent to me the chrysalis of a moth, which one of the scholars found in the sand of the beach of the west coast near Auckland. It was the chrysalis of a sphinx-moth—a shiny, dark-brown case, not an inch long. It sleeps without any other covering in the earth until the moth is ready to emerge. The wonderful thing about this chrysalis was that it was very nearly transparent, and you could see the actual shape of the creature inside that was slowly changing into a moth. There, as if through a window, you saw its legs, head, and folded wings. It was

nature letting you have a peep at one of the wonderful things that she usually likes to do in the dark.

Now for a few words about a very different creature. David Bayer, of Saints Peter and Paul's School, North Auckland, sent me nothing less than a

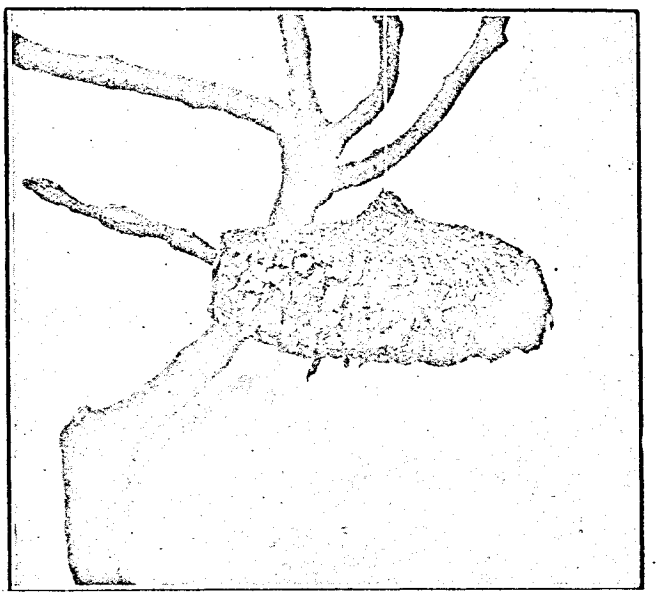


THE SPHINX-MOTH (CHRYSALIS, FEMALE, AND MALE).

wasps' nest. When I receive boxes and tins by post now I always open them very carefully; spiders are very active after a long night of journeying, and so were the wasps. I often get the boxes before the letters, too, so never know what kind of jack-in-the-box may spring out to startle me. Sometimes, when

I have slowly opened the tin, peeping through the crack, and listening closely, I have found a piece of rock enclosed; or a curious stone; or an earthworm in a bottle. Still, it is always better to be safe.

The illustration shows the wasps' nest. It has been hung by a thread (which is much longer than the one the insect uses) to show you how it hangs in position.



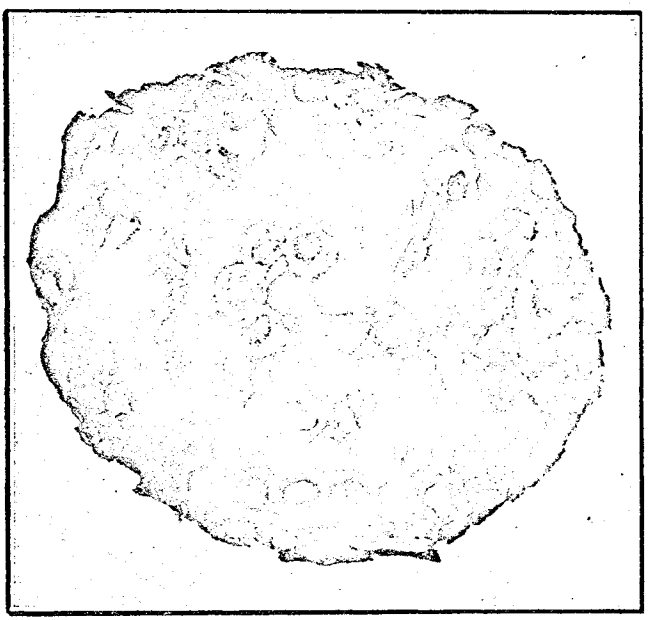
THE WASPS' NEST.

The openings to the cells, which are like honeycomb, are underneath, so that if it rains the water will run off as it would from a mushroom or an umbrella.

About twenty wasps—which in some country districts in England are called "wopses"—had hatched out when the nest reached me, so you may be sure it was lively. David said in his letter that they

could use their sting more than once, as one stung him several times. He found the nest on a peach-tree; and says that on hot days the wasps come out and swarm on the lemon and camellia trees.

There were no wasps in New Zealand originally. The one sent from Auckland is an Australian insect



UNDER-SIDE OF WASPS' NEST.

which has been introduced here in some accidental way.

I had nowhere to keep the wasps, so took them to Miss Castle, at the Museum, and she has kindly noted what she has observed :—

"The wasp sent is a native of Australia, and has been found in various parts of New Zealand—North

Auckland, Dunedin, and Waipori. The nest arrived by post in a fairly large round tin with a considerate notice that wasps were in it. There was great commotion with twenty excited wasps in the tin! With a little care they and their nest were removed to a large glass jar, where I could watch the little colony. But, alas! in captivity these wonderful workers were bewildered; and it was hardly fair to expect them to be at home in what was really a prison. The twenty that had arrived with the nest were males and females. The former looked gay in yellow and brown markings, and seemed to be constantly polishing themselves till they shone like metal. Legs, body, face, and antennæ were repeatedly rubbed. The females stood in clusters, apparently indifferent to appearances. They were inactive on dull days, but brightened up and were more lively on sunny days; and one sunny morning all were given their freedom. It may prove too cold for them, but it was kinder to let them fall into their long sleep in freedom rather than in prison.

"Now we could examine the nest more closely. There were empty cells from which the twenty had emerged; there were cells with delicate silken covers, sheltering pupæ, soon to emerge—helpless grubs, altogether dependent upon the females and workers for their food. Within a few days ten more wasps emerged, this time all females and workers.

"I had given them moistened sugar, but it had attracted only a few—principally workers. During a few sunny days others emerged, and the colony became quite gay, evidently loving the sunshine. One day I watched some of the females for an hour—and what do you think I saw? They went round examining all the open cells; then, when they came to the grubs, these were taken out and quickly nipped to death. Evidently the proper food was not there; the insects

knew this, and it was surely kinder to kill the grubs quickly, as they did, than to let them die slowly of starvation. As winter approached, too, the females and workers became weak, and unable to attend to the young; and Henri Fabre, the great French naturalist, tells us that this is the last act of a dying colony of wasps. Soon afterwards all but a few females die; these seek sheltered nooks in which to pass the winter, and become the builders of the new nest in the following spring."

One illustration shows the nest in its hanging position; the other shows the under-side. Two of the dead wasps have been pinned on the surface so that you may see their size compared with that of the cells.

I am afraid I shall have to leave mention until next month of some of the other interesting things my school friends have sent me.

—JOHANNES C. ANDERSEN.

TO A BUTTERFLY.

[As soon as the warm days come round we see the butterfly flitting from tree to tree and from flower to flower. We know his life is a short one, but it is usually regarded as a bright and happy one, for he spends his time among the beautiful gifts of Nature. Poets have sung of him, and his life seems to recall the days of their childhood, when life was gay and free from care. Here are two short poems by Wordsworth where such thoughts are expressed. In the first one he recalls how he used to chase these harmless little creatures, whereas his sister almost feared to touch them lest she should hurt them, and he blesses her for her kindly thought. It would be better for the world if we were all like Emmeline, for she teaches us to love these delicate, inoffensive, little things. Her example has had