

## INSECT STUDIES

## BUTTERFLIES

## I

Would that I could hope for the luck of that Chinese scholar known to Japanese literature as "Rosan"! For he was beloved by two spirit-maidens, celestial sisters, who every ten days came to visit him and to tell him stories about butterflies. Now there are marvelous Chinese stories about butterflies -- ghostly stories; and I want to know them. But never shall I be able to read Chinese, nor even Japanese; and the little Japanese poetry that I manage, with exceeding difficulty, to translate, contains so many allusions to Chinese stories of butterflies that I am tormented with the torment of Tantalus... And, of course, no spirit-maidens will even deign to visit so skeptical a person as myself.

I want to know, for example, the whole story of that Chinese maiden whom the butterflies took to be a flower, and followed in multitude,-- so fragrant and so fair was she. Also I should like to know something more concerning the butterflies of the Emperor Genso, or Ming Hwang, who made them choose his loves for him... He used to hold wine-parties in his amazing garden; and ladies of exceeding beauty were in attendance; and caged butterflies, set free among them, would fly to the fairest; and then, upon that fairest the Imperial favor was bestowed. But after Genso Kotei had seen Yokihi (whom the Chinese call Yang-Kwei-Fei), he would not suffer the butterflies to choose for him,-- which was unlucky, as Yokihi got him into serious trouble... Again, I should like to know more about the experience of that Chinese scholar, celebrated in Japan under the name Soshu, who dreamed that he was a butterfly, and had all the sensations of a butterfly in that dream. For his spirit had really been wandering about in the shape of a butterfly; and, when he awoke, the memories and the feelings of butterfly existence remained so vivid in his mind that he could not act like a human being... Finally I should like to know the text of a certain Chinese official recognition of sundry butterflies as the spirits of an Emperor and of his attendants...

Most of the Japanese literature about butterflies, excepting some poetry, appears to be of Chinese origin; and even that old national aesthetic feeling on the subject, which found such delightful expression in Japanese art and song and custom, may have been first developed under Chinese teaching. Chinese precedent doubtless explains why Japanese poets and painters chose so often for their *geimyo*, or professional appellations, such names as Chomu ("Butterfly-Dream)," Ichu ("Solitary Butterfly)," etc. And even to this day such *geimyo* as Chohana ("Butterfly-Blossom"), Chokichi ("Butterfly-Luck"), or Chonosuke ("Butterfly-Help"), are affected by dancing-girls. Besides artistic names having reference to butterflies, there are still in use real personal names (*yobina*) of this kind,-- such as Kocho, or Cho, meaning "Butterfly." They are borne by women only, as a

rule,-- though there are some strange exceptions... And here I may mention that, in the province of Mutsu, there still exists the curious old custom of calling the youngest daughter in a family Tekona,-- which quaint word, obsolete elsewhere, signifies in Mutsu dialect a butterfly. In classic time this word signified also a beautiful woman...

It is possible also that some weird Japanese beliefs about butterflies are of Chinese derivation; but these beliefs might be older than China herself. The most interesting one, I think, is that the soul of a living person may wander about in the form of a butterfly. Some pretty fancies have been evolved out of this belief,-- such as the notion that if a butterfly enters your guest-room and perches behind the bamboo screen, the person whom you most love is coming to see you. That a butterfly may be the spirit of somebody is not a reason for being afraid of it. Nevertheless there are times when even butterflies can inspire fear by appearing in prodigious numbers; and Japanese history records such an event. When Taira-no-Masakado was secretly preparing for his famous revolt, there appeared in Kyoto so vast a swarm of butterflies that the people were frightened,-- thinking the apparition to be a portent of coming evil... Perhaps those butterflies were supposed to be the spirits of the thousands doomed to perish in battle, and agitated on the eve of war by some mysterious premonition of death.

However, in Japanese belief, a butterfly may be the soul of a dead person as well as of a living person. Indeed it is a custom of souls to take butterfly-shape in order to announce the fact of their final departure from the body; and for this reason any butterfly which enters a house ought to be kindly treated.

To this belief, and to queer fancies connected with it, there are many allusions in popular drama. For example, there is a well-known play called Tonde-deru-Kocho-no-Kanzashi; or, "The Flying Hairpin of Kocho." Kocho is a beautiful person who kills herself because of false accusations and cruel treatment. Her would-be avenger long seeks in vain for the author of the wrong. But at last the dead woman's hairpin turns into a butterfly, and serves as a guide to vengeance by hovering above the place where the villain is hiding.

-- Of course those big paper butterflies (o-cho and me-cho) which figure at weddings must not be thought of as having any ghostly signification. As emblems they only express the joy of living union, and the hope that the newly married couple may pass through life together as a pair of butterflies flit lightly through some pleasant garden,-- now hovering upward, now downward, but never widely separating.

A small selection of hokku (1) on butterflies will help to illustrate Japanese interest in the aesthetic side of the subject. Some are pictures only,-- tiny color-sketches made with seventeen syllables; some are nothing more than pretty fancies, or graceful suggestions;-- but the reader will find variety. Probably he will not care much for the verses in themselves. The taste for Japanese poetry of the epigrammatic sort is a taste that must be slowly acquired; and it is only by degrees, after patient study, that the possibilities of such composition can be fairly estimated. Hasty criticism has declared that to put forward any serious claim on behalf of seventeen-syllable poems "would be absurd." But what, then, of Crashaw's famous line upon the miracle at the marriage feast in Cana?--

Nympha pudica Deum vidit, et erubuit. [1]

Only fourteen syllables -- and immortality. Now with seventeen Japanese syllables things quite as wonderful -- indeed, much more wonderful -- have been done, not once or twice, but probably a thousand times... However, there is nothing wonderful in the following hokku, which have been selected for more than literary reasons:--

Nugi-kakuru [2] Haori sugata no Kocho kana!

[Like a haori being taken off -- that is the shape of a butterfly!]

Torisashi no Sao no jama suru Kocho kana!

[Ah, the butterfly keeps getting in the way of the bird-catcher's pole! [3]]

Tsurigane ni Tomarite nemuru Kocho kana!

[Perched upon the temple-bell, the butterfly sleeps:]

Neru-uchi mo Asobu-yume wo ya -- Kusa no cho!

[Even while sleeping, its dream is of play -- ah, the butterfly of the grass! [4]]

Oki, oki yo! Waga tomo ni sen, Neru-kocho!

[Wake up! wake up! -- I will make thee my comrade, thou sleeping butterfly. [5]]

Kago no tori Cho wo urayamu Metsuki kana!

[Ah, the sad expression in the eyes of that caged bird! -- envying the butterfly!]

Cho tonde -- Kaze naki hi to mo Miezeni ki!

[Even though it did not appear to be a windy day, [6] the fluttering of the butterflies --  
!]

Rakkwa eda ni Kaeru to mireba -- Kocho kana!

[When I saw the fallen flower return to the branch -- lo! it was only a butterfly! [7]]

Chiru-hana ni -- Karusa arasou Kocho kana!

[How the butterfly strives to compete in lightness with the falling flowers! [8]]

Chocho ya! Onna no michi no Ato ya saki!

[See that butterfly on the woman's path,-- now fluttering behind her, now before!]

Chocho ya! Hana-nusubito wo Tsukete-yuku!

[Ha! the butterfly! -- it is following the person who stole the flowers!]

Aki no cho Tomo nakereba ya; Hito ni tsuku

[Poor autumn butterfly!-- when left without a comrade (of its own race), it follows  
after man (or "a person")!]

Owarete mo, Isoganu furi no Chocho kana!

[Ah, the butterfly! Even when chased, it never has the air of being in a hurry.]

Cho wa mina Jiu-shichi-hachi no Sugata kana!

[As for butterflies, they all have the appearance of being about seventeen or eighteen years old.[9]]

Cho tobu ya -- Kono yo no urami Naki yo ni!

[How the butterfly sports,-- just as if there were no enmity (or "envy") in this world!]

Cho tobu ya, Kono yo ni nozomi Nai yo ni!

[Ah, the butterfly! -- it sports about as if it had nothing more to desire in this present state of existence.]

Nami no hana ni Tomari kanetaru, Kocho kana!

[Having found it difficult indeed to perch upon the (foam-) blossoms of the waves,-- alas for the butterfly!]

Mutsumashi ya! -- Umare-kawareba Nobe no cho. [10]

[If (in our next existence) we be born into the state of butterflies upon the moor, then perchance we may be happy together!]

Nadeshiko ni Chocho shiroshi -- Tare no kon? [11]

[On the pink-flower there is a white butterfly: whose spirit, I wonder?]

Ichi-nichi no Tsuma to miekeri -- Cho futatsu.

[The one-day wife has at last appeared -- a pair of butterflies!]

Kite wa mau, Futari shidzuka no Kocho kana!

[Approaching they dance; but when the two meet at last they are very quiet, the butterflies!]

Cho wo ou Kokoro-mochitashi Itsumademo!

[Would that I might always have the heart (desire) of chasing butterflies![12]]

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Besides these specimens of poetry about butterflies, I have one queer example to offer of Japanese prose literature on the same topic. The original, of which I have attempted only a free translation, can be found in the curious old book *Mushi-Isame* ("Insect-Admonitions"); and it assumes the form of a discourse to a butterfly. But it is really a didactic allegory,-- suggesting the moral significance of a social rise and fall:--

"Now, under the sun of spring, the winds are gentle, and flowers pinkly bloom, and grasses are soft, and the hearts of people are glad. Butterflies everywhere flutter joyously: so many persons now compose Chinese verses and Japanese verses about butterflies.

"And this season, O Butterfly, is indeed the season of your bright prosperity: so comely you now are that in the whole world there is nothing more comely. For that reason all other insects admire and envy you;-- there is not among them even one that does not envy you. Nor do insects alone regard you with envy: men also both envy and admire you. Soshu of China, in a dream, assumed your shape;-- Sakoku of Japan, after dying, took your form, and therein made ghostly apparition. Nor is the envy that you inspire shared only by insects and mankind: even things without soul change their form into yours;-- witness the barley-grass, which turns into a butterfly. [13]

"And therefore you are lifted up with pride, and think to yourself: 'In all this world there is nothing superior to me!' Ah! I can very well guess what is in your heart: you are too much satisfied with your own person. That is why you let yourself be blown thus

lightly about by every wind;-- that is why you never remain still,-- always, always thinking, 'In the whole world there is no one so fortunate as I.'

"But now try to think a little about your own personal history. It is worth recalling; for there is a vulgar side to it. How a vulgar side? Well, for a considerable time after you were born, you had no such reason for rejoicing in your form. You were then a mere cabbage-insect, a hairy worm; and you were so poor that you could not afford even one robe to cover your nakedness; and your appearance was altogether disgusting. Everybody in those days hated the sight of you. Indeed you had good reason to be ashamed of yourself; and so ashamed you were that you collected old twigs and rubbish to hide in, and you made a hiding-nest, and hung it to a branch,-- and then everybody cried out to you, 'Raincoat Insect!' (Mino-mushi.) [14] And during that period of your life, your sins were grievous. Among the tender green leaves of beautiful cherry-trees you and your fellows assembled, and there made ugliness extraordinary; and the expectant eyes of the people, who came from far away to admire the beauty of those cherry-trees, were hurt by the sight of you. And of things even more hateful than this you were guilty. You knew that poor, poor men and women had been cultivating daikon (2) in their fields,-- toiling under the hot sun till their hearts were filled with bitterness by reason of having to care for that daikon; and you persuaded your companions to go with you, and to gather upon the leaves of that daikon, and on the leaves of other vegetables planted by those poor people. Out of your greediness you ravaged those leaves, and gnawed them into all shapes of ugliness,-- caring nothing for the trouble of those poor folk... Yes, such a creature you were, and such were your doings.

"And now that you have a comely form, you despise your old comrades, the insects; and, whenever you happen to meet any of them, you pretend not to know them [literally, 'You make an I-don't-know face']. Now you want to have none but wealthy and exalted people for friends... Ah! You have forgotten the old times, have you?

"It is true that many people have forgotten your past, and are charmed by the sight of your present graceful shape and white wings, and write Chinese verses and Japanese verses about you. The high-born damsel, who could not bear even to look at you in your former shape, now gazes at you with delight, and wants you to perch upon her hairpin, and holds out her dainty fan in the hope that you will light upon it. But this reminds me that there is an ancient Chinese story about you, which is not pretty.

"In the time of the Emperor Genso, the Imperial Palace contained hundreds and thousands of beautiful ladies,-- so many, indeed, that it would have been difficult for any man to decide which among them was the loveliest. So all of those beautiful persons were assembled together in one place; and you were set free to fly among them; and it was decreed that the damsel upon whose hairpin you perched should be augustly summoned to the Imperial Chamber. In that time there could not be more than one Empress -- which was a good law; but, because of you, the Emperor Genso did great mischief in the land. For your mind is light and frivolous; and although among so many beautiful women there must have been some persons of pure heart, you would look for nothing but beauty, and so betook yourself to the person most beautiful in outward appearance. Therefore many

of the female attendants ceased altogether to think about the right way of women, and began to study how to make themselves appear splendid in the eyes of men. And the end of it was that the Emperor Genso died a pitiful and painful death -- all because of your light and trifling mind. Indeed, your real character can easily be seen from your conduct in other matters. There are trees, for example,-- such as the evergreen-oak and the pine,-- whose leaves do not fade and fall, but remain always green;-- these are trees of firm heart, trees of solid character. But you say that they are stiff and formal; and you hate the sight of them, and never pay them a visit. Only to the cherry-tree, and the kaido [15], and the peony, and the yellow rose you go: those you like because they have showy flowers, and you try only to please them. Such conduct, let me assure you, is very unbecoming. Those trees certainly have handsome flowers; but hunger-satisfying fruits they have not; and they are grateful to those only who are fond of luxury and show. And that is just the reason why they are pleased by your fluttering wings and delicate shape;-- that is why they are kind to you.

"Now, in this spring season, while you sportively dance through the gardens of the wealthy, or hover among the beautiful alleys of cherry-trees in blossom, you say to yourself: 'Nobody in the world has such pleasure as I, or such excellent friends. And, in spite of all that people may say, I most love the peony,-- and the golden yellow rose is my own darling, and I will obey her every least behest; for that is my pride and my delight.'... So you say. But the opulent and elegant season of flowers is very short: soon they will fade and fall. Then, in the time of summer heat, there will be green leaves only; and presently the winds of autumn will blow, when even the leaves themselves will shower down like rain, parari-parari. And your fate will then be as the fate of the unlucky in the proverb, Tanomi ki no shita ni ame furu [Even through the tree upon which I relied for shelter the rain leaks down]. For you will seek out your old friend, the root-cutting insect, the grub, and beg him to let you return into your old-time hole;-- but now having wings, you will not be able to enter the hole because of them, and you will not be able to shelter your body anywhere between heaven and earth, and all the moor-grass will then have withered, and you will not have even one drop of dew with which to moisten your tongue,-- and there will be nothing left for you to do but to lie down and die. all because of your light and frivolous heart -- but, ah! how lamentable an end!"...

### III

Most of the Japanese stories about butterflies appear, as I have said, to be of Chinese origin. But I have one which is probably indigenous; and it seems to me worth telling for the benefit of persons who believe there is no "romantic love" in the Far East.

Behind the cemetery of the temple of Sozanji, in the suburbs of the capital, there long stood a solitary cottage, occupied by an old man named Takahama. He was liked in the neighborhood, by reason of his amiable ways; but almost everybody supposed him to be

a little mad. Unless a man take the Buddhist vows, he is expected to marry, and to bring up a family. But Takahama did not belong to the religious life; and he could not be persuaded to marry. Neither had he ever been known to enter into a love-relation with any woman. For more than fifty years he had lived entirely alone.

One summer he fell sick, and knew that he had not long to live. He then sent for his sister-in-law, a widow, and for her only son,-- a lad of about twenty years old, to whom he was much attached. Both promptly came, and did whatever they could to soothe the old man's last hours.

One sultry afternoon, while the widow and her son were watching at his bedside, Takahama fell asleep. At the same moment a very large white butterfly entered the room, and perched upon the sick man's pillow. The nephew drove it away with a fan; but it returned immediately to the pillow, and was again driven away, only to come back a third time. Then the nephew chased it into the garden, and across the garden, through an open gate, into the cemetery of the neighboring temple. But it continued to flutter before him as if unwilling to be driven further, and acted so queerly that he began to wonder whether it was really a butterfly, or a ma [16]. He again chased it, and followed it far into the cemetery, until he saw it fly against a tomb,-- a woman's tomb. There it unaccountably disappeared; and he searched for it in vain. He then examined the monument. It bore the personal name "Akiko," (3) together with an unfamiliar family name, and an inscription stating that Akiko had died at the age of eighteen. Apparently the tomb had been erected about fifty years previously: moss had begun to gather upon it. But it had been well cared for: there were fresh flowers before it; and the water-tank had recently been filled.

On returning to the sick room, the young man was shocked by the announcement that his uncle had ceased to breathe. Death had come to the sleeper painlessly; and the dead face smiled.

The young man told his mother of what he had seen in the cemetery.

"Ah!" exclaimed the widow, "then it must have been Akiko!"...

But who was Akiko, mother?" the nephew asked.

The widow answered:--

"When your good uncle was young he was betrothed to a charming girl called Akiko, the daughter of a neighbor. Akiko died of consumption, only a little before the day appointed for the wedding; and her promised husband sorrowed greatly. After Akiko had been buried, he made a vow never to marry; and he built this little house beside the cemetery, so that he might be always near her grave. All this happened more than fifty years ago. And every day of those fifty years -- winter and summer alike -- your uncle went to the cemetery, and prayed at the grave, and swept the tomb, and set offerings before it. But he did not like to have any mention made of the matter; and he never spoke of it... So, at last, Akiko came for him: the white butterfly was her soul."

## IV

I had almost forgotten to mention an ancient Japanese dance, called the Butterfly Dance (Kocho-Mai), which used to be performed in the Imperial Palace, by dancers costumed as butterflies. Whether it is danced occasionally nowadays I do not know. It is said to be very difficult to learn. Six dancers are required for the proper performance of it; and they must move in particular figures,-- obeying traditional rules for ever step, pose, or gesture,-- and circling about each other very slowly to the sound of hand-drums and great drums, small flutes and great flutes, and pandean pipes of a form unknown to Western Pan.

## MOSQUITOES

With a view to self-protection I have been reading Dr. Howard's book, "Mosquitoes." I am persecuted by mosquitoes. There are several species in my neighborhood; but only one of them is a serious torment,-- a tiny needly thing, all silver-speckled and silver-streaked. The puncture of it is sharp as an electric burn; and the mere hum of it has a lancinating quality of tone which foretells the quality of the pain about to come,-- much in the same way that a particular smell suggests a particular taste. I find that this mosquito much resembles the creature which Dr. Howard calls *Stegomyia fasciata*, or *Culex fasciatus*: and that its habits are the same as those of the *Stegomyia*. For example, it is diurnal rather than nocturnal and becomes most troublesome in the afternoon. And I have discovered that it comes from the Buddhist cemetery,-- a very old cemetery,-- in the rear of my garden.

Dr. Howard's book declares that, in order to rid a neighborhood of mosquitoes, it is only necessary to pour a little petroleum, or kerosene oil, into the stagnant water where they breed. Once a week the oil should be used, "at the rate of once ounce for every fifteen square feet of water-surface, and a proportionate quantity for any less surface." ...But please to consider the conditions in my neighborhood!

I have said that my tormentors come from the Buddhist cemetery. Before nearly every tomb in that old cemetery there is a water-receptacle, or cistern, called mizutame. In the majority of cases this mizutame is simply an oblong cavity chiseled in the broad pedestal supporting the monument; but before tombs of a costly kind, having no pedestal-tank, a larger separate tank is placed, cut out of a single block of stone, and decorated with a family crest, or with symbolic carvings. In front of a tomb of the humblest class, having no mizutame, water is placed in cups or other vessels,-- for the dead must have water. Flowers also must be offered to them; and before every tomb you will find a pair of

bamboo cups, or other flower-vessels; and these, of course, contain water. There is a well in the cemetery to supply water for the graves. Whenever the tombs are visited by relatives and friends of the dead, fresh water is poured into the tanks and cups. But as an old cemetery of this kind contains thousands of mizutame, and tens of thousands of flower-vessels the water in all of these cannot be renewed every day. It becomes stagnant and populous. The deeper tanks seldom get dry;-- the rainfall at Tokyo being heavy enough to keep them partly filled during nine months out of the twelve.

Well, it is in these tanks and flower-vessels that mine enemies are born: they rise by millions from the water of the dead;-- and, according to Buddhist doctrine, some of them may be reincarnations of those very dead, condemned by the error of former lives to the condition of Jiki-ketsu-gaki, or blood-drinking pretas... Anyhow the malevolence of the *Culex fasciatus* would justify the suspicion that some wicked human soul had been compressed into that wailing speck of a body...

Now, to return to the subject of kerosene-oil, you can exterminate the mosquitoes of any locality by covering with a film of kerosene all stagnant water surfaces therein. The larvae die on rising to breathe; and the adult females perish when they approach the water to launch their rafts of eggs. And I read, in Dr. Howard's book, that the actual cost of freeing from mosquitoes one American town of fifty thousand inhabitants, does not exceed three hundred dollars!...

I wonder what would be said if the city-government of Tokyo -- which is aggressively scientific and progressive -- were suddenly to command that all water-surfaces in the Buddhist cemeteries should be covered, at regular intervals, with a film of kerosene oil! How could the religion which prohibits the taking of any life -- even of invisible life -- yield to such a mandate? Would filial piety even dream of consenting to obey such an order? And then to think of the cost, in labor and time, of putting kerosene oil, every seven days, into the millions of mizutame, and the tens of millions of bamboo flower-cups, in the Tokyo graveyards!... Impossible! To free the city from mosquitoes it would be necessary to demolish the ancient graveyards;-- and that would signify the ruin of the Buddhist temples attached to them;-- and that would mean the disparition of so many charming gardens, with their lotus-ponds and Sanscrit-lettered monuments and humpy bridges and holy groves and weirdly-smiling Buddhas! So the extermination of the *Culex fasciatus* would involve the destruction of the poetry of the ancestral cult,-- surely too great a price to pay!...

Besides, I should like, when my time comes, to be laid away in some Buddhist graveyard of the ancient kind,-- so that my ghostly company should be ancient, caring nothing for the fashions and the changes and the disintegrations of Meiji (1). That old

cemetery behind my garden would be a suitable place. Everything there is beautiful with a beauty of exceeding and startling queerness; each tree and stone has been shaped by some old, old ideal which no longer exists in any living brain; even the shadows are not of this time and sun, but of a world forgotten, that never knew steam or electricity or magnetism or -- kerosene oil! Also in the boom of the big bell there is a quaintness of tone which wakens feelings, so strangely far-away from all the nineteenth-century part of me, that the faint blind stirrings of them make me afraid,-- deliciously afraid. Never do I hear that billowing peal but I become aware of a striving and a fluttering in the abyssal part of my ghost,-- a sensation as of memories struggling to reach the light beyond the obscurations of a million million deaths and births. I hope to remain within hearing of that bell... And, considering the possibility of being doomed to the state of a Jiki-ketsugaki, I want to have my chance of being reborn in some bamboo flower-cup, or mizutame, whence I might issue softly, singing my thin and pungent song, to bite some people that I know.

## ANTS

### I

This morning sky, after the night's tempest, is a pure and dazzling blue. The air -- the delicious air! -- is full of sweet resinous odors, shed from the countless pine-boughs broken and strewn by the gale. In the neighboring bamboo-grove I hear the flute-call of the bird that praises the Sutra of the Lotos; and the land is very still by reason of the south wind. Now the summer, long delayed, is truly with us: butterflies of queer Japanese colors are flickering about; semi (1) are wheezing; wasps are humming; gnats are dancing in the sun; and the ants are busy repairing their damaged habitations... I bethink me of a Japanese poem:--

Yuku e naki: Ari no sumai ya!    Go-getsu ame.

[Now the poor creature has nowhere to go!... Alas for the dwellings of the ants in this rain of the fifth month!]

But those big black ants in my garden do not seem to need any sympathy. They have weathered the storm in some unimaginable way, while great trees were being uprooted, and houses blown to fragments, and roads washed out of existence. Yet, before the typhoon, they took no other visible precaution than to block up the gates of their subterranean town. And the spectacle of their triumphant toil to-day impels me to attempt an essay on Ants.

I should have like to preface my disquisitions with something from the old Japanese literature,-- something emotional or metaphysical. But all that my Japanese friends were able to find for me on the subject,-- excepting some verses of little worth,-- was Chinese. This Chinese material consisted chiefly of strange stories; and one of them seems to me worth quoting,-- *faute de mieux*.

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In the province of Taishu, in China, there was a pious man who, every day, during many years, fervently worshiped a certain goddess. One morning, while he was engaged in his devotions, a beautiful woman, wearing a yellow robe, came into his chamber and stood before him. He, greatly surprised, asked her what she wanted, and why she had entered unannounced. She answered: "I am not a woman: I am the goddess whom you have so long and so faithfully worshiped; and I have now come to prove to you that your devotion has not been in vain... Are you acquainted with the language of Ants?" The worshiper replied: "I am only a low-born and ignorant person,-- not a scholar; and even of the language of superior men I know nothing." At these words the goddess smiled, and drew from her bosom a little box, shaped like an incense box. She opened the box, dipped a finger into it, and took therefrom some kind of ointment with which she anointed the ears of the man. "Now," she said to him, "try to find some Ants, and when you find any, stoop down, and listen carefully to their talk. You will be able to understand it; and you will hear of something to your advantage... Only remember that you must not frighten or vex the Ants." Then the goddess vanished away.

The man immediately went out to look for some Ants. He had scarcely crossed the threshold of his door when he perceived two Ants upon a stone supporting one of the house-pillars. He stooped over them, and listened; and he was astonished to find that he could hear them talking, and could understand what they said. "Let us try to find a warmer place," proposed one of the Ants. "Why a warmer place?" asked the other;-- "what is the matter with this place?" "It is too damp and cold below," said the first Ant; "there is a big treasure buried here; and the sunshine cannot warm the ground about it." Then the two Ants went away together, and the listener ran for a spade.

By digging in the neighborhood of the pillar, he soon found a number of large jars full of gold coin. The discovery of this treasure made him a very rich man.

Afterwards he often tried to listen to the conversation of Ants. But he was never again able to hear them speak. The ointment of the goddess had opened his ears to their mysterious language for only a single day.

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Now I, like that Chinese devotee, must confess myself a very ignorant person, and naturally unable to hear the conversation of Ants. But the Fairy of Science sometimes touches my ears and eyes with her wand; and then, for a little time, I am able to hear things inaudible, and to perceive things imperceptible.

## II

For the same reason that it is considered wicked, in sundry circles, to speak of a non-Christian people having produced a civilization ethically superior to our own, certain persons will not be pleased by what I am going to say about ants. But there are men, incomparably wiser than I can ever hope to be, who think about insects and civilizations independently of the blessings of Christianity; and I find encouragement in the new Cambridge Natural History, which contains the following remarks by Professor David Sharp, concerning ants:--

"Observation has revealed the most remarkable phenomena in the lives of these insects. Indeed we can scarcely avoid the conclusion that they have acquired, in many respects, the art of living together in societies more perfectly than our own species has; and that they have anticipated us in the acquisition of some of the industries and arts that greatly facilitate social life."

I suppose that a few well-informed persons will dispute this plain statement by a trained specialist. The contemporary man of science is not apt to become sentimental about ants or bees; but he will not hesitate to acknowledge that, in regard to social evolution, these insects appear to have advanced "beyond man." Mr. Herbert Spencer, whom nobody will charge with romantic tendencies, goes considerably further than Professor Sharp; showing us that ants are, in a very real sense, ethically as well as economically in advance of humanity,-- their lives being entirely devoted to altruistic ends. Indeed, Professor Sharp somewhat needlessly qualifies his praise of the ant with this cautious observation:--

"The competence of the ant is not like that of man. It is devoted to the welfare of the species rather than to that of the individual, which is, as it were, sacrificed or specialized for the benefit of the community."

-- The obvious implication,-- that any social state, in which the improvement of the

individual is sacrificed to the common welfare, leaves much to be desired,-- is probably correct, from the actual human standpoint. For man is yet imperfectly evolved; and human society has much to gain from his further individualization. But in regard to social insects the implied criticism is open to question. "The improvement of the individual," says Herbert Spencer, "consists in the better fitting of him for social cooperation; and this, being conducive to social prosperity, is conducive to the maintenance of the race." In other words, the value of the individual can be only in relation to the society; and this granted, whether the sacrifice of the individual for the sake of that society be good or evil must depend upon what the society might gain or lose through a further individualization of its members... But as we shall presently see, the conditions of ant-society that most deserve our attention are the ethical conditions; and these are beyond human criticism, since they realize that ideal of moral evolution described by Mr. Spencer as "a state in which egoism and altruism are so conciliated that the one merges into the other." That is to say, a state in which the only possible pleasure is the pleasure of unselfish action. Or, again to quote Mr. Spencer, the activities of the insect-society are "activities which postpone individual well-being so completely to the well-being of the community that individual life appears to be attended to only just so far as is necessary to make possible due attention to social life,... the individual taking only just such food and just such rest as are needful to maintain its vigor."

### III

I hope my reader is aware that ants practise horticulture and agriculture; that they are skillful in the cultivation of mushrooms; that they have domesticated (according to present knowledge) five hundred and eighty-four different kinds of animals; that they make tunnels through solid rock; that they know how to provide against atmospheric changes which might endanger the health of their children; and that, for insects, their longevity is exceptional,-- members of the more highly evolved species living for a considerable number of years.

But it is not especially of these matters that I wish to speak. What I want to talk about is the awful propriety, the terrible morality, of the ant [1]. Our most appalling ideals of conduct fall short of the ethics of the ant,-- as progress is reckoned in time,-- by nothing less than millions of years!... When I say "the ant," I mean the highest type of ant,-- not, of course, the entire ant-family. About two thousand species of ants are already known; and these exhibit, in their social organizations, widely varying degrees of evolution. Certain social phenomena of the greatest biological importance, and of no less importance in their strange relation to the subject of ethics, can be studied to advantage only in the existence of the most highly evolved societies of ants.

After all that has been written of late years about the probable value of relative experience in the long life of the ant, I suppose that few persons would venture to deny

individual character to the ant. The intelligence of the little creature in meeting and overcoming difficulties of a totally new kind, and in adapting itself to conditions entirely foreign to its experience, proves a considerable power of independent thinking. But this at least is certain: that the ant has no individuality capable of being exercised in a purely selfish direction;-- I am using the word "selfish" in its ordinary acceptation. A greedy ant, a sensual ant, an ant capable of any one of the seven deadly sins, or even of a small venial sin, is unimaginable. Equally unimaginable, of course, a romantic ant, an ideological ant, a poetical ant, or an ant inclined to metaphysical speculations. No human mind could attain to the absolute matter-of-fact quality of the ant-mind;-- no human being, as now constituted, could cultivate a mental habit so impeccably practical as that of the ant. But this superlatively practical mind is incapable of moral error. It would be difficult, perhaps, to prove that the ant has no religious ideas. But it is certain that such ideas could not be of any use to it. The being incapable of moral weakness is beyond the need of "spiritual guidance."

Only in a vague way can we conceive the character of ant-society, and the nature of ant-morality; and to do even this we must try to imagine some yet impossible state of human society and human morals. Let us, then, imagine a world full of people incessantly and furiously working,-- all of whom seem to be women. No one of these women could be persuaded or deluded into taking a single atom of food more than is needful to maintain her strength; and no one of them ever sleeps a second longer than is necessary to keep her nervous system in good working-order. And all of them are so peculiarly constituted that the least unnecessary indulgence would result in some derangement of function.

The work daily performed by these female laborers comprises road-making, bridge-building, timber-cutting, architectural construction of numberless kinds, horticulture and agriculture, the feeding and sheltering of a hundred varieties of domestic animals, the manufacture of sundry chemical products, the storage and conservation of countless food-stuffs, and the care of the children of the race. All this labor is done for the commonwealth -- no citizen of which is capable even of thinking about "property," except as a *res publica*;-- and the sole object of the commonwealth is the nurture and training of its young,-- nearly all of whom are girls. The period of infancy is long: the children remain for a great while, not only helpless, but shapeless, and withal so delicate that they must be very carefully guarded against the least change of temperature. Fortunately their nurses understand the laws of health: each thoroughly knows all that she ought to know in regard to ventilation, disinfection, drainage, moisture, and the danger of germs,-- germs being as visible, perhaps, to her myopic sight as they become to our own eyes under the microscope. Indeed, all matters of hygiene are so well comprehended that no nurse ever makes a mistake about the sanitary conditions of her neighborhood.

In spite of this perpetual labor no worker remains unkempt: each is scrupulously neat, making her toilet many times a day. But as every worker is born with the most beautiful of combs and brushes attached to her wrists, no time is wasted in the toilet-room. Besides

keeping themselves strictly clean, the workers must also keep their houses and gardens in faultless order, for the sake of the children. Nothing less than an earthquake, an eruption, an inundation, or a desperate war, is allowed to interrupt the daily routine of dusting, sweeping, scrubbing, and disinfecting.

#### IV

Now for stranger facts:--

This world of incessant toil is a more than Vestal world. It is true that males can sometimes be perceived in it; but they appear only at particular seasons, and they have nothing whatever to do with the workers or with the work. None of them would presume to address a worker,-- except, perhaps, under extraordinary circumstances of common peril. And no worker would think of talking to a male;-- for males, in this queer world, are inferior beings, equally incapable of fighting or working, and tolerated only as necessary evils. One special class of females,-- the Mothers-Elect of the race,-- do condescend to consort with males, during a very brief period, at particular seasons. But the Mothers-Elect do not work; and they most accept husbands. A worker could not even dream of keeping company with a male,-- not merely because such association would signify the most frivolous waste of time, nor yet because the worker necessarily regards all males with unspeakable contempt; but because the worker is incapable of wedlock. Some workers, indeed, are capable of parthenogenesis, and give birth to children who never had fathers. As a general rule, however, the worker is truly feminine by her moral instincts only: she has all the tenderness, the patience, and the foresight that we call "maternal;" but her sex has disappeared, like the sex of the Dragon-Maiden in the Buddhist legend.

For defense against creatures of prey, or enemies of the state, the workers are provided with weapons; and they are furthermore protected by a large military force. The warriors are so much bigger than the workers (in some communities, at least) that it is difficult, at first sight, to believe them of the same race. Soldiers one hundred times larger than the workers whom they guard are not uncommon. But all these soldiers are Amazons,-- or, more correctly speaking, semi-females. They can work sturdily; but being built for fighting and for heavy pulling chiefly, their usefulness is restricted to those directions in which force, rather than skill, is required.

[Why females, rather than males, should have been evolutionally specialized into soldiery and laborers may not be nearly so simple a question as it appears. I am very sure of not being able to answer it. But natural economy may have decided the matter. In many forms of life, the female greatly exceeds the male in bulk and in energy;-- perhaps, in this case, the larger reserve of life-force possessed originally by the complete female could be more rapidly and effectively utilized for the development of a special fighting-

caste. All energies which, in the fertile female, would be expended in the giving of life seem here to have been diverted to the evolution of aggressive power, or working-capacity.]

Of the true females,-- the Mothers-Elect,-- there are very few indeed; and these are treated like queens. So constantly and so reverentially are they waited upon that they can seldom have any wishes to express. They are relieved from every care of existence,-- except the duty of bearing offspring. Night and day they are cared for in every possible manner. They alone are superabundantly and richly fed:-- for the sake of the offspring they must eat and drink and repose right royally; and their physiological specialization allows of such indulgence ad libitum. They seldom go out, and never unless attended by a powerful escort; as they cannot be permitted to incur unnecessary fatigue or danger. Probably they have no great desire to go out. Around them revolves the whole activity of the race: all its intelligence and toil and thrift are directed solely toward the well-being of these Mothers and of their children.

But last and least of the race rank the husbands of these Mothers,-- the necessary Evils,-- the males. They appear only at a particular season, as I have already observed; and their lives are very short. Some cannot even boast of noble descent, though destined to royal wedlock; for they are not royal offspring, but virgin-born,-- parthenogenetic children,-- and, for that reason especially, inferior beings, the chance results of some mysterious atavism. But of any sort of males the commonwealth tolerates but few,-- barely enough to serve as husbands for the Mothers-Elect, and these few perish almost as soon as their duty has been done. The meaning of Nature's law, in this extraordinary world, is identical with Ruskin's teaching that life without effort is crime; and since the males are useless as workers or fighters, their existence is of only momentary importance. They are not, indeed, sacrificed,-- like the Aztec victim chosen for the festival of Tezcatlipoca, and allowed a honeymoon of twenty days before his heart was torn out. But they are scarcely less unfortunate in their high fortune. Imagine youths brought up in the knowledge that they are destined to become royal bridegrooms for a single night,-- that after their bridal they will have no moral right to live,-- that marriage, for each and all of them, will signify certain death,-- and that they cannot even hope to be lamented by their young widows, who will survive them for a time of many generations...!

## V

But all the foregoing is no more than a proem to the real "Romance of the Insect-World."

-- By far the most startling discovery in relation to this astonishing civilization is that of the suppression of sex. In certain advanced forms of ant-life sex totally disappears in the majority of individuals;-- in nearly all the higher ant-societies sex-life appears to exist

only to the extent absolutely needed for the continuance of the species. But the biological fact in itself is much less startling than the ethical suggestion which it offers;-- for this practical suppression, or regulation, of sex-faculty appears to be voluntary! Voluntary, at least, so far as the species is concerned. It is now believed that they wonderful creatures have learned how to develop, or to arrest the development, of sex in their young,-- by some particular mode of nutrition. They have succeeded in placing under perfect control what is commonly supposed to be the most powerful and unmanageable of instincts. And this rigid restraint of sex-life to within the limits necessary to provide against extinction is but one (though the most amazing) of many vital economies effected by the race. Every capacity for egoistic pleasure -- in the common meaning of the word "egoistic" -- has been equally repressed through physiological modification. No indulgence of any natural appetite is possible except to that degree in which such indulgence can directly or indirectly benefit the species;-- even the indispensable requirements of food and sleep being satisfied only to the exact extent necessary for the maintenance of healthy activity. The individual can exist, act, think, only for the communal good; and the commune triumphantly refuses, in so far as cosmic law permits, to let itself be ruled either by Love or Hunger.

Most of us have been brought up in the belief that without some kind of religious creed -- some hope of future reward or fear of future punishment -- no civilization could exist. We have been taught to think that in the absence of laws based upon moral ideas, and in the absence of an effective police to enforce such laws, nearly everybody would seek only his or her personal advantage, to the disadvantage of everybody else. The strong would then destroy the weak; pity and sympathy would disappear; and the whole social fabric would fall to pieces... These teachings confess the existing imperfection of human nature; and they contain obvious truth. But those who first proclaimed that truth, thousands and thousands of years ago, never imagined a form of social existence in which selfishness would be naturally impossible. It remained for irreligious Nature to furnish us with proof positive that there can exist a society in which the pleasure of active beneficence makes needless the idea of duty,-- a society in which instinctive morality can dispense with ethical codes of every sort,-- a society of which every member is born so absolutely unselfish, and so energetically good, that moral training could signify, even for its youngest, neither more nor less than waste of precious time.

To the Evolutionist such facts necessarily suggest that the value of our moral idealism is but temporary; and that something better than virtue, better than kindness, better than self-denial,-- in the present human meaning of those terms,-- might, under certain conditions, eventually replace them. He finds himself obliged to face the question whether a world without moral notions might not be morally better than a world in which conduct is regulated by such notions. He must even ask himself whether the existence of religious commandments, moral laws, and ethical standards among ourselves does not prove us still in a very primitive stage of social evolution. And these questions naturally

lead up to another: Will humanity ever be able, on this planet, to reach an ethical condition beyond all its ideals,-- a condition in which everything that we now call evil will have been atrophied out of existence, and everything that we call virtue have been transmuted into instinct;-- a state of altruism in which ethical concepts and codes will have become as useless as they would be, even now, in the societies of the higher ants.

The giants of modern thought have given some attention to this question; and the greatest among them has answered it -- partly in the affirmative. Herbert Spencer has expressed his belief that humanity will arrive at some state of civilization ethically comparable with that of the ant:--

"If we have, in lower orders of creatures, cases in which the nature is constitutionally so modified that altruistic activities have become one with egoistic activities, there is an irresistible implication that a parallel identification will, under parallel conditions, take place among human beings. Social insects furnish us with instances completely to the point,-- and instances showing us, indeed, to what a marvelous degree the life of the individual may be absorbed in subserving the lives of other individuals... Neither the ant nor the bee can be supposed to have a sense of duty, in the acceptation we give to that word; nor can it be supposed that it is continually undergoing self-sacrifice, in the ordinary acceptation of that word... [The facts] show us that it is within the possibilities of organization to produce a nature which shall be just as energetic in the pursuit of altruistic ends, as is in other cases shown in the pursuit of egoistic ends;-- and they show that, in such cases, these altruistic ends are pursued in pursuing ends which, on their other face, are egoistic. For the satisfaction of the needs of the organization, these actions, conducive to the welfare of others, must be carried on...

. . . . .

"So far from its being true that there must go on, throughout all the future, a condition in which self-regard is to be continually subjected by the regard for others, it will, contrari-wise, be the case that a regard for others will eventually become so large a source of pleasure as to overgrow the pleasure which is derivable from direct egoistic gratification... Eventually, then, there will come also a state in which egoism and altruism are so conciliated that the one merges in the other."

VI

Of course the foregoing prediction does not imply that human nature will ever

undergo such physiological change as would be represented by structural specializations comparable to those by which the various castes of insect societies are differentiated. We are not bidden to imagine a future state of humanity in which the active majority would consist of semi-female workers and Amazons toiling for an inactive minority of selected Mothers. Even in his chapter, "Human Population in the Future," Mr. Spencer has attempted no detailed statement of the physical modifications inevitable to the production of higher moral types,-- though his general statement in regard to a perfected nervous system, and a great diminution of human fertility, suggests that such moral evolution would signify a very considerable amount of physical change. If it be legitimate to believe in a future humanity to which the pleasure of mutual beneficence will represent the whole joy of life, would it not also be legitimate to imagine other transformations, physical and moral, which the facts of insect-biology have proved to be within the range of evolutionary possibility?... I do not know. I most worshipfully reverence Herbert Spencer as the greatest philosopher who has yet appeared in this world; and I should be very sorry to write down anything contrary to his teaching, in such wise that the reader could imagine it to have been inspired by Synthetic Philosophy. For the ensuing reflections, I alone am responsible; and if I err, let the sin be upon my own head.

I suppose that the moral transformations predicted by Mr. Spencer, could be effected only with the aid of physiological change, and at a terrible cost. Those ethical conditions manifested by insect-societies can have been reached only through effort desperately sustained for millions of years against the most atrocious necessities. Necessities equally merciless may have to be met and mastered eventually by the human race. Mr. Spencer has shown that the time of the greatest possible human suffering is yet to come, and that it will be concomitant with the period of the greatest possible pressure of population. Among other results of that long stress, I understand that there will be a vast increase in human intelligence and sympathy; and that this increase of intelligence will be effected at the cost of human fertility. But this decline in reproductive power will not, we are told, be sufficient to assure the very highest of social conditions: it will only relieve that pressure of population which has been the main cause of human suffering. The state of perfect social equilibrium will be approached, but never quite reached, by mankind --

Unless there be discovered some means of solving economic problems, just as social insects have solved them, by the suppression of sex-life.

Supposing that such a discovery were made, and that the human race should decide to arrest the development of sex in the majority of its young,-- so as to effect a transference of those forces, now demanded by sex-life to the development of higher activities,-- might not the result be an eventual state of polymorphism, like that of ants? And, in such event, might not the Coming Race be indeed represented in its higher types,-- through

feminine rather than masculine evolution,-- by a majority of beings of neither sex?

Considering how many persons, even now, through merely unselfish (not to speak of religious) motives, sentence themselves to celibacy, it should not appear improbably that a more highly evolved humanity would cheerfully sacrifice a large proportion of its sex-life for the common weal, particularly in view of certain advantages to be gained. Not the least of such advantages -- always supposing that mankind were able to control sex-life after the natural manner of the ants -- would be a prodigious increase of longevity. The higher types of a humanity superior to sex might be able to realize the dream of life for a thousand years.

Already we find lives too short for the work we have to do; and with the constantly accelerating progress of discovery, and the never-ceasing expansion of knowledge, we shall certainly find more and more reason to regret, as time goes on, the brevity of existence. That Science will ever discover the Elixir of the Alchemists' hope is extremely unlikely. The Cosmic Powers will not allow us to cheat them. For every advantage which they yield us the full price must be paid: nothing for nothing is the everlasting law. Perhaps the price of long life will prove to be the price that the ants have paid for it. Perhaps, upon some elder planet, that price has already been paid, and the power to produce offspring restricted to a caste morphologically differentiated, in unimaginable ways, from the rest of the species...

## VII

But while the facts of insect-biology suggest so much in regard to the future course of human evolution, do they not also suggest something of largest significance concerning the relation of ethics to cosmic law? Apparently, the highest evolution will not be permitted to creatures capable of what human moral experience has in all areas condemned. Apparently, the highest possible strength is the strength of unselfishness; and power supreme never will be accorded to cruelty or to lust. There may be no gods; but the forces that shape and dissolve all forms of being would seem to be much more exacting than gods. To prove a "dramatic tendency" in the ways of the stars is not possible; but the cosmic process seems nevertheless to affirm the worth of every human system of ethics fundamentally opposed to human egoism.