1. On Butterflies collected by Mr. W. Doherty in the Naga and Karen Hills and in Perak.—Part I.

By H. J. Elwes.

[Received April 1, 1891.]

(Plate XXVII.)

In the following notes I have given a list of the rarer and more interesting Butterflies collected in the years 1889 and 1890 by Mr. Doherty; but I have not thought it necessary to mention the commoner ones which have already been recorded from the neighbouring regions, as it is obvious that no list can be anything like complete unless based on collections made during a much longer time than Mr. Doherty has been able to devote to one locality.

The principal places he visited were as follows:—During March and April 1889 he was at Margharita, which is near the coal-mines S.E. of Sadya in Upper Assam, and this locality, owing to the very cold, rainy, and unfavourable weather, was very unproductive. Some of the more interesting species occurring here have been already described by him in the 'Journal of the Asiatic Society of Bengal,' 1889, p. 125. It appears that there is here among the insects, as amongst the birds, a general prevalence of the common Indo-Malay species which are found all along the sub-Himalayan forest and throughout the low country of Assam and N.E. Bengal, with a slight admixture of forms peculiar to Upper Assam, and having more relationship to species found in China and East Tibet than to Indian species.

Writing from Margharita, Upper Assam, on May 6th, 1889, Mr. Doherty says:—"I had to go to Darjiling for my Lepchas and got two fairly good men; I have also two other men, one of whom is quite as good as the Lepchas, and hope by high wages and continual presents to keep them permanently in my service. I have had no success as yet. I reached here April 23rd. As this is probably the best collecting-ground in the Assam valley, and as both my expeditions have failed, and I will never make a third, I will give you some notion of the seasons, so that you may secure better success to anyone who comes later. Last year the rains continued down to the cold weather, November 1st, after which Butterflies disappeared entirely, though Moths flew till December 1st. During October very few species were flying, though some were fairly abundant, including four species of red *Charaxes*, and even *Rhinopalpa fulva*. There were scarcely any Lycænidæ or Hesperidæ. The forest-paths were all flooded and impassable till the cold weather had well begun. So the autumn is quite hopeless for collecting. This spring I learn to my surprise that a host of Butterflies came out about March 15th, in spite of the cold and violent winds, disappearing during the first week of April. The Chota barsat (little-rains) began in the last days of March. April was exceedingly wet and cold. We were wearing heavy ulsters and double flannels in the steamer from

Tezpur upwards. The rain still continues, the country is flooded, and the nights are so cold that few Moths are flying. Everyone says that in June the second brood of Butterflies comes out in full force in spite of the rains, but then hill expeditions (and Margharita is quite among the hills) are out of the question. I cannot stay here till then, as the road to Kohima, in the Naga Hills, will be closed, except for coolies, by June 1st, and I have better hopes of success there. Nevertheless I am getting a few new and good things, such as *Apatura ulupi*, *Pithecops fulgens*, *Calliana pieridoides*, and *Limenitis austenia* ♀, *Papilio elephenor* and *P. telearchus*."

The rainy season of 1889 was spent by Mr. Doherty in the Naga Hills, which had previously been almost unexplored by entomologists, though a considerable number of Butterflies were collected on their lower slopes by Messrs. Peal and Sherwill and a small collection was made by Dr. Watt on his march from Manipur through the Naga Hills to Assam in 1883 or 1884, and described by Mr. Butler in the 'Annals & Mag. of Nat. Hist.' for 1885.

After leaving Margharita, where the rain continued till the end of May, Mr. Doherty went up to the Naga Hills, marching *viâ* Dinapur. He writes of the route from Nichugard, Naga Hills, on June 10th, as follows:—

"The Dhansiri valley is a perfectly flat jungly country 300–500 feet above the sea and wholly uninhabited. We moved on very slowly. I hired coolies to push the carts through the mud, and they as well as my men and myself were at work all day long on them; but all the same we made less than a mile an hour, the distance being 83 miles. It is still 36 to Kohima." Mr. C. B. Clarke has described this road, which is the only approach to the Naga Hills from Assam at present, as being in the rainy season a sea of mud, lined with the carcasses of cart-bullocks which have succumbed on the journey, and almost impassable.

"Whenever the rain stopped we caught Butterflies and Cicindelidæ. There are no jungle species, the road being bordered by 40 feet of high grass. Still there are a few good Butterflies, *Papilio elephenor* and *P. sakontala* [The last I did not receive.—H. J. E.], and *Libythea rohini* (*L. narina*, Godt.), but only a few very common Lycænidæ, Pieridæ, and Hesperidæ. I am now at Nichugard, at the mouth of the gorge of the Dhansiri river, and am glad to have a quiet day after so much rough work. It is a great disappointment to find that there are now no Moths here. As to Butterflies, I have not yet found out whether there are any; but if there are collecting will be delightful, as the country is divine, the jungle-paths excellent, and we have several hours of sunshine every day, though it rains every morning till ten. It will give you some idea of the cost of travelling here when I say that I am obliged to pay 4 rupees a maund (say 8 per cwt.) for getting my luggage carried from here to Kohima, 36 miles. Yet at Kohima I am only at the beginning of my expedition, and I have 16 maunds of luggage besides provisions."

The physical features and peculiarities of the Naga Hills have

been so well described from a botanical point of view by Mr. C. B. Clarke, F.R.S., in the 'Journal of the Linnean Society, Botany,' vol. xxii. 1886, p. 128, that I need not say much about them here; but I extract from Mr. Doherty's letters some details of interest. He says, writing from Mao, Manipur, on September 9th, 1889 :—

"I have not marked the altitudes exactly, as we ascend 2000 feet nearly every day, and I know the exact elevation only of those I catch myself. *Euplœa midamus* ranges up to 6500 feet and is the only *Euplœa* found above 4000 feet. *Limenitis austenia* is confined to the low country. *L. dudu* is rather common, much more so than *zuleima*; these species approximate to *Parthenos* (*austenia* is almost a *Parthenos* in structure) and are easy to catch. The numerous Celebesian species belong to that part of the genus nearest *Athyma*, *Moduza*, and *Pandita*, and are hard to catch: one characteristic of what I call the Nymphalidæ (*i. e.* the *Neptis-Euthalia-Limenitis* group) is the entire absence of true genera; the structure is plastic, and one type melts insensibly into another. Besides *Euthalia nara* I send a female near it, but perhaps different (*E. anyte* ♀), and also what seems a new species, a local form of *E. anyte*, apparently quite distinct. *Libythea rohini* occurs only below 3000 feet. Nearly all the Darjiling Erycinidæ have turned up here, as well as several specimens of my hitherto unique *Everes kala*, which is distinct from the Tenasserim species, *E. umbriel*, Doh. I also send *Everes nyseus* and *parrhasius*. Here the latter has the tails rudimentary or absent. Among *Ilerdæ* I send *I. epicles*, which occurs from the plains to 6000 feet, *androcles* from 6000–9000 feet, *brahma* 4500–5500 feet, *tamu* 4500–8500 feet. *I. androcles* is variable, the green hind wing almost disappears in some, and when flying they have the air of obscure black Butterflies. I send a large set of *Dercas wallichii*, which is curiously like *Gonepteryx zaneeka* of the North-west. It flew in June and disappeared in July. *Leptocircus* is very common in Assam, ranging up to 6000 feet [I found it in the Khasias only at low elevations in very hot dense forests.—H. J. E.]. I took it on the Dibong north of Sadiya, probably the northern limit of the genus.

"Of *Teinopalpus* I send a broken male; your account of its habits agrees exactly with what I have seen of it up here. I send a battered specimen of *Papilio krishna*, so all the four species of green *Papilios* (*krishna*, *paris*, *ganeesa*, and *arcturus*) are found here, but are provokingly rare. *P. evan* occurs at Margharita, but I have seen none here, though *P. gyas* is not uncommon. I send a fine female of *P. rhetenor*, also a single female of *Aulocera loha*, from an elevation of 5500 feet in Northern Manipur.

"The *Armandias* sent seem to be slightly different from the Bhutan form. [The only difference I see is that they average smaller.—H. J. E.] It first turned up about August 10th, in the beautiful uninhabited Zulla valley, the border country between the Angami tribe and the Kachla Nagas, 10 to 15 miles from Kenoma, in the direction of Khonoma. It generally kept to the ridges, occasionally descending into the valley, once almost down to 5000

feet. Afterwards I found it on the western side of Japoo, at 7000–8000 feet, and between these two places we got one or two every day. At Mao, in Manipur, I have taken worn specimens at 7500–9000 feet. My Lepchas, who collected at Buxa, in Bhutan, say there is no chance of another brood. Strange to say, I have never seen a female. The Butterfly drifts about among the tree-tops, rarely descending to the ground; the crimson of the hind wings is not so conspicuous as one might think, and if one loses sight of it for an instant it is very hard to make out again, its transparent dark grey wings being hardly distinguishable among the shadows, and it is blown about by the wind, more like a dead leaf than a living insect. Its flight is much like that of *Hestia*, but less buoyant and circling, as might be expected from its angular wings; nevertheless its resemblance strikes one. Seen from above it must be much more conspicuous, and is no doubt a protected insect; at the same time its weak flight may even add to its chance of escape, as it certainly does with *Hestia*, for it is impossible to calculate the direction in which it is making. The whole body and wings give out a delicious odour, which remains for some days after death. In some positions and at some distance *Armandia* looks like *Danais tytia*, which is very common in the same places. *Armandia* hovers about flowers, like other *Papilios*. During rain it alights on a leaf, and droops its fore wings over the hind ones, thus covering the bright colours. Several were taken in this way; but I confess I only caught one myself, as I have not the patience to do as my men do, and watch one of these lovely things for hours and follow it over these steep jungly hills, on the very small chance of catching it finally. Falls, leeches, and torn clothes are the only things you can count on, but there is a fair chance of a fall into a tiger-pit. I came very near staying permanently on Kohoni, having fallen into one of these pits yesterday whilst chasing an *Armandia*. I can usually detect one of these pits by the broken twig that marks it, but this was an old one overgrown with weeds and away from any path. It was like a cistern, 12 feet deep, roofed over with logs, leaving but a small opening, so that if a deer or pig is caught and the tiger is hungry, he jumps in and cannot get out. I thought I was gone, for there was no chance of being found there, and it seemed quite impossible to get out. It took me 8 hours hard work to do it. I made steps up the side with my knife, and contrived to hang somehow at the top beneath the roof. After trying three sides I saw a small stout stick six feet from the opening, and after several hours succeeded in pulling it to me with my broken butterfly-net; then I put it across the opening and with great difficulty swung myself out, and I came home in the dark, very thankful to have escaped. The Nagas are not afraid of these pits, as they go nowhere alone; but they have another sort of trap of which I have a perfect horror, and so have they. It consists of great stones hung from trees, and set free by a vine across the path, crushing any animal which touches it. Each village has its own traps, and every child knows their positions. For fear of these

infernal machines, no Naga will venture into the forest land of another village. Nevertheless many deaths are caused by them. I myself saw one only just in time on Japoo, and my Lepchas on account of them, and their lack of enterprise, never wander far. So far every locality in which we have taken any good Butterflies on this expedition has been found by me. My men, even my Maslaman, who is a good jangal-wala, rarely go beyond where I have led them. This very likely explains the comparatively small results achieved by them at Buxa, which seems to be naturally a grand place for insects.

"It is my opinion that there will be no autumn brood of Butterflies in the high country of these hills. As for the lowlands there is some chance of one about October 1st, though none came out last autumn at Sadiya and Margharita. Wood-Mason found August and September best at low elevations in Cachar. Here there was nothing in August below 5000 feet, nothing at all. I think you have an exaggerated view of the 'succession of broods' through the rainy season, or Sikkim at least must be very exceptional in this respect. In Borneo, during my first week there in September, I got about 90 good Butterflies a day, in most monotonous virgin forest without paths. In January here, except two or three common *Junonias*, and a few truly continuous species like *Ypthimas* and *Ragadia crisia*, perhaps ten in all, I did not see more than three Butterflies a day on an average, compared with about 500 in my first week.

"Hitherto I have found here only the seven Sikkim species of *Cyaniris* (of which *puspa* was taken at low elevations only, the other six only at high ones) and an additional one *chennelli*, of which I send the undescribed female. I had hoped to get a much larger number, because in Java of eight species examined only three (namely, *puspa*, *placida*, and *dilectus*) were Indian."

Writing from Nichugard, on his return there on November 2nd, Mr. Doherty says:—

"I sent two men to the low country after the middle of September, but they scarcely caught anything.

"It rained furiously, and now I feel sure that there is never an autumn brood in these hills either in high or low country. Possibly on their southern face at Manipur it may be otherwise, as it is at Cherra-punji and apparently in North Cachar. My trip up Japoo towards the end of September did not result in much. I got a number of *Armandias*, several of them in good condition, so, strange as it seems, there must be an autumn brood after all. At the extreme summit, 9895 feet, I got *Everes kala* and a worn *Zephyrus*. At night I got a number of Geometridæ, mostly small, in my camp at 8000 feet. This shows the lateness of the season, as they are always the last [? first.—H. J. E.] Moths out. As the weather was warm and wet, I expected a great variety of Moths, especially as I had failed there in July, and as I had done so well at Margharita last year up to December 7th, though it was very cold and dry all through November.

"Throughout the rains my baits failed, and I prematurely con-

cluded that the Moths of temperate climates did not care for them. However, after a number of experiments I began to succeed, and am doing very well now, so I wish I had persevered longer on Japoo in July.

"One great drawback was the nervousness brought on by overmuch climbing. Every night I went out with baits I never slept a wink, and my men were afraid of tigers and Nagas, and scamped their work unless I was with them. I had previously thought that Bombyces never came to baits, except *Syntomis*, and a few Agaristidæ and Arctiidæ, any more than the Tineidæ do. Now I think that nearly all Moths (*Macros*) will occasionally come to good baits well placed, except perhaps Saturniidæ, which apparently never feed.

"Sweet baits I find best for Noctuas and nasty ones for Geometers and Pyrales. The greatest difficulty is that the best baits will only attract Moths from a short distance, not like lights, and consequently to obtain good species one must put them in virgin forest, so that the fatigue and worry is enormous.

"On the other hand, I have concluded that lights are a failure. Taken into the jungle my big lamps simply frighten away Moths, and even in a white tent they only attract a few little Noctuæ. I am inclined to think that Moths have to be gradually accustomed to lights. In a large station they get used to coming to lighted houses, especially those that are lighted every night. At Kohima the dak bungalow is far better situated for Moths than any other house, and my lamps were the best in the station, but I always had to go to other peoples' houses for Moths. In coffee-plantations the Moths would keep beating agaist the windows of the bungalow, though there might be only a candle or two inside, while my tent in the jungle close by, lit with a good lamp, attracted not a single insect."

These notes will be very interesting and useful to collectors, but the Moths collected in the Naga Hills are far too numerous to be described in this paper, although I hope to deal with them as soon as possible. After leaving the Naga Hills Mr. Doherty spent six weeks in Calcutta and Darjiling and then proceeded to Perak, where he stayed but a short time. As this locality is well known and I have mentioned the most interesting of his captures in their order, I need say nothing more. After leaving Perak he went to Rangoon and started on an expedition to the Karen Hills, where he remained for some weeks at Peti-chaung, and wrote to me as follows on April 16th:—

"I have been collecting since March 17th in the Karen Hills east of Toungoo. I see Mr. Grose Smith has described some Karen species sent him by Mr. Noble, who does not know exactly where they came from. I think it was from Kaserdo or Kacherdo, called by the Burmese Taung-gyi, 'the big hill'; an isolated hill 1500 feet high 10 miles east of Toungoo, and quite in the plain of Pegu. My collection is from several places 30 or 40 miles east of Toungoo. I would label everything simply 'East Pegu' with the elevation, as the

term Karen Hills is misleading. My high-country specimens are chiefly from Thandaung and the neighbouring hills, from 4000 to 5000 feet. The low-country ones chiefly from Peti-chaung 500 to 2000 feet. I have made only this division, as between 2000 and 4000 feet I got only a dozen or so species, chiefly Ypthimas. The high-country Butterflies were nearly all of the Khasia species; the low country contained some interesting Tenasserim and Malayan forms. We have had to work very hard to secure this small result. Until the last day or two it was the dry-season brood we caught, but most of the Papilios have been flying all the winter, and the *Stictophthalma louisa* only came out a week ago along with *Neope bhima* and a few others in the low country only. On the mountains I doubt if the wet-season brood comes out before the middle of May; we got everything there was out up there. At Thandaung there are four peaks. I lived on one, the others were four miles away forming a triangle a mile apart. Each of my men used to take a peak and stay there all day, and Pambu actually made a platform of boughs on the top of a tree and stood on it all day long like an orang-utan, but we did not any of us catch much. I do not think we averaged till quite lately above twelve specimens per day each, and many of these were useless.

"There is no virgin forest anywhere on the hills, though about here it is very fine. The Karens, though a civilized and intelligent people (all Baptists west of Thandaung, though the Red Karens are heathen still), still keep up their bad old habit of 'juming.' This is the system of cultivation practised by nearly all the hill men of Indo-Chinese race, and consists in cutting, burning, cultivating, and abandoning fresh tracts of forest every two or three years, so the whole country is a desert of scrub and bamboo. I spent two days going to Lepya gyi, and again up the hill north of Thandaung, about 5000 feet I think, but got nothing, though the Thandaung jungle, bad as it looks, is, I imagine, as good as any west of the Salwin river. Thandaung used to be a sanatorium, but was abandoned on account of fever and a certain terrible fly that infests it. Tigers are very abundant, and there is tigers' dung all along the road, on which all my *Euthalia taooana* were taken. I imagine that this country from Tenasserim to the Lushai Hills will be the great tiger preserve of the future, as except on the plains it is too barren ever to support many people. I must explain that I sent a great many bad specimens, as I thought there were enough to make an article about, and I think, altogether, of 300 species good and bad. In the Danaidæ I got nothing at all uncommon. *Esites angularis* occurred in the low country along with a rare new species, of which the hind wing is produced more at the middle than at the upper median vein. Of *Zethera diademoides* only males, which were numerous at 1000 to 2000 feet. I see Mr. Holland makes a new genus of it, *Euplœmima*; but why not call it *Anadebis*?

"I send a few of both sexes of a *Thaumantis* near *aliris* (*pseudaliris*, Butl.). Like the other two species, it mimics when flying a large protected Cicada (*Posena melanoptera*?). It swarms in Borneo,

where I have often mistaken the butterfly for the cicada, and *vice versâ*, though after death the cicada faded, so that the resemblance is hard to see. I also send *Zeuxidia masoni*; the fragrance of the male is peculiar but very sweet. I have been unlucky with *Cyrestis nivalis*, of which I have seen half a dozen. From its extreme timidity I think one can see that it is at the limit of its range, and just maintains itself. In the Apaturidæ I got very little of interest. The *Stibochiona* seems new. It was very rare and confined to the summit at from 4000 to 4500 feet. If you describe it please mention the hairy eyes of this genus; this is its most remarkable feature and not mentioned by Westwood.

"A fine pair of *Prothoë caledonia* are perhaps the best things I got, no others were seen, but *Prothoë angelica* was more common and was taken on the body of a dead Python. It is very fragrant in both sexes. There are several *Charaxes* of the *polyxena* group, the names of which I do not pretend to know; also *C. durnfordi*, of which I am very proud; it is very hard to catch, even more difficult than *Prothoë caledonia*. I have noticed enough facts to be confident that timidity is a source of protection. In the Eastern Ghats, where *Neptis nandina* is rare, I could always tell it from *N. varmona* a hundred yards off, because it flew away; but then *varmona* is like *hordonia*, a protected species. All the *Charaxes* in the Malayan region are hard to catch, as poor Kunstler used to insist; but there is nothing more helpless than most *Charaxes* in the Indo-Burmese region. They fly so straight that you can take them on the wing nine times out of ten; they persistently return to the same spot and love to light on projecting twigs, where you can easily get them by a stroke of the net from below. But that is not the case in the Malayan regions; I do not know how many hours I spent in the interior of Sumba trying to catch a huge undescribed *Charaxes* of the *pyrrhus* group; and the *polyxena* group never seem common down there as in India.

"I send many males of *Neurosigma doubledayi*. It seems to me distinct from the Sikkim form, of which I took dozens in the Chittagong hill-tracts, all black and fulvous above. All the Athymas sent are from the high country above 4000 feet. I do not know why."

Mr. Doherty then gives a lot of notes about various Lycænidæ, which will be inserted in their places, and shortly afterwards left for the Ruby-Mine district north of Mandalay, whence he wrote from the Injok valley near Bernardmyo, on May 25th, as follows:—

"I have been at Bernardmyo at 5400 feet, and here in a hut at Injok since May 2nd; we had rather an absurd journey. At Thabeit kyin on the Irawadi river the country was wholly parched up, not a green leaf for miles, and the grass on fire everywhere. From there the road goes to Mogouk nearly 70 miles. Transport had broken down, but I managed to borrow two carts, for two of my Lepchas were sick and could not walk, and hired two pair of bullocks at 35 rupees each. They broke down at a desolate place 12 miles out, where I had to stay two days. Then, luckily for me, General

Wolseley came along and got me bullocks, and we went on together for a stage. Then my drivers ran away, and my cook and I had to drive the carts ourselves, and as I have no gift at all for bullock-driving it took us eight days to reach Mogouk. There were no insects all the way but a few dry-country species such as *Antigonus*, and one or two *Neope bhima* at 2000 to 3000 feet. Mogouk is a lovely place, but no Butterflies, so I came to Bernardmyo and found it just as bad. No Lepidoptera or shells. The few Butterflies taken (*Zophoessa sura* and *yama* quite common) were all Naga-Hill species except a curious *Cellerebia* (?) with a sex-mark as in *Ypthima* (*Y. narasingha*), which is very scarce. No sign of any *Chrysophanus*. No *Ilerda* but *brahma*. Bernardmyo is a dreary place in the midst of a vast fern-pasture, stuck all over with charred stumps; for all this country was high forest twenty years ago, and there were no natural meadows, and no flowers, only grass and fern.

"The high peak here is 7500 feet, and there are two others nearly as high. The nearest bit of forest is four miles from Bernardmyo, and nearly all above 6000 feet, so that collecting is weary work. I thought that I had come just at the right time, for the grass-burning was over, the grass just springing, and the first showers had fallen. We had two weeks of bright weather, but since then it rains every day from 9 to 3, clears off at 5, and the nights are clear, cold, and windy, bad for Moths. For the last ten days I have been doing well in beetles, but there are no flower-haunting species like Cetonias. The Moths are just beginning to come out, but there are no Butterflies nor any hope of them.

"The forest is singularly fine, full of tree-ferns, better than anything in the Naga Hills, and the trees are nothing like so much buried in moss and orchids; so the climate must be much drier than that of Kohima, though the rainfall, 70 inches (at Mogouk 110), is nearly as large. To-morrow I leave for the low country in the Shan State of Momeit; I hope I may come back alive, for the authorities have solemnly warned me against going. All my men have been almost constantly sick, and Longchung has quite broken down, so I leave him here. I have not been very strong myself, so I hope the long voyage to Sumatra will set me up again. This is a desperately expensive country: fowls are 2 to 4 rupees each, and coolies get $1\frac{1}{2}$ rupees a day each. At Bernardmyo I luxuriate on commissariat bread and beef, and every one both civil and military has been very kind.

"You ask me about the *Himantopterus dohertyi* which you described in the Trans. Ent. Soc. The first specimen with the tails quite filiform (♀) I caught crawling out of an ant's nest in the ground. I dug the nest open, but did not find any more. The others were all I think taken flying in broad daylight along the road from Kohima to Kegwema at 5000 to 6000 feet, usually in the morning. They flew heavily and slowly; I noticed a slight offensive smell, much as in *Histia flabellicornis*. With regard to that superb *Campylotes* (*C. desgodinsi*, var. *splendida*, Elwes), I hardly ever saw such a conspicuous insect; it shone in the jungle like a little fire. I got it in the

Zulla valley along with *Armandia*; the other species (*C. histrionicus*, var. *altissima*, Elwes) came, I think, from lower ground. The mimicry in this species seems very perfect at a little distance, both in flight and colouring; so that it is only when you look closely that you see that all the colours are quite different from those of *Danais genutia*. The long-bodied Sphinx-like *Bombyx* you think a new genus (allied to *Tarsolepis fulgurifera*, Wk.) was taken in cracks and hollows of trees high above the ground, and was hard to distinguish from the bark. The creatures can hardly fly at all, and I brought down one with a stone."

I may add that the species just referred to came from the Naga Hills, not from Burmah.

On his return from Momeit, which I see is also written Momeik, and is now to be annexed to British Burmah, Mr. Doherty writes me from Mandalay on June 30th:—"Among the Momeit Butterflies are a number of *Libythea rohina* (*L. narina*), which occurs there along with *myrrha*. Also a few pairs of *Yoma vasuki*, Doherty. I think *Yoma* will stand as a genus in spite of Semper's rash identification of it with *Salamis*. Each of the islands from Java and Celebes eastwards seems to have its form of *Yoma*, all very dubiously distinct; though constant enough on the upperside, *vasuki* is no better species than two or three more. Among the Bernardmyo species is a broken specimen of *Papilio machaon* taken at 5500 feet. The soldiers there took several broken examples of *P. gyas* and *P. krishna*, also a bad specimen of *Lethe purana*, none of which I got. The weather at Bernardmyo was much colder than I expected, colder than Darjiling in the rains. During June the weather was lovely, and I do not understand why the woods were so devoid of all animal life. May was a good month for beetles and I did very well; but June was a failure all round, both on the high and low country. I was detained beyond my intentions, as Longchung was too ill to be moved, and then I could get no transport. At last I got away in the 'burst of the monsoon' and had a most uncomfortable 70 miles to the river. Thabeitkyin, where scarcely any rain falls, was like a paradise when we got there, and I was able to dry all my specimens, which I hope will reach you in good order. My men are all very low with fever and dysentery. The Ruby Mines are the most unhealthy district I ever heard of; I suffered far less than my men, and yet I lost 15 pounds weight."

The extracts which I have quoted above give a graphic picture of the life of a collector in the more unexplored and out-of-the-way hill-tracts of India; and though Mr. Doherty constantly speaks, as Wallace does in the Malay Archipelago, of his want of success, yet he has done more than I could have expected in the time, and his collection of Moths in particular, though not so numerous in Burmah as in the Naga Hills, includes many novelties, and will take me some time to work out. After leaving Burmah Mr. Doherty went to Sumatra, and is now on his way to the Eastern islands of the Malay Archipelago, whence I trust he will return in safety with rich collections. He has already done more than any other single man I

know of, not only in collecting, but in studying the materials he obtains.

For further particulars as to the physical features, climate, and natural productions of the Karen and Shan Hills, I may refer to Capt. Wardlaw Ramsay's paper on the Birds of Karen-nee in 'The Ibis,' 1875, p. 348; to Mr. Hemsley's paper on the Botany of Upper Burmah and the Shan States, in the 'Journal of the Linnean Society,' vol. xxviii. 1890, p. 1 *et seq.*; and to Dr. Manders's list of the Butterflies collected by him in the Shan States, in the 'Transactions of the Entomological Society,' 1890, which will supplement my paper.

Subfamily Satyrinæ.

Zethera diademoides.

Z. diademoides, Moore, P. Z. S. 1878, p. 824, t. 51. 3; Butt. Ind. i. p. 98, t. xiv. 33 ♂.[1]

Abundant at lower levels in East Pegu, and does not vary perceptibly.

Cœlites nothis.

C. nothis, Doubl. & Hew. Gen. D. L. p. 368, t. 66. 2 (1851); Butt. Ind. i. p. 101.

Not found by Doherty, but occurs at Bhamo. Major Adamson took it in dense forest.

Cœlites epiminthia.

C. epiminthia, Westw. Gen. D. L. p. 368 (1851); Butt. Ind. i. p. 101, t. xiii. fig. 31.

Perfectly distinct from the last, and not uncommon at Perak.

Cœlites euptychioides.

Cœlites euptychioides, Feld. Reise Nov. iii. p. 499.
Cœlites humilis, Butl. Ann. Nat. Hist. ser. 3, xx. p. 403 (1867).
Cœlites euptychioides, var. *humilis*, Dist. Rhop. Mal. p. 45, fig. 15.

A pair of this fine species from Perak.

Mycalesis anaxias.

M. anaxias, Hew. Ex. Butt. iii. *Myc.* t. 4. 25, 26 (1862); Butt. Ind. i. p. 106.

Occurs with the next at low levels in East Pegu.

Mycalesis anaxioides.

M. anaxioides, Marsh. Butt. Ind. i. p. 107.

Two pairs from East Pegu at 1500 feet agree perfectly with the description and in the points of difference mentioned by Marshall; they are also larger than any specimens of *M. anaxias* I have seen.

[1] I have cited Marshall and Nicéville's 'Butterflies of India' throughout this paper simply as "Butt. Ind."

Mycalesis sanatana.

M. sanatana, Moore, Cat. E. I. C. i. p. 231 ; Butt. Ind. i. p. 108.

Common in East Pegu in March and April at 4000 to 5000 feet.

Mycalesis gopa.

M. gopa, Feld. Nov. iii. p. 501 ; Butt. Ind. i. p. 107.

A specimen from the Naga Hills taken in August together with specimens of *M. perdicias*, Hew., from Hongkong and Ichang in China, tend to confirm the opinion I have previously expressed, that these forms are inseparable.

Mycalesis gotama.

M. gotama, Moore, Cat. E. I. C. i. p. 232 (1857).
M. charaka, Moore, P. Z. S. 1874, p. 566; Butt. Ind. i. p. 109.
Sadarga oculata, Moore, Trans. Ent. Soc. 1880, p. 158.
M. oculata, Butt. Ind. i. p. 109.

A specimen of the so-called *M. charaka* from Margharita taken by Doherty in May, and one from Bhamo obtained by Major Adamson, are inseparable from *M. gotama*, which also occurs in the Loochoo Islands (Pryer) and at Kiukiang (Pratt).

Mycalesis malsarida.

M. malsarida, Butl. Cat. Satyr. p. 134, t. 3. 14 (1868); Butt. Ind. i. p. 127.
M. khasiana, Moore, P. Z. S. 1874, p. 566 ; de Nicév. J. A. S. B. vol. lvii. pt. ii. p. 273 (1889) ; Butt. Ind. i. p. 127.

The wet-season form of this butterfly was taken in May by Doherty at Margharita.

Mycalesis nicotia.

M. nicotia, Hew. Gen. D. L. p. 394, t. 67. fig. 4 (1851); Butt. Ind. i. p. 129.

Males of this species were common in East Pegu at 4000 to 5000 feet in March and April, and differ from those taken at the same season in Sikkim in the ground-colour of the underside, which is much paler. A female from the Naga Hills at about 6000 feet, taken in August, is of the rainy-season form, and agrees with others from Bhutan and Sikkim taken in June and August.

Mycalesis malsara.

M. malsara, Moore, Cat. E. I. C. i. p. 231 ; Butt. Ind. i. p. 129.
Samanta rudis, Moore, Trans. Ent. Soc. 1880, p. 166.
Mycalesis rudis, Butt. Ind. i. p. 130.

Common in March and April in the Karen Hills.

The ocelli and breadth of the white band below are very variable, but all are nearer to the form *rudis* than to the rainy-season form

malsara, whilst one sent by Major Bingham from the Karen Hills in February is a perfect *rudis*. I think there can be no question of the seasonal dimorphism in this species.

MYCALESIS SURKHA.

M. surkha, Marsh. J. A. S. B. vol. li. pt. ii. p. 37, t. iv. fig. 1 ♂ (1882); Butt. Ind. i. p. 133.

Var. *ustulata*.

M. ustulata, Dist. Entomologist, vol. xviii. p. 289 (1885); Rhop. Mal. p. 418, t. xli. fig. 16 ♂.

With the exception of the larger ocelli, broader transverse lilac band, and more distinct markings of the underside, in which, as Distant says, it forms a transition to the Javan *M. oroates*, Hew., I see nothing to distinguish *M. ustulata*, of which I have two pairs taken by Doherty at Perak in February, from *surkha*, which I have from Tavoy. The difference is just that which might be expected to be produced by a damper and hotter climate, and I have little doubt that both forms will be found at different seasons in the same locality, if the dry and wet seasons are well marked.

MYCALESIS FUSCUM.

Dasyomma fuscum, Feld. Wien. ent. Mon. iv. p. 401 (1860).

Mycalesis diniche, Hew. Ex. Butt. iii. *Myc.* t. iv. fig. 23 (1862).

Mycalesis fusca, Dist. Rhop. Mal. p. 53, t. v. fig. 1 ♀.

Taken at Perak by Doherty, and also common in the island of Nias off the coast of Sumatra (Mogdiliani).

MYCALESIS DOHERTYI, n. sp. (Plate XXVII. figs. 3 ♂, 4 ♀.)

Mr. Doherty sent a pair from the low country of Perak which seem to me, as to him, to belong to an undescribed species of the same group as the last, in which the base of the costal, median, and submedian veins are much swelled in both sexes, and the male has a tuft of fine silky hairs at the base of the hind wing covering a glandular patch.

♂. Dark hair-brown above, with an ocellus near the apex of fore wing, another larger one below it. The hind wing has three small ocelli above and two larger ones below.

Beneath, the wings are paler brown, with a faint broken pale transverse oblique band near the base, another distinct whitish one across both wings not reaching the inner margin of hind wing. Ocelli as above but more distinct, the upper one on the hind wing larger but not so large as the fourth and fifth, and two additional small ones at anal angle which do not show above.

Below, the band of ocelli is edged on both sides with whitish, and there are two pale marginal zigzag lines of same colour.

The female is like the male but rather larger, paler above, and with rounder wings.

MYCALESIS MAIANEAS.

M. maianeas, Hew. Ex. Butt. iii. *Myc.* t. v. 27, 28 (1864); Butt. Ind. i. p. 108; Dist. Rhop. Mal. p. 48, t. vii. fig. 4 ♀.

A single female of this species from Perak agrees with the plate, except that the dull orange band of the fore wing is much fainter and almost obsolete except near the costa.

MYCALESIS JANARDANA.

M. janardana, Moore, Cat. E. I. C. i. p. 234; Butt. Ind. i. p. 128; Dist. Rhop. Mal. p. 54, t. v. fig. 2.

Martanda janardana, Moore, Trans. Ent. Soc. 1880, p. 169.

Seems fairly common at Perak in January and February. Fresh males show a black velvety sexual patch of scales covering the whole of the centre of the fore wing, which is not mentioned by Moore or Distant. The female is larger and with rounder wings.

I should include this in the same group as *M. fuscum* and *dohertyi* and probably *maianeas*; though Moore says the subcostal tuft of hairs on the hind wing is double, I can see no difference in it.

MYCALESIS MNASICLES.

M. mnasicles, Hew. Ex. Butt. iii. *Myc.* t. v. 32, 33 ♂; Butt. Ind. i. p. 126.

This species, which has hitherto been considered rare, was taken in some numbers by Doherty at the foot of the Karen Hills in East Pegu.

MYCALESIS ANAPITA.

M. anapita, Moore, Cat. E. I. C. i. p. 232; Dist. Rhop. Mal. p. 418, t. xxxix. fig. 8.

Not rare at Perak in January.

LETHE BHAIRAVA.

Debis bhairava, Moore, Cat. E. I. C. i. p. 217 (1857); Butt. Ind. i. p. 139.

Abundant in the Naga Hills at 6000 to 7000 feet and agrees with Sikkim specimens.

LETHE LATIARIS.

Debis latiaris, Hew. Ex. Butt. iii. *Debis*, t. 1. 4 (1862); Butt. Ind. i. p. 140.

Abundant in the Karen Hills at 4000 to 5000 feet.

LETHE SINORIX.

Debis sinorix, Hew. Ex. Butt. iii. *Debis*, t. 3. 19, 20 (1862).

Lethe sinorix, Butt. Ind. i. p. 144.

Occurs in the Naga Hills, and in the Karen Hills at 4000 to 5000 feet.

LETHE KANSA.

Debis kansa, Moore, Cat. E. I. C. i. p. 220 (1857).
Lethe kansa, Butt. Ind. i. p. 145.

Common in the Karen Hills at 3000 to 5000 feet.

LETHE DISTANS.

L. distans, Butl. Trans. Ent. Soc. 1870, p. 488; Lep. Exot. p. 87, t. 33. 4 ♂, 7 ♀; Butt. Ind. i. p. 148.

This occurs not unfrequently in the Karen Hills, but no females were sent by Doherty.

LETHE VINDHYA.

Debis vindhya, Feld. Wien. ent. Mon. iii. p. 402 (1859); Elwes, Trans. Ent. Soc. 1888, p. 313.

Occurs not uncommonly in the Karen Hills at 4000 to 5000 feet, and in the Naga Hills more rarely.

LETHE MEKARA.

Debis mekara, Moore, Cat. E. I. C. i. p. 219.
Lethe mekara, Butt. Ind. i. p. 148.

Occurs in the Karen and Naga Hills at 1500 feet.

LETHE GULNIHAL, var.

Lethe gulnihal, de Nicév. P. Z. S. 1887, p. 450, t. 39. 7 ♂.

A species which agrees nearly with the figure and excellent description of *L. gulnihal* was found not uncommonly by Doherty at from 2000 to 5000 feet in the Karen Hills, and I have also a single specimen taken by Dr. Manders in the Shan Hills. They differ, however, from the type from Bhutan in Moller's collection, now in the possession of Mr. J. H. Leech, in having the narrow lines which cross both wings beneath more zigzag and irregular, and the uppermost ocellus of the hind wing smaller. The female, which is undescribed, is much paler on both surfaces than the male, and has the costa of the fore wing, a spot near the apex, and a faintly marked patch below it of a lighter brownish yellow, with a whitish spot on the first median interspace. The hind margin of the wing not bowed as in the male. The ocelli of the hind wing showing on the upper surface, and the transverse lines of the underside are wider apart and much fainter. The ocelli are also smaller and nearly obsolete on the fore wing.

LETHE, sp. inc.

? *Lethe brisanda*, de Nicév. J. A. S. B. lv. pt. ii. p. 249, t. xi. fig. 13 ♀ (1887).

Two specimens were sent from Konoma in the Naga Hills with note that they belonged to a species different from *L. dinarbas* on account of the prehensores; and though I cannot see enough difference in them to separate them myself, they appear to be as near to *L. brisanda* from Bhutan as to *L. dinarbas*.

The members of this group of the genus are so nearly allied to

each other that it is not safe to decide without seeing a series, and I know *L. brisanda* only from the description and plate.

LETHE DINARBAS.

Debis dinarbas, Hew. Ex. Butt. iii. *Debis*, t. iii. 15 ♂; Butt. Ind. i. p. 155.

Common in the Naga Hills at 7000 feet.

LETHE SERBONIS.

Debis serbonis, Hew. Ent. Mo. Mag. xiii. p. 151 (1876); Butt. Ind. i. p. 155.

LETHE MINERVA.

Pap. minerva, Fabr. Syst. Ent. p. 493.

Lethe minerva, Dist. Rhop. Mal. p. 414, t. xxxvi. 8 ♂; Butt. Ind. i. p. 140.

A single female from East Pegu sent by Doherty. I have another from Rangoon taken by Major Adamson.

This species may be distinguished from others of the same group by the short band inside the cell of the fore wing beneath, and by the ocelli of the hind wing below, which have black centres broken into numerous minute dots.

LETHE CHANDICA.

Debis chandica, Moore, Cat. E. I. C. i. p. 219; Butt. Ind. i. p. 149.

Karen Hills at low elevations.

LETHE SIDONIS.

Debis sidonis, Hew. Ex. Butt. iii. *Debis*, t. iii. 16 ♂; Butt. Ind. i. p. 159.

Specimens from the Naga Hills agree with those from Khasia in being larger, brighter, and better marked below than Sikkim specimens; they are, however, hardly separable.

LETHE SIDEREA.

Lethe siderea, Marsh. J. A. S. B. xlix. pt. ii. p. 246 (1880); Butt. Ind. i. p. 159.

Occurs near Bernardmyo and agrees perfectly with Sikkim specimens.

ZOPHOESSA SURA.

Zophoessa sura, Doubl. & Hew. Gen. D. L. ii. p. 362, t. 61. 1; Butt. Ind. i. p. 164.

Common near Bernardmyo at 6000 feet.

ZOPHOESSA YAMA.

Zophoessa yama, Moore, Cat. E. I. C. i. p. 221; Butt. Ind. i. p. 169.

Also common near Bernardmyo and in the Naga Hills. It is

remarkable that this genus, which is so well represented in Sikkim, where eight of the nine known Indian species are found, should have produced no species peculiar to the more eastern hill-tracts, except *Z. andersoni*, which Mr. Doherty did not take.

Several other species occur, however, in Western China.

NEOPE PULAHA.

Lasiommata? pulaha, Moore, Cat. E. I. C. i. p. 227.
Neope pulaha, Butt. Ind. i. p. 170.

Very abundant in the Karen Hills at 4000–5000 feet, and occurs also in the Naga Hills.

The Burmese form of this species differs from that found in the Himalayas and Naga Hills slightly but so constantly that it might almost be separated.

A series of six pairs from Sikkim and the same number from the Karen Hills show the following points of distinction are constant :—

Above, the spots in the Karen-Hill specimens are paler. Beneath, all the markings are lighter in tint, especially the ocelli of the hind wings and the broad lunules outside them, which are fulvous instead of dark brown. A single male from the Naga Hills does not show these differences so clearly, but is nearer to the Burmese than to the Sikkim form.

Until I see more specimens from intermediate localities to prove that the transition is not gradual, I think it will be best to allow this form to remain unnamed.

Neope agrestis, Oberthür, from Ta-tsien-lo, is a smaller species, which seems nearly allied to *pulaha*, but distinct.

NEOPE BHADRA.

Lasiommata? bhadra, Moore, Cat. E. I. C. i. p. 227.
Neope bhadra, Butt. Ind. i. p. 171.

Occurs in the Karen Hills at 4000–5000 feet, but, except that the markings of the hind wings are somewhat paler, does not differ from Sikkim and Khasia specimens.

NEOPE ARMANDII.

Satyrus armandii, Oberth. Et. Ent. ii. p. 26, t. 11. 5 ♂ (1876).
Neope khasiana, Moore, Trans. Ent. Soc. 1881, p. 306 ; Butt. Ind. i. p. 172.

Doherty sent two males from the Naga Hills and one from Bernardmyo. I should have been inclined to refer these to two species if I had not seen a large series of specimens from Western China in Mr. Leech's collection, showing with some variation the same differences of colour on the hind wing as the Naga specimens, which are undoubtedly *khasiana*, Moore, do from the Bernardmyo one, which is inseparable from *armandii* and differs in having the outer part of the hind wing yellowish instead of brown. The Chinese specimens in Mr. Leech's collection belong to both forms, and seem by their labels to occur in the same localities; there are also some

more or less intermediate specimens. The pattern of the underside in this, as in most other Satyridæ, is the surest guide.

NEOPE MUIRHEADI.

Lasiommata muirheadi, var. *bhima*, Feld. Wien. ent. Mon. vi. p. 28 (1862).

Neope bhima, Marsh. J. A. S. B. xlix. pt. ii. p. 246 (1880); Butt. Ind. i. p. 172, t. xi. 26 ♀.

I have several specimens taken by Doherty in the Karen Hills and at Momeit, Upper Burmah, at 1500–2000 feet, also two from Dr. Manders taken in the Shan Hills, which seem to show that this species cannot be specifically separated from *N. muirheadi*. Of the latter I have three males from Ningpo, the original locality, which are easily distinguished by the small ocelli almost obsolete on the upperside and the less distinct markings, and in some cases almost obsolete white band on the hind wings below.

But three males and two females from Kiukiang and a female from near Shanghai show that these characters are not at all constant, and the ocelli of the Chinese females are like those of the Burmese males. The Burmese female I have resembles the plate but is larger, whilst the males have only one or two small brown marks on the upperside of the fore wing instead of the three well-marked ocelli beneath.

These four species are all the *Neopes* known to occur in India, as I think that *N. moorei*, Butl., may be dropped from the list altogether, as a very doubtful species of still more doubtful origin.

RAPHICERA SATRICUS.

Lasiommata satricus, Doubl. & Hew. Gen. D. L. t. 64. 4.

Raphicera satricus, Butt. Ind. i. p. 175.

Occurs in the Naga Hills at 6000–7000 feet.

SATYRUS LOHA.

Aulocera loha, Doh. J. A. S. B. lv. pt. ii. p. 118 (1887).

Satyrus loha, Elwes, Trans. Ent. Soc. 1888, p. 323, t. ix. 6 ♂.

Two females from Mao on the Manipur frontier of the Naga Hills, taken at 8500 feet in August by Doherty, and marked by him "*loha* apparently," also seem to me to belong to this species, but without the male sex it is not possible to distinguish it certainly from *S. padma*.

RAGADIA CRISIA.

Euptychia crisia, Hübn. Zutr. ex. Schm. t. 675, 676 (1832).

Ragadia crisia, Dist. Rhop. Mal. p. 420, t. xix. 7.

Seems to be common at Perak.

RAGADIA CRITO.

Ragadia crito, de Nicév. Journ. Bomb. Nat. Hist. Soc. v. p. 199 (1890).

Several specimens from Margharita in Upper Assam agree with typical specimens from Bhutan.

YPTHIMA METHORA. (Plate XXVII. fig. 1, ♂.)

Ypthima methora, Hew. Trans. Ent. Soc. ser. 3, ii. p. 291, t. xviii. 20, 21 ♀ (1864); Elwes, *op. cit.* 1888, p. 326; de Nicév. J. A. S. B. vol. lv. pt. ii. p. 233 (1887).

In writing of this species only two years ago I endeavoured to show how the form which I believed to be identical with Hewitson's species might be distinguished in Sikkim from *Y. sakra*, Moore, and from *Y. philomela*, Hübn., with which I thought it had been confused by Marshall and de Nicéville.

I have now received numerous specimens of three forms of *Ypthima*, collected by Doherty in Eastern Pegu at 2000 feet elevation and upwards, which I find it difficult to name with certainty. The difficulty arises from the fact that the types of *Y. methora* in Hewitson's collection are females, and therefore we are unable to say whether it belongs to the group in which the male is characterized by the presence of a sexual mark or patch of raised scales on the upperside of the fore wing, as seen in *Y. philomela* and *Y. motschulskyi*, or whether it is, as I supposed, more nearly allied to *Y. sakra*, in which there is no sexual mark.

Of the three forms now in question from Burmah, one is what is spoken of as *Y. methora* by Marshall and de Nicéville in Butt. Ind. i. p. 215, of which *Y. marshalli*, Butl., is the cold-weather form, with minute ocelli, and which has been bred from *Y. philomela* at Calcutta by de Nicéville (*cf.* J. A. S. B. lv. pt. ii. 1886, p. 231).

The male has a more or less indistinct sexual patch, which in some quite fresh specimens is hardly if at all visible, and which makes me doubt the propriety of using this as a character on which the genus can be divided into groups[1]. The ocelli are constant in number and position but variable in size. The underside is crossed by three distinct bands.

The second form is like it but smaller, with the inner and middle bands on the underside almost obsolete, and but for the faintness or absence of the sexual patch would, without any hesitation, be called *Y. philomela*.

The third is much larger, with larger ocelli, and agrees with what I spoke of as the rainy-season brood of *Y. methora* in my Sikkim Catalogue, which I have from Sikkim, Bhutan, the Khasia and Naga Hills, except that the underside is much paler and the ocelli even more prominent, especially the second one on the hind wing above. This is the more remarkable because the specimens appear to have been taken at a time, March and April, when the form with minute

[1] Since writing this I have seen very large numbers of *Ypthimæ* in Mr. Leech's collection from China, which tend to confirm my opinion that the so-called sex-mark is an inconstant character. Some of these are *Y. motschulskyi*, which normally has a well-defined sex-mark, but in others from the same locality this is faint or altogether wanting, and the variation in size and in the striation of the underside is so great that one cannot tell whether they belong to one or more species. Seasonal dimorphism does not seem to occur in China in this genus or in *Mycalesis* to anything like the same extent as in India, which is only to be expected when we know how different are the seasons.

ocelli occurs in Sikkim and when it would have been expected also in Burmah.

This last form has no trace of a sexual patch or of transverse bands on the underside, and might be considered a form of *Y. sakra* as it was by Doherty, who wrote *Y. nikæa* on the paper, this name being considered both by de Nicéville and myself as little more than a synonym of *Y. sakra*.

It would appear from these specimens that although in Sikkim, whence we have much larger series taken at all seasons, *Ypthima sakra*, *methora*, and *philomela* are distinguished by fairly good characters, in East Pegu the same characters do not hold good; and that neither the sexual patch nor the striation or bands of the underside can be relied on to separate or name them. I hope, however, that by pointing out the difficulties which arise, collectors in different parts of Burmah may be led to take particular notice of the species of *Ypthima*, and if possible clear up the confusion which at present exists among them.

YPTHIMA SAKRA.

Yphthima sakra, Moore, Cat. E. I. C. i. p. 236; Butt. Ind. i. p. 232, t. xvii. 67 ♂.

Specimens of this, which agree well with those from Sikkim and the Khasias, were sent from the Naga Hills as well as from Bernardmyo.

YPTHIMA PANDOCUS.

Y. pandocus, Moore, Cat. E. I. C. i. p. 235; Butt. Ind. i. p. 223.
Y. corticaria, Butl. Trans. Linn. Soc., 2nd ser. Zool. i. p. 537 (1879).

Common at Perak in January and February.

YPTHIMA NARASINGHA. (Plate XXVII. fig. 2, ♀.)

Y. narasingha, Moore, Cat. E. I. C. i. p. 236; Butt. Ind. i. p. 225.

Taken by Doherty at Bernardmyo in May.

The female, which is undescribed, differs from the male in being larger, of a greyer tint above, and a more greenish shade on the underside. The striation of the underside is less marked than in Hewitson's type specimen.

I doubt the occurrence of this species in Sikkim, where it has never been found by any recent collector, and believe that this is the first time that it has been found since Hewitson described it. Doherty supposed it to be a new species of *Callerebia*, to which genus it seems to have as much or more resemblance than to *Ypthima*.

ERITES MEDURA.

Hipparchia medura, Horsf. Cat. E. I. C. pt. ii. t. v. figs. 8, 8 *a* (1829).
? *Erites angularis*, Moore, P. Z. S. 1878, p. 825; Butt. Ind. i. p. 236, t. xvi. 50 ♀.

Numerous specimens were sent by Doherty from East Pegu, taken

at about 1500 feet, of which several females and one male were by him supposed to be, and marked as, a distinct species. These correspond to the female taken in the Thoungyeen forests by Major Bingham and described by Marshall and de Nicéville, Butt. Ind. i. p. 237, as nearer to *E. medura* of Java than to *E. angularis*.

After examining the series closely and comparing them with one Javan specimen, I do not see how to separate the two species, for, though in the supposed new species the ocelli on the upperside of the hind wing are much larger than in the other form from the same locality, whilst on the underside both the ocelli and the bands are almost obsolete, I am rather inclined to suspect seasonal dimorphism, and to think that this form is the last of the first brood, and the others, among which males are far more numerous, are the first of a second brood. In the Javan specimen we have the hind wing like one form below and the other above. Further observations are requisite in order to decide the question.

CALLEREBIA ORIXA.

C. orixa, Moore, P. Z. S. 1872, p. 555 ; Butt. Ind. i. p. 245.
Erebia polyphemus, Oberthür, Et. Ent. ii. p. 33, t. ii. 2 ♂ (1876).

Several specimens from the Naga Hills agree with those I took in the Khasias, and cannot be separated from Chinese examples, of which I have two from near Ichang, two from Ta-tsien-lo, and one from Moupin. The female, which is undescribed, does not differ from the male except in being slightly paler in colour.

CYLLOGENES JANETÆ.

C. janetæ, de Nicév. P. Z. S. 1887, p. 453.

A single male was taken by Doherty in the Naga Hills, and agrees with a specimen from Bhutan in my collection.

ELYMNIAS PENANGA.

Melanitis penanga, Westw. Gen. D. L. ii. p. 405.
E. penanga, Butt. Ind. i. p. 269.

One specimen was sent from the low country of East Pegu, another from Perak.

ELYMNIAS OBNUBILA.

E. obnubila, Marsh. Butt. Ind. i. p. 272.

Rare in the Karen Hills at about 2000 feet in April ; Doherty says that he has also taken it west of Bassein.

ELYMNIAS PEALI.

Elymnias peali, Wood-Mason, Ann. Nat. Hist. ser. 5, xi. p. 62, t. ii. (1883).
Dyctis peali, Butt. Ind. i. p. 276.

A single specimen of this distinct species was taken at Margharita in May.

Elymnias patna.

Melanitis patna, Westw. Gen. D. L. ii. p. 405.
Dyctis patna, Butt. Ind. i. p. 277.

Two specimens from the Karen Hills taken at 4000 feet.

Though Marshall and de Nicéville have adopted Butler's genus *Dyctis* in their book, their remarks show that they do not believe it to be a natnral one, and my own observations so far as they go lead me to the same opinion.

Subfamily Morphinæ.

Zeuxidia amethystus.

Z. amethystus, Butl. P. Z. S. 1865, p. 485; Dist. Rhop. Mal. p. 72, t. vii. 1 ♂, 2 ♀.
Z. masoni, Moore, P. Z. S. 1878, p. 826; Butt. Ind. i. p. 286.

Several specimens of both sexes were taken at the foot of the Karen Hills by Doherty in March and April, which agree with a male from Perak.

I am unable from these specimens to see how *Z. masoni* differs from *Z. amethystus*, to which both Distant and de Nicéville consider it closely allied. I have another male from Borneo which is identical with the Burmese species.

Zeuxidia aurelius.

Pap. aurelius, Cram. Pap. Ex. ii. p. 110, t. 168. A, B.
Zeuxidia aurelius, Dist. Rhop. Mal. p. 425, t. xxxvii. fig. 1 ♂.

A single male of this fine species sent from Perak by Doherty was unfortunately much damaged.

Amathusia amythaon.

A. amythaon, Doubl. Ann. Nat. Hist. xix. p. 175 (1847); Butt. Ind. i. p. 291.
? *A. portheus*, Feld. Reise Nov. iii. p. 461 (1865); Butt. Ind. i. p. 293, fig.
? *A. westwoodi*, Butl. Ent. Mo. Mag. vi. p. 55 (1869); Butt. Ind. i. p. 292.

I received three males and a female of this species taken at the foot of the Karen Hills by Doherty, which agree with one from Sikkim in Mr. Godman's collection, identified by him with *A. portheus*, also with a pair taken by Major Bingham in Tenasserim in my collection. I agree with the authors of the 'Butterflies of India' in thinking that only one species is represented by the three names given above.

Enispe euthymius.

Adolias euthymius, Doubl. Ann. Nat. Hist. xvi. p. 179 (1845).
Enispe euthymius, Butt. Ind. i. p. 300.

Seems to be very common in the Karen Hills at 1500–4000 feet.

ENISPE CYCNUS.

E. cycnus, Westw. Gen. D. L. ii. p. 330 ; Butt. Ind. i. p. 301.

Taken by Doherty in the Naga Hills at low elevations, and also at Bernardmyo.

ÆMONA LENA.

Æ. lena, Atkinson, P. Z. S. 1871, p. 215, t. xii. 1 ♂ ; Butt. Ind. i. p. 302.

A single male taken by Doherty in the Karen Hills at 2000 feet. It also occurs near Bernardmyo in Upper Burmah.

THAUMANTIS DIORES.

T. diores, Doubl. Ann. Nat. Hist. xvi. p. 234 (1845) ; Butt. Ind. i. p. 304.

T. ramdeo, Moore, Cat. E. I. C. i. p. 215 ; Butt. Ind. i. p. 305.

Occurs, but not abundantly, in the Karen Hills.

THAUMANTIS LUCIPOR.

T. lucipor, Westw. Gen. D. L. ii. p. 337 (1851) ; Dist. Rhop. Mal. p. 77, t. ix. 8 ♂, 9 ♀.

A few specimens in bad order from Perak.

THAUMANTIS NOUREDDIN.

T. noureddin, Westw. l. c. ; Dist. Rhop. Mal. p. 78, t. vii. 3 ♂, t. ix. 7 ♀.

Also sent from Perak by Doherty.

THAUMANTIS PSEUDALIRIS.

T. pseudaliris, Butl. Journ. Linn. Soc. vol. xiii. p. 115 (1877) ; Butt. Ind. i. p. 307 ; Dist. Rhop. Mal. p. 79, t. viii. 3 ♂.

Seems to be not rare at the foot of the Karen Hills, whence Doherty took several specimens in fresh condition. All these agree with the specimens taken by Major Bingham in Tenasserim, and differ slightly from the type from Malacca in the British Museum, which has the band of the fore wing rather shorter and narrower than my specimens.

STICTOPHTHALMA LOUISA.

Thaumantis louisa, Wood-Mason, J. A. S. B. xlvii. pt. ii. p. 175 (1878).

Stictophthalma louisa, Butt. Ind. i. p. 311.

This species, which was hitherto only known in Europe from the few specimens taken in the Thoungyeen Valley by Major Bingham, seems to be very numerous at the foot of the Karen Hills, where Doherty took many males, but only two or three females, in March and April. They do not vary appreciably, and in colour are just halfway between *S. camadeva* and *S. howqua*, but perfectly distinct from both.

CLEROME GRACILIS.

C. gracilis, Butl. Ann. Nat. Hist. ser. 3, xx. p. 401 (1867); Dist. Rhop. Mal. p. 81, t. viii. 1 ♂.

A good species, of which four males and two females were sent from Perak by Doherty. The female, which was unknown to Distant, differs only in the shape of the wings.

CLEROME ARCESILAUS.

C. arcesilaus, Fabr.; Butt. Ind. i. p. 313.

Also taken at Perak by Doherty, and constantly distinct from the last, which is smaller and of a different colour below.

MELANOCYMA FAUNULA.

Clerome faunula, Westw. Gen. D. L. ii. p. 334, t. 54. 1 ♀ (1851); Dist. Rhop. Mal. p. 81, t. viii. 2 ♀.

Clerome (*Melanocyma*) *faunula*, Westw. Trans. Ent. Soc. n. s. iv. p. 186, t. 21. 2 ♀ (1858).

A good series of this fine species were sent from Perak by Doherty. As the male does not seem to have been described, I may note that it has a curious sexual character in the shape of a large tuft of grey hairs between the submedian and internal veins of the hind wing near the anal angle. The same tuft exists, but in a much less developed form, in the male of *Clerome assama*, Westw., and seems to have been overlooked in the 'Butterflies of India' as well as by Westwood, though it has been remarked as occurring in *Xanthotænia busiris*. On this account and on account of its very different appearance from any other of the genus *Clerome* known to me, I think Westwood's genus should be adopted.

XANTHOTÆNIA BUSIRIS.

Clerome (*Xanthotænia*) *busiris*, Westw. Trans. Ent. Soc. n. s. iv. p. 187 (1858).

Xanthotænia busiris, Dist. Rhop. Mal. p. 82, t. v. fig. 7; Butt. Ind. i. p. 284.

A pair sent from Perak by Doherty.

EURYTELA HORSFIELDII.

E. horsfieldii, Bdv. Faun. Ent. Mad. p. 54, ♀; Butt. Ind. ii. p. 12, t. xviii. 69.

Two males were sent from the Karen Hills by Doherty, and I have another from Singmo in the Shan States taken by Dr. Manders.

EURYTELA CASTELNAUI.

E. castelnaui, Feld. Wien. ent. Mon. iv. p. 401 (1860); Reise Nov. t. 61. figs. 5, 6.

Seems not common at Perak, as Doherty sent four males only, but no female. They are somewhat larger than, but otherwise identical with, a specimen from Borneo.

TERINOS ROBERTSIA.

T. robertsia, Butl. Ann. Nat. Hist. ser. 3, xx. p. 399, t. viii. 2–4 (1867).

Several pairs of this pretty species from Perak.

TERINOS CLARISSA.

? *T. clarissa*, Bdv. Sp. Gén. i. t. ix. 4 (1836); Butt. Ind. ii. p. 39, t. xxiii. 101 ♂.

? *T. teuthras*, Hew. P. Z. S. 1862, p. 89; Dist. Rhop. Mal. p. 183, t. x. 6 ♂.

A single male from Perak agrees with de Nicéville's figure of a Tenasserim specimen except in wanting the white spot on the underside and having the velvety patch of fore wing rather larger. It agrees even better with Distant's plate of *T. teuthras*, but without seeing a series I am not able to say whether there are two species or not. A Bornean specimen in my collection has the ochreous border of the hind wing very much larger and brighter than the Perak one.

STIBOCHIONA NICEA, var.

Adolias nicea, Gray, Lep. Nepal, p. 13, t. xii. 1 (1846).
Stibochiona nicea, Butt. Ind. ii. p. 120, t. xix. 81 ♂.

Doherty sent four males and one female from the Karen Hills taken at about 4000 feet, of which one was marked by him "new sp.," and which at first sight seem very different from *S. nicea* and nearer to the Javan *S. coresia*. They are small, with a broader white border to the hind wings than is found in Indian specimens and a second blue line inside this border. I have, however, females from Bhutan and Khasia which are nearly the same, and therefore doubt the propriety of separating them. No species of this genus is recorded by Distant from the Malay Peninsula. Mr. Doherty calls attention to the hairy eyes in this genus, which he says is its most remarkable feature.

HELCYRA HEMINA.

H. hemina, Hew. Trans. Ent. Soc. ser. 3, ii. p. 245, t. xv. 1 (1864); Butt. Ind. ii. p. 45, t. xix. 83 ♂.

One male from the Naga Hills and four from the Ruby-Mine district, taken in June.

SEPHISA CHANDRA.

Castalia chandra, Moore, Cat. E. I. C. p. 200, t. vi. *a*. 4.
Sephisa chandra, Butt. Ind. ii. p. 46.

Two males from the Naga Hills agree with Sikkim specimens.

APATURA ULUPI.

A. ulupi, Doh. J. A. S. B. 1889, p. 125, t. x. fig. 2 ♂.

One of the types of this very distinct species was sent by Doherty from Margharita and is in my collection.

Cirrhochroa bajadeta.

C. bajadeta, Moore, Cat. E. I. C. p. 150, t. iii. *a*. 3 (1857).

Two specimens from Perak agree with a Sumatran one in my collection.

Cirrhochroa orissa.

C. orissa, Feld. Wien. ent. Mon. iv. p. 399 (1860) ; Reise Nov. t. 49. 7, 8.

A few examples of this distinct species from Perak.

Neptis dindinga.

? *N. dindinga*, Butl. Trans. Linn. Soc., 2nd ser. Zool. i. p. 542, t. 68. 6 (1879) ; Dist. Rhop. Mal. p. 151, t. xvii. 5 ♀ ; Butt. Ind. ii. p. 80.

I have a pair from the foot of the Karen Hills, of which the female agrees with Distant's plate ; the male is much smaller, and has the outer fulvous line on the hind wing almost absent, whilst in a specimen from Moulmein, from whence the type came, it is quite gone, and the markings of the underside are much more diffuse. In this specimen also the orange band on fore wing above extends below the median nervure.

I have another specimen from Bernardmyo, and one from Pyanyoung in the Shan Hills collected by Dr. Manders, which agree above with the Karen-Hill female, but are much paler below, and have the markings partly obsolete.

After studying de Nicéville's key to this genus in the second vol. of the 'Butterflies of India,' I am inclined to think that some of the characters used by him are too variable to be relied on, and that there are not nearly so many species of *Neptis* as he allows. The group requires to be studied with much larger material than he possessed, and the actual types would then be of very little importance, as they represent individuals rather than species.

Neptis radha.

N. radha, Moore, Cat. E. I. C. i. p. 166, t. iv. *a*. fig. 4 ; Butt. Ind. ii. p. 84.

A single male, very pale in colour, from Bernardmyo, and two or three more from the Naga Hills at 6000 feet.

Neptis miah.

N. miah, Moore, l. c. p. 164, t. iv. *a*. fig. 1 ; Butt. Ind. ii. p. 85.

Occurs in the Naga and Karen Hills, and seems to vary a good deal in the breadth and position of the bands of the hind wing ; a single male from Perak has much less of the purplish colour below, and may be another species.

Neptis ananta.

N. ananta, Moore, l. c. p. 166, t. iv. *a*. fig. 3 ; Butt. Ind. ii. p. 85.

Occurs in the Naga and Karen Hills at 4000–6000 feet.

NEPTIS ANJANA.

N. anjana, Moore, Trans. Ent. Soc. 1881, p. 309 ; Butt. Ind. ii. p. 92.

This species seems common in the Karen Hills at 4000–5000 feet. A single specimen was also sent from Perak by Doherty.

NEPTIS CARTICA, var. BURMANA.

N. cartica, Moore, P. Z. S. 1872, p. 562 ; Butt. Ind. ii. p. 89.
N. burmana, de Nicév. Butt. Ind. ii. p. 89 (1886).

A single female, which I can only refer to this species, was taken by Doherty in the Karen Hills. It differs from females of *N. cartica* from Sikkim in the points mentioned by de Nicéville, except in the hind wing below, and is not, in my opinion, specifically distinct from that species, though more specimens are necessary to decide the question.

NEPTIS AMBA, var. CARTICOIDES.

N. amba, Moore, P. Z. S. 1858, p. 7, t. xlix. 4 ; Butt. Ind. ii. p. 88.
N. carticoides, Moore, Trans. Ent. Soc. 1881, p. 309 ; Butt. Ind. ii. p. 90.

Several specimens from the Karen Hills, taken at 4000–5000 feet, agree with Sikkim examples in my collection, but are somewhat larger. I think that this form is much nearer to *amba* of the N.W. Himalayas than to *cartica*, and is hardly separable from it. De Nicéville says the markings of *carticoides* are narrower and tinged with fuliginous, but I find considerable variation in both respects in *amba*, and the range of the species appears to be continuous.

NEPTIS NATA.

N. nata, Moore, Cat. E. I. C. i. p. 168, t. iv. *a*. fig. 6 ; Butt. Ind. ii. p. 100.
?N. khasiana, Moore, P. Z. S. 1872, p. 562, t. xxxii. 7 ; Butt. Ind. ii. p. 100.

A single female from the Karen Hills agrees with the plate and description of *nata* very fairly and with a specimen from Moulmein taken by Major Adamson. Another specimen from him, marked "Akyab, March '83, rare," is intermediate between *nata* and *khasiana*, of which I have two specimens, taken by Doherty in the Dhansiri valley of Upper Assam.

NEPTIS DURYODANA.

N. duryodana, Moore, P. Z. S. 1858, p. 10, t. xlix. 8 ; Butt. Ind. ii. p. 101.

Seems common at Perak. Very like the last above, but distinguished by the basal band of hind wing below being double instead of single.

NEPTIS EURYNOME.

Limenitis eurynome, Westw., Don. Ins. China, p. 66, t. xxxv. fig. 4.
Neptis varmona, Moore, P. Z. S. 1872, p. 561; Butt. Ind. ii. p. 95 *et seq.*

I am unable to separate the numerous forms of this very wide-ranging species, which have been described by Moore as *disrupta*, *adara*, *meetana*, and *kamarupa*, by Butler as *swinhoei*, *eurymene*, and *mamaja*, and which are described and compared as far as possible by de Nicéville, who appears to take much the same view as I do.

If the South-Indian form described as *varmona* be compared alone with the Chinese form called by Westwood *eurynome*, it might perhaps be separated; but on bringing together a very large series of nearly 100 specimens from all parts of India, China, and Burmah, I can find no reason for doing so, and think that they may be considered as the tropical form of *N. aceris*, which occurs in Europe, Amur-land, and Japan, from which they are principally distinguished by the yellower colour of the underside. *N. aceris* is represented in the Himalayas by *N. mahendra*, which I should consider identical with it. *L. eurynome* seems common everywhere, and was taken by Doherty in the Naga and Karen Hills and at Perak.

NEPTIS NANDINA.

N. nandina, Moore, Cat. E. I. C. i. p. 168, t. iv. *a*. 7; Butt. Ind. ii. p. 104.

This species seems fairly distinct though nearly allied to *N. aceris*; de Nicéville says that it may be recognized by the sudden widening out at the costa of the discal band on underside of hind wing. This I find to be hardly the case in my series. I should say rather that the band becomes gradually broader in nine cases out of ten. I received specimens from Bernardmyo and the Karen Hills, where it seems to be fairly common. *Neptis clinia* of Moore, vaguely recorded from Bengal and Siam, may, I think, be dropped from the Indian list as a form which cannot be identified.

PENTHEMA DARLISA.

P. darlisa, Moore, P. Z. S. 1878, p. 829; Butt. Ind. ii. p. 145.

Two or three in bad condition from the foot of the Karen Hills.

LIMENITIS ZAYLA.

L. zayla, Doubl. & Hew. Gen. D. Lep. t. xxxv. 4; Butt. Ind. ii. p. 159.

Not a rare species in the Naga Hills, and does not differ from Sikkim specimens.

LIMENITIS DUDU.

L. dudu, Westw. Gen. D. Lep. ii. p. 276 (1850); Butt. Ind. ii. p. 159.

Also found in the Naga Hills.

LIMENITIS DANAVA.

L. danava, Moore, Cat. E. I. C. p. 180, t. vi. *a*. 2 ; Butt. Ind. ii. p. 157.

Less common than the last two in the Naga Hills ; a female from there is darker in colour than others from Sikkim and Landour.

ATHYMA KANWA.

A. kanwa, Moore, P. Z. S. 1858, p. 17, t. li. fig. 2 ; Butt. Ind. ii. p. 169.

Several males of this were taken in the Karen Hills at 4000–5000 feet.

ATHYMA PRAVARA.

A. pravara, Moore, Cat. E. I. C. p. 173, t. v. *a*. 4 ; Butt. Ind. ii. p. 170.

Sent by Doherty from Margharita and the Karen Hills.

ATHYMA MAHESA, var. RANGA.

A. ranga, Moore, Cat. E. I. C. p. 175, t. v. *a*. 6 ; Butt. Ind. ii. p. 172.

A single specimen of this, which I consider to be a form of *mahesa*, taken in March in the Karen Hills.

ATHYMA OPALINA, var. ORIENTALIS.

A. orientalis, Elwes, Trans. Ent. Soc. 1888, p. 354, t. ix. fig. 4 ♂.

Males of this from the Naga Hills are exactly like those from Sikkim, Bhutan, and Khasia, which I called *orientalis*, but two from the Karen Hills are nearer to the typical *opalina*. This inclines me to think that the race is not so constant as I supposed, and I therefore drop the name as a specific one.

NEUROSIGMA DOUBLEDAYI, var. ? (Plate XXVII. fig. 7, ♂.)

Acontia doubledaii, Westw. Cab. Or. Ent. p. 76, t. xxxvii. 4 ♀ (1848).

Adolias siva, Westw. Gen. D. Lep. ii. p. 291 (1850).

Neurosigma siva, Butt. Ind. ii. p. 151, t. xix. fig. 80 ♂.

Seems common in the Karen Hills at 4000–5000 feet ; but males only were sent.

These are perfectly distinct from the same sex of the form found in Sikkim, Bhutan, and Khasia, having the rufous colour confined to the base of the fore wing only, and not spread over the greater part of the fore and inner half of the hind wing as in Sikkim. In fact they resemble Westwood's figure, which represents a female from the Khasia Hills, except in the absence of a yellow dash near the base of the hind wing. I have a specimen collected by Doherty in the Chittagong Hills, which is like the Sikkim form.

If, therefore, the female from the Karen Hills proves different from the Sikkim and Khasia one, I should have no hesitation in naming this form as distinct ; at present, however, we may only have a case

of male dimorphism in which the male and female are different in some localities and resemble each other in others.

Two names also exist, of which *siva* is the one most generally used, though *doubledayi* has priority. It is a curious fact that the extremely rare female sex should have first been sent to England, whilst I have never been able to procure one, and de Nicéville had never seen one when the second volume of his book was published. A specimen in Mr. Crowley's collection, however, is exactly like the plate of *A. doubledayi*.

Limenitis austenia.

Lebadea austenia, Moore, P. Z. S. 1872, p. 560, t. xxxii. fig. 1.
Limenitis austenia, Butt. Ind. ii. p. 157.

Four males and a female of this rare species were taken at Margharita in May 1889 by Doherty. According to his observations it is a low-country species.

Euthalia taooana.

Adolias taooana, Moore, P. Z. S. 1878, p. 831 ; Butt. Ind. ii. p. 197.

Seems abundant in the Karen Hills at 4000–5000 feet, but only males were sent by Doherty. The female remains undescribed, but probably does not differ materially from the male.

There is some variation in the small spots near middle of the hind margin of fore wing above. Normally there are two, but in some specimens one or both are wanting. On the hind wing above the two uppermost spots are present, but of the lower ones one or both are sometimes absent. The ground-colour of the underside is paler than in any other of the group.

This is nearly allied to *E. confucius* of Westwood, from China, a species which I have not been able to examine.

Euthalia narayana.

E. narayana, Grose Smith, Rhop. Ex. pt. xv. p. 6, t. ii. 4, 5 (1891).

I have two males from the Naga Hills differing from each other as well as from *E. nara*. One of them is the same as the form described from the Ruby Mines as *E. narayana*, the other is more like *E. iva*, Moore. I am not able to say without seeing more specimens from different localities whether this should be considered a good species or not.

Euthalia nara, var.

? *Adolias nara*, Moore, Trans. Ent. Soc. n. s. v. p. 78, t. viii. 1 ♀ (1859).
E. nara, Butt. Ind. ii. p. 197.

Two males sent from the Naga Hills by Doherty differ from a pair from Sikkim and others from Khasia in having the spots in the band of fore wing of a greenish rather than a bluish shade. The series of spots on hind wing below are rounder and arranged in a more curved line than in *nara*.

EUTHALIA ANYTE.

Adolias anyte, Hew. Ex. Butt. iii. *Adol.* t. ii. 5 (1862).
E. anyte, Butt. Ind. ii. p. 198.

Occurs in the Naga Hills, whence I have what I take to be the undescribed female of this species. I had it as well from Bhutan and Sikkim, but had confused it with *E. nara*, to which it bears a close resemblance. It may, however, be distinguished by the colour of the underside, which is of a paler green, by the position and shape of the band of spots on hind wing below, which corresponds much better with that of the male *E. anyte* than with *E. nara*, and by the smaller size and rather different shape of the markings at base of hind wings below. In the female from Naga Hills the band below is much shorter than in the Bhutan and Sikkim females, and the corresponding spots above are absent. In the male these white spots take the form of a yellowish patch, varying in size but larger than in the female. The fact that this female has come with the male *anyte* from no less than three localities seems to me to confirm my opinion [1].

EUTHALIA FRANCIÆ.

Adolias franciæ, Gray, Lep. Nepal, p. 12, t. xiv.
E. franciæ, Butt. Ind. ii. p. 202.

Occurs in the Naga and Karen Hills and at Bernardmyo. The specimens vary here as elsewhere in the breadth of the white bands and slightly in the tint of the upperside, but after comparing a large series I do not think any local races can be recognized.

EUTHALIA SATROPACES.

Adolias satropaces, Hew. Ent. Mo. Mag. xiii. p. 150 (1876).
E. satropaces, Butt. Ind. ii. p. 206.

Occurs in the Karen Hills.

? EUTHALIA BIPUNCTATA, var.

? *Adolias bipunctata*, Snell. v. Voll. Tijd. Ent. v. p. 191, t. 10. 4 (1862).

A single male from Perak is unlike anything described by Distant or de Nicéville, and is nearest to one from Padang in Sumatra which is named *bipunctata* by Moore. I have not the original description to refer to, but the species is nearest to *E. kesava* and differs from it in its smaller size, brighter blue border to the hind wings, and beneath in having a series of small pale bluish spots near the apex of fore wing, which in the Sumatran specimen are also obsolete.

[1] Since writing this I have seen in Mr. Leech's collection large numbers of an insect from Western China, described by him as *E. omei*, which evidently represents *E. anyte* in China; the male has the upper part of the hind wing yellowish; the female, which he had described as a different species, is almost exactly similar to the female of *E. anyte* from Sikkim, and confirms the opinion I have expressed above.

? Euthalia alpheda.

? *Nymphalis alpheda*, Godt. Enc. Méth. ix. p. 384 (1823).
Euthalia alpheda, Butt. Ind. ii. p. 213.
? *Adolias parta*, Moore, Cat. E. I. C. p. 185.
Euthalia parta, Dist. Rhop. Mal. p. 437, t. xxxvii. 7 ♂.

I received from the Karen Hills many examples of a species which I name *alpheda* with doubt, as the type of Godart is not available, but it is not the same as what I received from Java named *E. alpheda* by Snellen. The male is exactly like the one figured by Distant as *E. parta*, which he says was identified by Moore, though it does not agree with his figure. It is the darkest and most uniformly black of all the species known to me, having only a trace of pale blue at the apex of fore wing below. The female is dull brown, with the usual markings of the group, and a curved series of six pale spots across the fore wing reaching the costa, showing with equal distinctness on both surfaces. Below, the greater part of the hind wing is pale lilac and the outer series of spots faint. This does not agree with Moore's description of *parta* ♀, but it is almost certainly the female of my species, as the number of both sexes showed that it was far commoner than any other in the locality where they were taken.

Euthalia zichri, var. ?

? *Adolias zichri*, Butl. Cist. Ent. i. p. 6 (1869).
Euthalia zichri, Dist. Rhop. Mal. p. 438, t. xliii. 6.

A single male from East Pegu, at the foot of the Karen Hills, agrees well with Distant's plate. The type in the British Museum from Borneo is the same above, but differs on the underside; it may be a distinct race, but I cannot judge from one specimen.

Euthalia appiades.

Adolias appiades, Mén. Cat. Mus. Petr. ii. p. 120, t. ix. 4 ♂; Butt. Ind. ii. p. 207.
? *Adolias xiphiones*, Butl. P. Z. S. 1868, p. 609, t. xlv. 6 ♂; Butt. Ind. ii. p. 209.
Adolias parvata, Moore, P. Z. S. 1878, p. 831, t. lii. 3 ♀.
Euthalia balarama, Moore, P. Z. S. 1865, p. 766, t. xli. 3 ♂.

This seems abundant in the Karen Hills, but I am not able to see how to distinguish it with certainty from *A. xiphiones*, Butl., or *A. balarama* of Moore, which latter Col. Swinhoe also considers distinct. There is much variation in the size and tint of the males, and still more in the females.

The points relied on by Butler and de Nicéville are variable in the male sex; of these I have 6 from Sikkim, 4 from Bhutan (of which 2 are named *balarama*, Moore, by Col. Swinhoe), 1 from Cachar, 2 from Araccan and Moulmein, 1 from Tenasserim, and 3 from the Karen Hills. The southern form is somewhat smaller and darker, but the difference is trifling.

Among the females, 1 from Nepal, 7 from Sikkim, 1 from Bhutan, and 1 from Cachar have the pale band and white spots at apex of

fore wing quite or almost obsolete; whilst 1 from Bhutan (named *sahadeva* by Col. Swinhoe), 3 from Cachar, 1 from Khasia, 1 from Burmah, 2 from Tenasserim, and 4 from the Karen Hills have the whitish band more or less well marked, and the apical patches distinct and well defined. Two species might very well be made of the female sex, but as both forms are found in the central part of its range I should rather consider it as a case of sexual dimorphism.

EUTHALIA JAHNU.

Adolias jahnu, Moore, Cat. E. I. C. p. 192 ♀; Butt. Ind. ii. p. 211.
Adolias sananda, Moore, Trans. Ent. Soc. 1859, p. 76, t. vii. 3 ♂.

One male and three females from the Naga and Karen Hills; the latter are rather smaller and paler than those from Sikkim and Khasia.

EUTHALIA KESAVA, var. DISCISPILOTA.

Adolias discispilota, Moore, P. Z. S. 1878, p. 831, t. lii. 2; Butt. Ind. ii. p. 213.

Though the form found in the Karen Hills and Tenasserim is smaller and slightly different in the markings from *kesava* of Sikkim and the Khasias, I hardly think it can be treated as a distinct species; the male in this case is more different from *kesava* than the female, which is almost identical.

ATHYMA NEFTE, var. NIVIFERA.

A. nivifera, Butl. Trans. Linn. Soc., 2nd ser. Zool. i. p. 540, t. 69. 4 (1879).
A. nefte, var. *nivifera*, Dist. Rhop. Mal. p. 163, t. xvi. 6, 7.

A single male from Perak has the white band above suffused and edged with blue. I follow Distant in treating it as a variety of *nefte*, not having the material which would allow me to judge for myself.

ATHYMA KRESNA.

A. kresna, Moore, P. Z. S. 1858, p. 12, t. l. 4 ♂.

A male from Perak agrees with one in my collection from Sumatra.

ATHYMA SULPITIA.

Pap. sulpitia, Cram. iii. t. ccxiv. E, F.
A. sulpitia, Butt. Ind. ii. p. 174.

A specimen from Bhamo, collected by Major Adamson, agrees with Chinese examples from Ningpo and the valley of the Yang-tse-kiang.

ATHYMA SELENOPHORA.

Limenitis selenophora, Koll. Hügel's Kash. iv. p. 426.
A. selenophora, Butt. Ind. ii. p. 176.

Two pairs from the Karen Hills, of which the females are much smaller than any of my Indian specimens.

Athyma zeroca.

A. zeroca, Moore, P. Z. S. 1872, p. 564; Butt. Ind. ii. p. 177.

Several males from the Karen Hills have the apical white spots larger and better marked than in the Himalayas.

Athyma cama.

A. cama, Moore, P. Z. S. 1858, p. 14; Butt. Ind. ii. p. 178.

Two males from the Karen Hills.

Athyma amhara.

A. amhara, Druce, P. Z. S. 1873, p. 344, t. 32. 2; Butt. Ind. ii. p. 181; Dist. Rhop. Mal. p. 162, t. xvi. 5 ♂.

A pair from Perak. What I take to be the female of *A. amhara* agrees precisely with the male on the underside, which is by far the safest guide in this group, but on the upperside differs from the female described by Druce and Distant. It is almost exactly like a small female of *A. selenophora*, but that species is not known to occur so far south, and the underside is also quite different in colour, being dark grey instead of rufous.

Symbrenthia niphanda.

S. niphanda, Moore, P. Z. S. 1872, p. 559; Butt. Ind. ii. p. 243.

Not common in the Naga Hills, where the specimens are larger than in Sikkim, but otherwise quite similar.

Cyrestis nivea.

Amathusia nivea, Zinken-Sommer, Nova Acta, xv. t. xiv. 1 (1831).
Cyrestis nivea, Butt. Ind. p. ii. 252.
C. nivalis, Feld. Reise Nov. iii. p. 414.

Common at Perak. I quite agree with de Nicéville that the Indian form is not separable from *C. nivea*, of which I have both Javan and Bornean specimens.

Cyrestis cocles.

Pap. cocles, Fabr. Mant. ii. p. 7.
C. cocles, Butt. Ind. ii. p. 254.
C. formosa, Feld. Reise Nov. iii. p. 412.
C. earli, Dist. Ann. Nat. Hist. ser. 5, xi. p. 174 (1883); Rhop. Mal. p. 141, t. xiii. 5.

Doherty took both *C. cocles* and *C. earli* at Perak, and a form intermediate between them at Momeit. I quite agree with de Nicéville that these varieties all belong to one species and are too variable to be separated.

Cyrestis periander.

Pap. periander, Fabr. Mant. ii. p. 9.
C. periander, Butt. Ind. ii. p. 255.

Seems common at Perak.

CYRESTIS RISA.

C. risa, Doubl. & Hew. Gen. D. Lep. ii. p. 262, t. xxxii. 4 ; Butt. Ind. ii. p. 256.

Occurs in East Pegu at low elevations.

CYRESTIS RAHRIA.

C. rahria, Moore, Cat. E. I. C. p. 147, t. iii. *a*. 2; Butt. Ind. ii. p. 256.

Appears to be common at Perak.

KALLIMA INACHUS.

Paphia inachus, Bdv., Cuv. Règ. Anim., Ins. ii. t. 139. 3.

Kallima inachus, Butt. Ind. ii. p. 261.

Kallima limborgii, Moore, P. Z. S. 1878, p. 828 ; Butt. Ind. ii. p. 262.

Occurs in the Naga and Karen Hills and Ruby-Mines districts. I can see no reason for separating the Burmese form from that found in Sikkim and the Naga Hills, as they vary in all the characters mentioned by Moore and de Nicéville.

KALLIMA PARALEKTA.

Paphia paralekta, Horsf. Cat. E. I. C. t. 6. fig. 4 (1829).

K. buxtoni, Moore, Trans. Ent. Soc. 1879, p. 10 ; Dist. Rhop. Mal. p. 429, t. 37. 2.

Seems uncommon at Perak. The specimens sent by Doherty agree with Distant's figure and seem to me inseparable from Javan specimens.

KALLIMA KNYVETTI.

K. knyvetti, de Nicév. Butt. Ind. ii. p. 267 (1886).

? *K. alompra*, Moore, Trans. Ent. Soc. 1879, p. 14.

Seems to be not uncommon in the Naga Hills at about 5000 feet. The female, which is undescribed, differs from the male in having the apex of the fore wing very much produced and a large hyaline spot. Whether *K. alompra* is the same or not I cannot say ; but if it really occurs in Burmah it is probably the same, as no other blue *Kallima* has been taken in Burmah to my knowledge since it was described, and by the description it cannot be separated. As, however, this must remain uncertain, I think de Nicéville's name had better stand.

CHARAXES DELPHIS.

C. delphis, Doubl. Ann. Soc. Ent. Fr. 1843, p. 217, t. vii. ; Butt. Ind. ii. p. 272.

Two specimens from the foot of the Karen Hills.

CHARAXES SCHREIBERI.

Nymphalis schreiberi, Godt. Enc. Méth. ix. Suppl. p. 825.

Charaxes schreiberi, Butt. Ind. ii. p. 274.

Doherty picked up a tattered male of this insect in the streets of Toungoo.

Charaxes jalysus.

C. jalysus, Feld. Reise Nov. iii. p. 438, t. lix. 5 (1866); Dist. Rhop. Mal. p. 108, t. xiii. 4.

Two specimens from the Karen Hills.

Charaxes durnfordi.

C. durnfordi, Dist. Ent. 1884, p. 191; Rhop. Mal. p. 432, t. xl. 8.

Several specimens were taken by Doherty at the foot of the Karen Hills which agree with Distant's figure.

Charaxes lunawara.

C. lunawara, Butl. Lep. Ex. p. 99, t. xxxvii. 2; Butt. Ind. ii. p. 282.

Two specimens agreeing with those from Sikkim were sent from the Karen Hills.

Prothoë franckii.

Prothoë franckii, Wall. Trans. Ent. Soc. 1869, p. 80.

Prothoë angelica, Butl. Ann. Nat. Hist. ser. 5, xvi. p. 53 (1885) Butt. Ind. ii. p. 295, front fig. 120 (♂).

Prothoë uniformis, Butl. l. c.; Dist. Rhop. Mal. p. 434, t. 38. fig. 4.

Occurs not uncommonly at the foot of the Karen Hills in East Pegu, and at Perak, where the specimens are somewhat larger and have in the male less white in the blue band of the fore wing. I cannot see how to distinguish them from a Sumatran specimen in my collection which is *P. franckii*, and should say that *Prothoë uniformis*, Butl., as figured by Distant from Perak, was also the same species. The females differ in being larger than the males, have the blue band whitish shaded with blue on the edges, and the wings below the band dull greenish instead of bluish black. Mr. Doherty calls attention to the tuft of hairs at the base of the hind wing above in the male; this varies in colour from fulvous to black.

Prothoë caledonia.

Nymphalis caledonia, Hew. Ex. Butt. i. p. 86, t. 43. 3, 4.

Prothoë caledonia, Dist. Rhop. Mal. p. 110, t. 13. 9.

Three specimens of this splendid species were taken by Doherty at Petichaung, at the foot of the Karen Hills, and two others at Perak.

? Rhinopalpa polynice.

Pap. polynice, Cram. iii. p. 4, t. 195. D, E (♂).

? Vanessa eudoxia, Guér. Rev. Zool. 1840, p. 44; Deless. Voy. Inde, p. 73, t. xx. ♀ (1843).

Rhinopalpa fulva, Feld. Wien. ent. Mon. iv. p. 399; Butt. Ind. ii. p. 246, t. xxiii. 102 (♂).

I cannot be sure of the identification of the Burmese *R. fulva* with

R. polynice of Cram., as I have no Javan specimens; but I cannot separate it from those found in Sumatra, and have little doubt that Guérin's plate represents a female from the Malay Peninsula, as I have one from Nias Island which almost exactly agrees with it.

Doherty took two in the Dhansiri valley of Assam, a single specimen at the foot of the Karen Hills, and a pair at Perak, which agree with others from Mergui, Nias, and Sumatra.

RHINOPALPA VASUKI.

Rhinopalpa vasuki, de Nicév. Butt. Ind. ii. p. 247.
Yoma vasuki, Doherty.

I received several pairs of this species from Mr. Doherty, taken near Momeit in Upper Burmah. As they are rather variable I should hardly have seen sufficient reason myself to separate it from *R. sabina*, Cram., which is found in Java and Amboyna; but as I have but one specimen of the latter for comparison, and Mr. Doherty knew both species better than I do, I have followed him in treating it as distinct. His remarks already given (above p. 258) should be noted.

LIBYTHEA NARINA.

Libythea narina, Godt. Enc. Meth. ix. p. 171 (1819).
Libythea rohini, Marsh. J. A. S. B. xlix. pt. ii. p. 248 (1880); de Nicév. Journ. Bomb. Nat. Hist. Soc. 1890, p. 208; Butt. Ind. ii. p. 303, t. xxiv. 114 (♀).

Doherty sent two specimens of this taken in the Dhansiri valley of Upper Assam in June 1889, and found it common near Momeit in Upper Burmah in June 1890, at about 2000 feet.

It agrees very fairly with specimens from Celebes and Amboina in Mr. Godman's collection, which confirms the identification made by de Nicéville, and cited above. There is some variation in the size and colour of the spots and band above and of the markings beneath, but the species is perfectly distinct from either of the others found in India.

ARASCHNIA PRORSOIDES, n. sp. (Plate XXVII. figs. 5 ♂, 6 ♀.)

Vanessa prorsoides, Blanch. Comptes Rend. Acad. Sci. lxxii. p. 810 (sine descr.) (1871).

This is one of the most interesting additions made by Mr. Doherty to the Indian fauna and was taken abundantly by him above Mao, on the Manipur side of the Naga Hills, at 6000–8000 feet elevation, in Aug.–Sept. 1889, where it was common in open ground near water; the larva feeds on a species of nettle. I identify it with Blanchard's species by a specimen taken by the Abbé David at Moupin, which I received under that name from the Paris Museum, and which agrees with numerous others taken by Mr. Pratt at Ta-tsien-lo in East Tibet.

It is nearest to the large form of *L. levana* var. *prorsa* found in Japan, but may be distinguished by the narrower and straighter white band of the hind wings, beneath by the absence of the broad chocolate outer band.

It may be described as follows:—Above most like the European form *porima*, Ochs., but has the broad band on the fore wing above in a straight line with that on the hind wing, and the outer bands paler and straighter than in European or Japanese specimens. Beneath, the general coloration and markings resemble *burejana* more than *porima*, but this species is paler than either, and has a lilac patch round the white marginal spots on both wings as in *burejana*.

In size it is constantly much larger than European and rather larger than Japanese specimens; the margin of the hind wing is also much more scalloped out between the veins.

It is perfectly distinct from *A. burejana*, of which I have a large peculiar race, or new species, from Central China.

Subfamily Nemeobiinæ.

Zemeros flegyas, var. albipunctata.

Zemeros albipunctata, Butl. Cist. Ent. i. p. 236 (1874); Dist. Rhop. Mal. p. 187, t. xviii. 12 (♀).

A local race of *Z. flegyas*, which at Perak seems fairly constant. In the Karen Hills a pale yellowish race of *Z. flegyas* is found.

Zemeros emesoides.

Zemeros emesoides, Feld. Wien. ent. Mon. iv. p. 396 (1860); Dist. Rhop. Mal. p. 188, t. xviii. figs. 3, 4.

Taken at Perak by Doherty.

Abisara neophron.

Sospita neophron, Hew. Ex. Butt. ii. *Sospita*, i. 3 (1860); Butt. Ind. ii. p. 321.

Seems common in the low country of East Pegu.

Abisara chela.

Abisara chela, de Nicév. J. A. S. B. lv. pt. ii. p. 252, t. xi. 7 (1887); Butt. Ind. ii. p. 322.

Two specimens from the Naga Hills at 3000 feet elevation agree with Sikkim examples.

Abisara savitri.

Abisara savitri, Feld. Wien. ent. Mon. iv. p. 397 (1860); Dist. Rhop. Mal. p. 189, t. xviii. fig. 5.

Taken at Perak by Doherty.

Abisara kausambi.

Abisara kausambi, Feld. Wien. ent. Mon. iv. p. 397 (1860); Dist. Rhop. Mal. p. 189, t. xviii. figs. 10 ♂, 11 ♀; Butt. Ind. ii. p. 323.

Of this very variable insect, which should probably bear the name of *A. echerius*, Stoll., widely differing specimens were taken at Perak and in East Pegu; but I quite agree with de Nicéville that it is not

possible to recognize even as local races the various forms named by Moore.

ABISARA FYLLA.

Taxila fylla, Doubl. & Hew. Gen. Diurn. Lep. ii. p. 422, t. lxix. 3 ♂.
Abisara fylla, Butt. Ind. ii. p. 321.

Seems abundant in the Naga Hills, as also in East Pegu and the Bernardmyo district.

TAXILA HAQUINUS and var. FASCIATA.

Pap. haquinus, Fabr.
Abisara haquinus, Dist. Rhop. Mal. p. 190, t. xviii. 13 (♀).
Taxila fasciata, Moore, P. Z. S. 1878, p. 832, t. lii. 1 (♂); Butt. Ind. ii. p. 318.

There appear to be two forms of this, one of which, *T. fasciata*, Moore, distinguished by the absence of rufous colour on the apex of the fore wing in the male and the less rufous tint of the female, is common below the Karen Hills, and occurs also in Tenasserim. In the Malay Peninsula at Perak the form which is identified with *haquinus* (=*drupadi*, Horsf.) occurs. If no intermediate examples exist, these forms can be distinguished.

TAXILA THUISTO.

Taxila thuisto, Hew. Ex. Butt. ii. *Tax.* t. i. figs. 5, 6 (1860).
Abisara thuisto, Dist. Rhop. Mal. p. 191. figs. 51 ♂, 52 ♀.

Two forms of this also occur, of which the one found in East Pegu is distinguished from the one taken at Perak by the band across the apex of the fore wing beneath showing faintly through the deep black of the upperside.

LAXITA DAMAJANTI.

Abisara damajanti, Feld. Wien. ent. Mon. iv. p. 397 (1860); Dist. Rhop. Mal. pp. 192, 449, t. xl. figs. 10 ♂, 11 ♀.
Taxila tanita, Hew. Ex. Butt. ii. *Tax.* t. i. (1860).
Abisara tanita, Dist. Rhop. Mal. p. 192, t. xviii. fig. 14 (♀).

This lovely species, for which I adopt Butler's genus *Laxita* (*cf.* Trans. Linn. Soc., 2nd ser. Zool. i. p. 546 (1879); Butt. Ind. ii. p. 318), was taken at Perak. Distant, though he figures it under both names, gives no reasons for so doing, and I am unable to distinguish two species in the Malay Peninsula.

LAXITA TELESIA.

Taxila telesia, Hew. Ex. Butt. ii. *Tax.* t. i. 1, 2.
Laxita telesia, Butt. Ind. ii. p. 319.
Abisara telesia, Dist. Rhop. Mal. p. 449, t. xl. figs. 2 ♂, 3 ♀.

Two males of this beautiful species from Perak.

LAXITA ORPHNA, var. ?

Emesis orphna, Bdv. Sp. Gén. i. t. 21. f. 4 (1836).
Taxila orphna, Hew. Ex. Butt. ii. *Tax.* t. 1. f. 7.

Two specimens from Perak, of which one is like *E. orphna* from

Singapore; the other bears a note by Doherty as follows:—"This may be a new species. I have caught many males of *orphna*, Bdv., both in Borneo and the Malay Peninsula; they all had the band broad and equal." The bands of this specimen, however, are not more than half as broad as in *orphna* and are indented in two places on each side, so that they are half divided. It may be only an occasional variety, but in any case I would not separate it without some other specimens.

STIBOGES NYMPHIDIA.

Stiboges nymphidia, Butl. P. Z. S. 1876, p. 309, t. xxii. 1 (♀); Butt. Ind. ii. p. 316, t. xxiv. 119 (♀).

Seems common at Perak. A single female, in which the border is narrower, was taken at Momeit in Upper Burmah at about 2000 feet.

DODONA DIPŒA.

Dodona dipœa, Hew. Ex. Butt. iii. *Dod.* t. i. 3 (1865); Butt. Ind. ii. 311, t. xxiv. 116 (♂).

Taken at about 6000 feet in the Naga Hills by Doherty.

DODONA OUIDA.

Dodona ouida, Moore, P. Z. S. 1865, p. 771; Butt. Ind. ii. p. 311.

This seems to be as common in the Karen Hills as in Sikkim and the Khasias.

DODONA ADONIRA.

Dodona adonira, Hew. Ex. Butt. iii. *Dod.* t. i. 1, 2; Butt. Ind. ii. p. 312.

Occurs in the Naga Hills at 5000–6000 feet, but not commonly. A single specimen also sent from Bernardmyo.

DODONA DEODATA. (Plate XXVII. fig. 8, ♂.)

Dodona deodata, Hew. Ent. Mo. Mag. xiii. p. 151 (1876); Butt. Ind. ii. p. 312.

? *Dodona longicaudata*, de Nicév. Proc. A. S. B. 1881, p. 121; Butt. Ind. ii. 313, t. xxiv. 117 (♂).

Several specimens taken in the Karen Hills at 4000–5000 feet are intermediate between de Nicéville's figure and Hewitson's type, which is much worn and broken. I think that there is little doubt that the two names refer to one species, as the breadth of the white band is variable, the base of the wings above is not really crossed by three bands of brown, but is brown with (in some specimens) indications of the silvery stripes below, and the tails are broken off in the type of *D. deodata*; thus there remains nothing by which to separate them.

I have not, however, any Khasia specimens for comparison, but Doherty, who has seen them, considers it identical.

DODONA EGEON.

Taxila egeon, Doubl. & Hew. Gen. Diurn. Lep. ii. p. 422, t. 69. 2.
Dodona egeon, Butt. Ind. ii. p. 314.

Seems to be fairly common in the Karen Hills at 4000–5000 feet, and occurs also at Bernardmyo. The female is undescribed, and differs considerably from the male in having the yellow markings paler and much more diffused. I have females also from Kulu and Sikkim, which are somewhat darker than these.

EXPLANATION OF PLATE XXVII.

Fig. 1. *Ypthima methora*, Hew., ♂, p. 267.
2. *Ypthima narasingha*, Hew., ♀, p. 268.
3. *Mycalesis dohertyi*, n. sp., ♂, p. 261.
4. *Mycalesis dohertyi*, n. sp., ♀, p. 261.
5. *Araschnia prorsoides*, Blanch., ♂, p. 285.
6. *Araschnia prorsoides*, Blanch., ♀, p. 285.
7. *Neurosigma doubledayi*, var. ?, ♂, p. 277.
8. *Dodona deodata*, Hew., ♂, p. 288.

2. Notes on the Birds of the Phœnix Islands (Pacific Ocean). By J. J. LISTER, M.A., F.Z.S.

[Received April 2, 1891.]

The Phœnix Islands are a scattered group of low coral islands lying far out in the South Pacific Ocean, extending from 1° north of the Equator to nearly 5° south of it. They are within 10° to the east of the 180th parallel, which divides east longitude from west.

There are eight islands south of the equator, viz.:—Sydney, Phœnix, Canton or Mary, Hull, Enderbury, Birnie, M'Kean, and Gardner Islands, and two outliers of the group to the north of it—Howland and Baker Islands.

Situated in the dry, comparatively rainless belt which extends some degrees on either side of the Equator, they are uninhabited desolate places only frequented by sea-birds, which resort to them in innumerable multitudes for nesting [1].

The notices of birds of this group with which I am acquainted are the following:—References to some of the islands as localities in Cassin's edition of the 'United States Exploring Expedition, Mammalogy and Ornithology,' and in the 'Fauna Centralpolynesiens' of Finsch and Hartlaub; a description by Canon Tristram of an apparently new species of Duck (*Dafila modesta*, Tristram), and mention of other birds collected by Mr. Arundel in Sydney

[1] Of late years the islands have been turned to account as a source of guano. An interesting general description of these and other guano islands was read by Mr. J. T. Arundel, F.R.G.S., before the Geographical Society of the Pacific, in San Francisco. It was reprinted in the 'New Zealand Herald,' July 5 and 12, 1890. See also J. D. Hague, "On the Guano Islands of the Pacific Ocean" ('Silliman's Journal,' xxxiv. 1862, pp. 224–243).