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Note on Eumenes Conica, Fabr., and Megachile Disjuncta, Fabr., and Their Parasites Chrysis Funscipennis Brulle, and Parevaspis Abdominalis, Smith

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EDITED BY
H. M. PIPSON, C.M.Z.S.

AND
W. S. MILLARD.

VOL. XII.

*Consisting of Five Parts and containing
Forty-one Plates and Twenty-six Woodcuts.*

Dates of Publication.

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Bombay:

PRINTED AT THE "TIMES OF INDIA STEAM PRESS.

0 fathoms, viz., 41 deg. F. The
ed state of affairs is that the
due to a slow influx of the cold
ed of the ocean from the polar
r be encountered by this moving
o the movement, or force the
g to the depth of the top of the
ly the state of affairs in the
annel affording communication
f Bengal is the channel between
this channel is incomplete, but
is probably a ridge uniting the
exceeding 900 fathoms, roughly,
00 fathoms within the enclosed
of 41° F.—the temperature of
y of Bengal; while outside, in
radually diminishes as the depth

ator at once left for Moulmein.
ver was of an arduous descrip-
g paddy fields to the low hills
the river. Moulmein itself is
om the river. On a bright cold-
e beauty of the green foliage,
spires of pagodas overtopping
hadowing the long struggling
e high hills close to the borders
e fertile Bruce Island with its
hills rising to the eastwards of
as they rise straight out of the
a height of a thousand or more
a, and are often locally celebrat-
with stalactites and stalag-
aces of enormous numbers of
ld. A similar hill to these near
ally has a small stream running
f these limestone hills lives the
by English sportsmen although
le lying at anchor off the town
s brought down quantities of
ere were taken from the paddle
ssengers on the drift-wood and
ur paddle floats. On another

morning a leopard was discovered by the coolies, when they went to work, on a lighter just ahead of the ship. They attacked and drove it overboard, and followed it up in a boat, making numerous very badly aimed blows at its bobbing head. Up the R. I. M. S. *Nancoury's* anchor chain it tried to scamble, but failed, swam ashore, and was shot, sinking and being carried by the strong tide below a pontoon, whence it was subsequently dragged with long poles.

The Marine Survey had the good fortune to be present in Moulmein at the time of Lord Elgin's visit, and to admire the decorations, which were of the most lavish description, and thoroughly appreciate a posture dance given by some twenty young Burmese girls in honour of the visit. The lights, the flashing jewels, the prettily shaded pale blue and pink silk dresses, the most infectious music, and the graceful and harmonious poses of the girls, altogether made up a charming picture which it will be impossible to forget.

At the mouth of the Moulmein river lies the small town of Amherst, and on the coast slightly to the south of this on several occasions a landing was effected. Here the country becomes undulating, with hills rising to a few hundred feet and densely wooded to their summits, but at their bases the trees have been cleared in places to make durian, mangosteen, and sugar-cane gardens. Unfortunately these gardens are said to be extremely unhealthy during the rainy season, but inhabitable at other times of the year. In these hills and in the scrub jungle near Amherst live large numbers of jungle fowl, barking deer, mouse-deer and pig, and a few leopards, tiger, and sambhur. They are also inhabited by more undesirable animals in the form of minute ticks, so small and so numerous that one's hands often look as if peppered; by large numbers of both the large dark green and the small straw-coloured scorpions; and by many snakes—the last, fortunately, usually of a harmless species. One of the most vividly coloured of the Indian snakes, *Coluber orycephalus*, was caught here, and afterwards deposited in the Calcutta Zoological Gardens, where it is probably still being exhibited.

(The above appeared in the *Times of India* on 30th May, 1899.)

NO. XIX.—NOTE ON *EUMENES CONICA*, FABR, AND *MEGACHILE DISJUNCTA*, FABR, AND THEIR PARASITES
CHRYISIS FUSCIPENNIS, BRULLE, AND *PAREVASPIDES ABDOMINALIS*, SMITH.

Mr. Aitken's note on "A Wasp and a Fly" in Vol. XII, No. 2 of the Magazine, recalls some observations I made some eight or nine years ago on the abovementioned Fossorial wasp and bee and their parasites. I noted down the details of the incidents at the time and here they are:—

Moulmein, April 24th.—Noticed a half-finished mud cell of *Eumenes* being made on the woodwork of a window in my study. While examining it closely with a lens, the wasp returned with a pellet of mud and buzzed rather angrily round my head. I moved away a little and watched her. After

flying round for a while she alighted close to the half-finished cell and walking up to it stuck the mud she was carrying on to one side of it and proceeded to work it into the wall of the cell kneading it, so far as I could see without approaching too close and frightening her, with both jaws and forelegs. Then she retreated a little as if to take a view of her work, and in a few seconds flew away to return with more mud. It was easy enough to recognize the species, it was *E. conica*, the commonest of the Fossorial wasps in Burma. I watched for nearly an hour while the nest was being completed. It then formed the half of a hemispherical shell, somewhat smaller in circumference than a rupee, with a circular opening at the top. When the cell walls were so far finished the wasp flew off and was absent fully half an hour. During her absence one of those metallic green cuckoo wasps, subsequently identified as *Chrysis fuscipennis* alighted near the nest, approached it cautiously, examined it quickly, both inside and out, and then retreated behind the edge of the wooden framework where it remained motionless, apparently on the watch. Presently the *Eumenes* returned carrying a green caterpillar. She alighted on the window and after some preliminary inspection of her nest, and hauling and dragging of the caterpillar, crammed it into the cell. She took quite a long time over it, with sometimes, her head and thorax inside, and sometimes her abdomen. All this time the Cuckoo-wasp remained perfectly still watching. As soon, however, as the *Eumenes* had flown away, the *Chrysis* approached the nest again, slowly and apparently with great caution. She walked round it then up the side, and peeped in, withdrew her head, seemed to give a final good look all round and popped in. She could not have been more than a few seconds inside, when a loud buz announced the return of the rightful owner of the nest. I had barely time to glance at the *Eumenes*, which alighted, as before, on the window, when my attention was attracted by the darting out of the cell of the burglarious Cuckoo-wasp. The *Eumenes* saw it, too, and, with what sounded very like an angry buz, dashed after it in pursuit, overtook it, and then the two dropped to the ground. I ran out but I had to go round by a veranda too high to jump, to the steps, and by the time I arrived on the ground the fight was over and the *Eumenes* had disappeared. The *Chrysis*, however, lay on the ground crippled and crawling painfully with all its wings torn off close to the roots. I have the specimen and one torn forewing which was all I could find, in my collection still. Returning to the nest, I sat and worked at a table near it for more than an hour, and inspected it at intervals through that day, but the *Eumenes* never returned, and next morning the cell was still open and unsealed. I tried to take it off with care but it broke to pieces. Inside was one green caterpillar, and two semi-transparent white eggs, one much smaller than the other; of these eggs the larger one was stuck against the wall of the cell, the other deposited on the caterpillar. I may mention that the caterpillar was quite dead.

Kawlkareik, June 11th.—A bundle in the corner of the centre room bee (*Megachile disjuncta*, Fabr.) the last two hours, little circular bush in the garden. Of course of one of the bamboos aforesaid load to the corner and saw her dis the outermost bamboos in the approached to see whether I co corner I noticed another bee (*Pa* identical bamboo in which the l the bamboo, looked in at the hollow when the *Megachile* returned, I v sight for some time, then put her and again retreated. Presently, material as before, and alighted on preparatory to descending inside. perhaps to let an insect slip thro not sufficiently large for the *Pareu* the former's huge head. As I sai hollow in the bamboo. Sudden knocked out of her hold, and she It was Mrs. *Parevaspis*, of course, head out of the hollow. And ther widely expanded and threatened. aback, buzzed around angrily, but dispossess the intruder of her nes this condition, then I was obliged the afternoon the *Megachile* had what became of the *Parevaspis* o day the *Megachile* had finished I kept it for over six months, the hollow, I found ants had got

CAMP MAYMYO, UPPER BURMA

No. XX.

Chital.—On the 24th of March when a spotted stag with fairly of a nullah. I shot the animal; dead into a pool of water. I w had fallen off, and were lying

to the half-finished cell and trying on to one side of it and reading it, so far as I could seeing her, with both jaws and like a view of her work, and in mud. It was easy enough to monest of the Possorial wasps while the nest was being comical shell, somewhat smaller ining at the top. When the cell was absent fully half an hour, n cuckoo wasps, subsequently the nest, approached it cautiously, and then retreated behind where it remained motionless, enes returned carrying a green and after some preliminary ing of the caterpillar, crammed ver it, with sometimes, her head n. All this time the Cuckoo s soon, however, as the *Eumenes* nest again, slowly and apparently n up the side, and peeped in, d look all round and popped in, seconds inside, when a loud buzz of the nest. I had barely time efore, on the window, when my f the cell of the burglarious with what sounded very like an it, and then the two dropped to by a veranda too high to jump, ground the fight was over and, however, lay on the ground ngs torn off close to the roots. g which was all I could find, in at and worked at a table near it ervals through that day, but ning the cell was still open and it broke to pieces. Inside was arent white eggs, one much larger one was stuck against e caterpillar. I may mention

Kawkaik, June 11th.—A bundle of bamboos, collected as specimens, stands in the corner of the centre room of the Forest bungalow. A leaf-cutter bee (*Megachile disjuncta*, Fabr.) has been industriously carrying in, for the last two hours, little circular pieces culled from the leaves of a rose bush in the garden. Of course she is constructing a nest in the hollow end of one of the bamboos aforesaid. I watched her as she flew in with her load to the corner and saw her disappear down the hollow end of one of the outermost bamboos in the bundle. When she flew out again, I approached to see whether I could examine the nest. As I neared the corner I noticed another bee (*Parevaspis abdominalis*, Smith) walking up the identical bamboo in which the *Megachile* had her nest. It scrambled up the bamboo, looked in at the hollow and disappeared. Expecting ructions when the *Megachile* returned, I watched Mrs. *Parevaspis* remained out of sight for some time, then put her great broad head out, gave a look round and again retreated. Presently, the *Megachile* returned carrying building material as before, and alighted on the very edge of the hollow in the bamboo preparatory to descending inside. The hollow was small, just big enough perhaps to let an insect slip through, about twice the *Megachile's* size, but not sufficiently large for the *Parevaspis* to get past the *Megachile*, because of the former's huge head. As I said the *Megachile* halted on the edge of the hollow in the bamboo. Suddenly the bit of leaf she was carrying was knocked out of her hold, and she herself pushed off the edge of the bamboo. It was Mrs. *Parevaspis*, of course, who had rushed up and thrust her great head out of the hollow. And there she stayed on the defensive with her jaws widely expanded and threatened. Poor *Megachile*, she seemed greatly taken aback, buzzed around angrily, but could not make up her mind to attack and dispossess the intruder of her nest. For about an hour affairs remained in this condition, then I was obliged to go out on work, and when I returned in the afternoon the *Megachile* had peaceful possession of her nest again, but what became of the *Parevaspis* or how she was ejected I have no idea. Next day the *Megachile* had finished her nest and I took the bamboo as it stood. I kept it for over six months, but nothing hatched out, and when I opened the hollow, I found ants had got at the nest and entirely destroyed it.

C. T. BINGHAM, COLONEL,
Conservator of Forests.

CAMP MAYMYO, UPPER BURMA, 24th May, 1899.

No. XX.—JUNGLE NOTES.

Chital.—On the 24th of March last I had just beaten out and killed a tiger when a spotted stag with fairly good antlers came galloping along the bank of a nullah. I shot the animal as it was descending the bank, and it dropped dead into a pool of water. I was then surprised to find that both the horns had fallen off, and were lying beside the dead stag. This would not have

been remarkable but for the fact that at this season of the year the horns of the chital are just mature, and not ready for casting.

Although as a rule a shy animal, the spotted deer is sometimes very bold, or rather, I should say perhaps, foolish. A few days before the occurrence described above I came across a herd of chital, and at once sat down to try and distinguish the stag. The herd, however, consisted entirely of hinds, one of which saw me, and came walking in my direction, gazing intently, and barking at intervals, until within about 40 yards. I then moved on, and the herd followed me for some time, some of its members barking continually. No wonder these animals fall an easy prey to tigers.

Bison.—I have frequently heard it said, and seen it stated in books, that bison never feed in cultivation. I know a village, however, surrounded by jungle, in the vicinity of which is a considerable area of rice fields, where bison are in the habit of feeding every night during the hot weather. The Gond shikaris take advantage of this and pot the animals from trees on moonlight nights, or when they are leaving the cultivation at dawn. Last year an old Gond shikari whom I used to employ was killed by a bison which he had wounded in this manner. I have always found the bison to be a very mild animal, but this old Gond had had a different experience, for he had been tossed by a wounded bull some years before, and I saw the scars of the injuries he had received on that occasion. Another Gond, a veritable wild man of the woods who was with me this year, told me of an encounter he had seen between a tiger and a great solitary bull bison, in which the latter managed to beat off his antagonist. In a similar encounter, of which I heard some years ago, the bison, a very large bull whose head was shown to me, was killed and partly devoured. His assailant, however, did not escape scot-free, for when subsequently killed by a friend of mine (who, by the way, met him one morning, and shot him with a single-barrelled '450 express rifle) he was found to have sustained considerable injuries about the head, and I think had one eye gouged out.

Wild Dogs.—These pests appear to be growing more numerous every year. This year two of my buffaloes, tied up for tigers, were killed by them. On another occasion one of my buffaloes was killed by a panther. After passing the kill next morning, my shikaries saw the panther going off over the hills with a pack of about thirty wild dogs in full cry after him. In the evening I found a wild dog with a small pup feeding on the carcase of the buffalo, but unfortunately made a bad shot and missed the vermin. The same pack of dogs had cleared the whole valley of game, including three tigers which I had hoped to have brought to bag. They kept to the lower end of the valley where the tigers had previously been living and not a mark was to be found, but after some days the biggest of the tigers fortunately came down to the head of the valley, eight miles off, beyond the range of the red dogs, and there I shot him.

Another year I shall certainly take poison some of these destructive animals of deer, but drive away game of all

JALNA, 31st May, 1899.

No. XXI.—FOOD OF THE

On the 26th March, 1898, while working one of the coolies brought me a fair specimen. He said that he had watched it killing the specimen and the contents of a fine Banded-Krait (*Bungarus fasciatus*) feeding on a grass snake which was

Measurements of the three snakes were

The Hamadryad ...

The Krait ...

The Grass Snake ...

SILCHAR, May, 1899.

No. XXII.—NESTING OF

There are few that have had the good Eagle (*Neopus malaiensis*) and its nest authenticated as far as I know.

Davison and Margan, both ardent naturalists, this fairly common bird on the Nilgiris. I found a nest of this Eagle in the Wynaad early

It would be interesting to know where the eggs have been taken.

LAKON, SIAM, 20th May, 1899.

No. XXIII.—A

On the 4th February last when I was in Naung, with my Kareen interpreter, we sailed from a very high tree on the opposite side.

I have related this fact to men in Siam, but it is astonishing to say I find no record of a flying snake, so that the "flying" lizards (*Draco*) and flying snake?

LAKON, SIAM, 20th May, 1899.