

and style, and awned with unequal lengths of subule and column and stigma and style.

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September 6, 1935.

¹ *Curr. Sci.*, 1935, 3, 540.

² *Univ. Nebraska Studies*, 1906, 6, 203.

³ *Madras Agric. J.*, 1934, 22, 16.

Diurnal Insects Attracted to Light.

OUR knowledge of the activities at night of diurnal insects is still meagre, but among the butterflies, the Hesperiidæ, Pieridæ and Satyridæ are already known to occur at night. It is, therefore, interesting to record here for the first time the attraction to powerful artificial light of the Lycænid, *Zizeeria otis otis* F., which Dr. Rao recently collected in Aberdeen, Port Blair, South Andamans.

In this case all the seven specimens (4 ♂s and 3 ♀s) were attracted, along with other insects, to the light of an 'Aida' kerosene stormproof lantern in the bungalow between 7 and 8 P.M. on a single night last July. The bungalow is about a furlong from the foreshore of the sea and 60 feet above sea-level. The brilliancy of the light of the lantern is 350 candle power. The vegetation surrounding the bungalow consists of grass and low herbage interspersed with a few trees. The weather was not unusual for the particular time of the year, and there was no strong breeze blowing at the time.

From the literature available it is evident that the Lycænidæ are exclusively diurnal and fond of sunshine.¹ Seitz² comments upon their peculiar habit in tropical countries of disappearing almost at once when the sky becomes overcast with clouds. He also remarks that he has never seen any coming to the light of a lantern at night. This may perhaps have been due to the low intensity of the light. The fondness of *Z. otis otis* F., for bright light, therefore, proves it to be positively heliophilous. *Zizeeria otis otis* F., is a small low-flying butterfly which frequents grass, being found commonly wherever it occurs. The species is recorded from North India, Burma, Andamans, and Car and Central Nicobars.

I am grateful to Dr. H. S. Rao, Assistant Superintendent, Zoological Survey of India, Calcutta, for his notes on the nature of the environment, the weather and time of occurrence.

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¹ Dr. Rao informs me that he has observed on occasions these Lycænidæ hovering over the hedge-plants around the bungalow at mid-day.

² Seitz, A., *The Macro-Lepidoptera of the World (Indo-Australian Rhopalocera)*, Lycænidæ, 1915, 9, 799.

On Two New Halcampactid Actiniaria from Madras Brackish Waters.

THE Actiniaria inhabiting the brackish waters of Madras include two new acontiated Athenaria¹ belonging to the family Halcampactidæ,² showing relationships to *Pelocætes exul* Annand. and *Phytocætes gangeticus* Annand., described by the late Dr. Annandale from the Chilka Lake and the Gangetic delta.^{3,4} In a note, Dr. H. S. Rao⁵ records the occurrence of some brackish water Actinians at Madras; but as no detailed study was made, he did not commit himself to any definite view about systematic position.

The two anemones differ from all the other known Halcampactids and they will be described elsewhere as two new forms. Both the Actinians have long vermiform and fairly differentiated columns, and physal-like bases without basilar muscles. They are burrowing forms found living in the shallow mud flats on the fringes of the Adyar backwater. The distinction of the mesenteries into microcnemes and macrocnemes is perfect in both cases.⁶

The first is a long pink anemone characterised by a curious atypical arrangement of the tentacles and acontia. Here the tentacular arrangement is a deviation from that observed in typical Actiniaria, caused by an interchange of the two final cycles accompanied by an undue development of the tentacles of the fourth cycle, which by their abnormal position assume a false exocœlic appearance. Contrary to what is observed in other Actiniaria, each macrocneme of this anemone bears a very large number of acontia and the latter show very peculiar variations in regard to their

attachment to the macrocnemes. An interesting correlation between the degree of development of the acontia and the probable order of succession of the macrocnemes has been observed as a result of the examination of a large number of specimens.

The second form is a beautiful, orange-striped anemone with black marks at the bases of the tentacles. It is easily distinguished by the nature of the oral disc, the very prominent throat ridges which surround the mouth taking an active part in feeding. The plan of arrangement of the tentacles and acontia of this anemone does not present differences from that observed for typical Actinians. The single acontium occurring on each macrocneme is a long thick structure, which is often shot out through the cinclides.

The two anemones have more or less similar anatomical features, the differences being mainly concerned with the finer details. The nature of the base and column, the plan of mesenterial arrangement and the distribution of the nematocysts are essentially the same, and clearly show their close relationships and position in the same family. In both cases, the nematocysts of the acontia include both penicilli and spirulæ.⁷

Like other brackish water anemones known from the east coast of India,^{3,4} these are permanent inhabitants of the brackish water and show several adaptations in correlation to their peculiar environs. The occurrence of a large number of parasitic (or commensal?) Copepods in the coelenteron of the specimens is noteworthy.

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July 25, 1935.

¹ Carlgren, O., *Actinaria, The Danish Ingolf Expedition*, 1921, 5, pt. 9, 1-241.

² Carlgren, O., *Ark. Zool.*, Stockholm, 1925, Bd. 17 a, 1-21.

³ Annandale, N., *Rev. Ind. Mus.*, 1907, 1, 47-74.

⁴ Annandale, N., *Mem. Ind. Mus.*, 1915, 5, 65-114.

⁵ Rao, H. S., *Jour. Proc. As. Soc. Bengal*, 1925, 20, No. 6, 339-347.

⁶ Stephenson, T. A., *Quart. Jour. Micr. Sci.*, 1920, 64, 425-574.

⁷ *Jour. Mar. Biol. Assn., U. K.*, 1929, 16, 173-200.

Sexual Dimorphism in the Indian House-Gecko, *Hemidactylus flaviviridis*, Rüppel.

WITH reference to sexual dimorphism in *Hemidactylus flaviviridis*, Rüppel, Bains Parshad¹ says: "The male is much smaller than the female and is much more active and agile, in build also it is much slighter and can be easily distinguished even from a distance." Lydekker,² on the other hand, says that "among geckos the males are generally larger".

An examination of more than three hundred preserved specimens and actual observations on live individuals do not confirm any one of these statements. The size appears to depend not on sex, but almost entirely on age and on the amount of food obtained by the individual. Quite a number of males in my collection measure 6-6.3 inches from snout to end of the original tail, the distance from snout to vent being in many cases 3 inches or more. This compares well with the maximum size recorded by Boulenger³ for this species, "from snout to vent 3 inches; tail 3.2 inches;" and with that mentioned by Malcolm A. Smith,⁴ "from snout to vent 90; tail 90 mm." I have also got a great many mature female specimens of this species which are far short of the maximum size.

As for activity, I have not been able to make out any difference between the two sexes. The gravid females probably are just a little less agile than the males, but we cannot be sure of this distinction.

It appears that the only reliable method of sex identification externally is to look for the femoral pores (present only in the male⁵) and for the postanal bones and sacs. The latter structures, first mentioned by Noble⁶ and later by Malcolm A. Smith,⁷ are peculiar to Geckonidæ. "The sac is present in both sexes, but the bone only in the male."⁸ In the female *Hemidactylus*, the postanal sacs are much smaller and open by minute slit-like apertures generally within the posterior lip of the vent. In the male they are quite prominent and have their outer rims more or less protruded owing to the presence of a curved bone inside. As Smith⁹ points out, the bone "can be recognised, after a little experience, without dissection by inserting the point of a needle into the opening of the sac and lifting the bone upwards."

Besides the foregoing differences, I might also point out (I hope for the first time in