in his paper on the caves of the Malay Peninsula[1] as follows : " Diptera.— A very small fly (family Chironomidae, gen. et sp. nov., closely allied to *Ceratopogon*) was exceedingly abundant in places where bats were plentiful, so much so as to be quite a nuisance. It apparently bred in the bat guano." The bats referred to were mostly fruit-bats of the genus *Cynopterus*.

A. cavernarum is closely allied to, and may perhaps be identical with *A. rhynchops* (Schiner) insufficiently described from Sydney, N. S. W. It is also very nearly related to *A. flavellus* Kieffer,[2] and *A. jacobsoni* (de Meijere) ; from the former it differs in its black flagellum and conspi cuously darkened abdomen, and from the latter in its larger size and relatively longer second hind tarsal segment, that of *A. jacobsoni* being according to de Meijere only one-third as long as the first. It is noteworthy that both *A. flavellus* and *A. jacobsoni* have been recorded as settling in large numbers on the leaves of trees.

III. DOLICHOPODIDAE.

By C. G. LAMB, *M.A., D.Sc.*

Hercostomus Loew.

Hercostomus praetentans, sp. nov.

The following description is based on a single male specimen which was captured by Dr. S. Kemp and Mr. B. Chopra in the Siju Cave in the Garo Hills, Assam, about 450 feet from the entrance. Whether it is a true cavernicolous species or not must await further investigation ; on the one hand the chitin is well developed though it is of a somewhat abnormal colour, all very dark bluish black, and all the ocular apparatus is fully present ; on the other hand the remarkably large, pale ocelli, the excessive size of the chaetotaxic protecting bristles, and the remarkable elongate front tarsi provided with long hairs, are possible developments correlated with cave-dwelling habits, at least for part of the life of the insect.

The systematic position of the species is not very satisfactory. Its main characters lead to *Hercostomus* (*sens. lat.*), and in any case it is a member of the complex near that genus and *Hypophyllus*. It possesses, however, certain structural peculiarities that would fully warrant the erection of a new genus should related forms ever come to hand. The face is very different from that of a normal *Hercostomus* (fig. 1) ; it is very narrow and almost quite parallel, and is entirely silvery : the frons is also narrow. Aldrich describes a *H. latipes* from St. Vincent, (*Trans. Ent. Soc. London*, 1896, p. 311, see also Becker, Dipterolog. Studien, *Zool. Bot. Gesell. Wien.*, XIII, 1921, p. 33) in which the face is abnormally narrowed, though nothing like so much as in the present species. The frons is also unusual inasmuch as the area from just in front of the median ocellus to just beyond the antennal bases is very deeply sunk, forming a sort of crevasse from the base of which spring

[1] *Rept. Brit. Ass., Bristol* 1898, sec. C, p. 580.

[2] Dr. S. W. Kemp has kindly sent me specimens of *A. flavellus* for comparison with the new species.

the long flattened first antennal joints. In the present specimen some of this sinking is no doubt due to the somewhat shrivelled condition of the head, an accident so common, unfortunately, in the family. But this can only account for a somewhat exaggerated narrowing of the crevasse, as the general structure of the frons and the exceptional form of antennal joint are only consistent with a deeply furrowed frons. In *Hercostomus* (*Gymnopternus*) *chalybeus* Wied. there is an approach to the curious triangular plate-like first joint, and that species has also a somewhat narrow and silvery frons, though it is not at all depressed. Another remarkable character is the form of the ocelli; these are very large, but almost coplanar with the rest of the surface, not rounded as usual; they are very translucent, and in spite of their size, the hind ones are very difficult to see, they are inserted well over the vertical ridge so that they look more or less backward.

The extraordinarily differentiated front tarsi (fig. 2) are quite exceptional in the genus: they certainly give one the impression of being tactile organs. In Aldrich's *H. latipes* we also find enlarged front tarsal joints, but they are the second, third and fourth. The remarkable front foot might denote relationship to *Hypophyllus*, but the hypopygium is quite of the *Hercostomus* character. It is sessile (fig. 3) and elongate, and has very small terminal lamellae, which agree with the description of those of *H. latipes*: greatly reduced lamellae occur also in *H. germanus* Wied. The adherent 8th segment is here very inconspicuous, being completely fused on to the rest of the hood, and having practically the same texture. The most aberrant character of the abdomen is the excessive elongation of the last terminal segment, which forms a projecting tail; this feature is almost, if not quite, unique in the family.

Description.

Head.—In top view the eyes are rounded in profile and are clothed with dense pale stubbly hairs. The frons is parallel-sided from the level of the front ocellus to that of the antennæ, and the whole, including the eye-margins, is covered with brilliant silvery dust; that portion of the frons has its base deeply sunk, thus forming a longitudinal crevasse from the base of which arise the antennæ. The vertical ridge is more blackish silvery: the ocellar bristles are very stout and long, and are inserted almost on the vertical ridge itself. The single pair of vertical bristles is strongly crossed, inserted a little down the back of the head, and very close to the eye-margins. The front ocellus is very large, nearly flat, and of a pale glassy brown colour; it occupies nearly half the breadth of the frons. The hind ocelli are also large and flat, but are singularly inconspicuous;

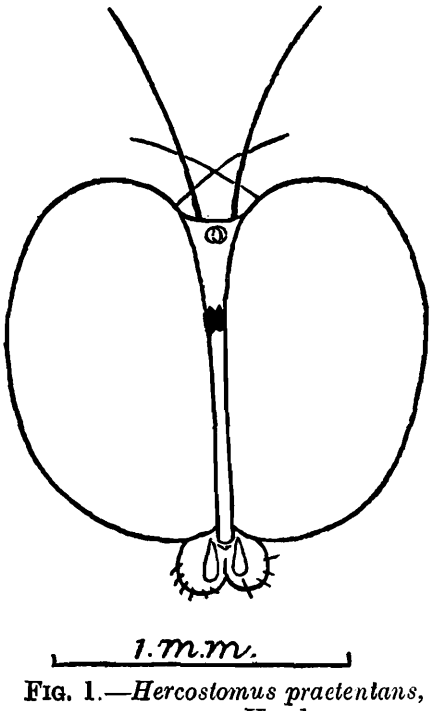

Fig. 1.—*Hercostomus praetentans*, sp. nov. Head.

they lie very near the eye-margins between the bases of the oceller and vertical bristles. The antennae are best seen in this top view;

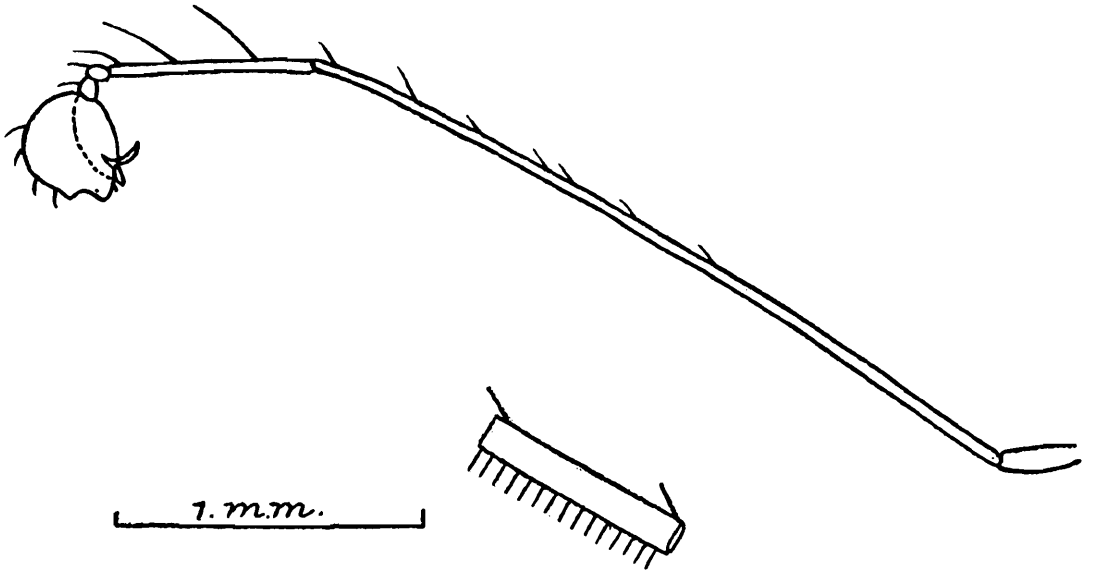

FIG. 2. *Hercostomus praetentans*, sp. nov. Front tarsus.

the first joint (as usual, bristled above) is long and much flattened, about one-third of it is hidden in the crevasse; it is black except for the upper surface adjacent to the second joint, and the small and narrow thumb; these are orange. The second joint is of normal form and bristling, it clasps the third joint, the inner lobe being much larger than the outer; in colour it is blackish orange, the inner clasp being more orange. The third joint is as figured, it is blackened and covered with pale pollen, and is densely though shortly pubescent at the tip. The arista has a stout black basal joint, and a dark orange flagellum, which tapers quite uniformly from base to tip; it is pubescent, and the pubescence is much more conspicuous on the tapered distal portion. The front view of the head is shown in a somewhat diagrammatic manner in fig. 1, the exact outline cannot be given owing to shrinkage, which has caused the eye-margins to curl over and closely fit on to the thorax, so that in side-view the post-ocular fringe is quite invisible. The palpi are bright orange with several black terminal bristles; the proboscis is also yellow, but its edge is bordered with a dark band on which is a uniform belt of stout dark bristles.

Thorax.—The dorsum is entirely bluish black but is lightly dusted; this dust is absent on a well defined narrow line between the acrostichal bristles, which line is very conspicuous in front. The acrostichal bristles are in five well marked pairs, with two smaller more hair-like pairs in front. Including the prescutellars there are six pairs of dorsocentrals which are all collinear, lying on two somewhat divergent straight lines. The pleuron is coloured like the dorsum, but is duller and more dusted, it is also narrowly splashed with orange along the sutures, while the actual humerus and the spiracle are all orange. Similar ill-defined orange patches occur on the thorax at the wing insertions. The smooth matt scutellum is the same in colour as the dorsum; its margin follows a curve nearly parallel to the thoracic boundary, and it bears the usual large bristle-pair at the outer angles,

together with a small hair between each bristle and the base. The thoracic chaetotaxy is normal, but all the bristles are very strongly developed.

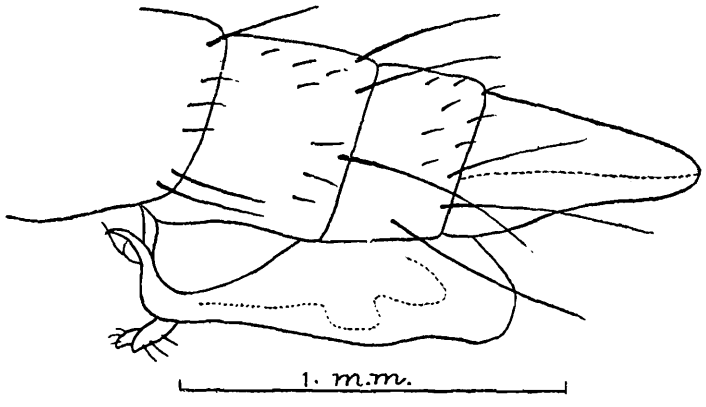

FIG. 3.—*Hercostomus praetentans*, sp. nov. Terminal segments of abdomen.

The *wings* (fig. 5) are quite glassy with pale brown veins ; there is a distinct costal swelling, and a knob at the beginning of the third vein ; the costa has black bristles, and the hind margin of the wing is provided with unusually long ciliation. The squama is bright yellow with long dark brown fringes and a few extra shorter hairs : the fringes are not spread out fan-wise, but form brushes of nearly parallel hairs. The haltere is entirely pale yellow.

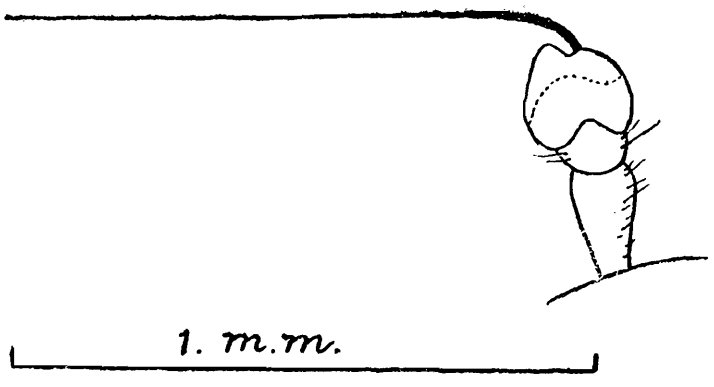

FIG. 4.—*Hercostomus praetentans*, sp. nov. Antenna.

The *legs*, including the front coxa, are entirely yellow except as follows ; mid and hind coxa slightly suffused with the pleural colour ; last four joints of mid tarsus browned ; the hind femur with a conspicuous blacked spot on the tip ; the end third of hind tibia and the whole of the tarsus blackened. The chaetotaxy is not very strong ; the front tarsus is shown in fig. 2, it is provided with a perfectly even inferior pectination as shown in the small figure ; the front coxa has about six terminal bristles ; the tibia and femur are about equal in length, each being about two-thirds of the length of the first tarsal joint, while the coxa is about two-thirds the length of the femur. In the middle legs, the coxa has a single outside bristle ; the femur has a hind pre-apical remote from the tip the tibia has three anterior-superior and two posterior-superior bristles, and a very strongly developed terminal crown ; the first tarsal joint is about as long as all the others taken together, and the whole

tarsus carries a long regular bristly pectination beneath. In the hind legs the coxa has one outer bristle ; the femur carries a stout anterior pre-apical, inserted about one-fifth of the total length from the tip ; the tibia has three anterior-superior bristles on its upper half, and four equally spaced posterior superior bristles, the last bristle being the sole representative of the terminal crown ; the first tarsal joint is about half the length of the second, which is somewhat longer than the remaining three taken together.

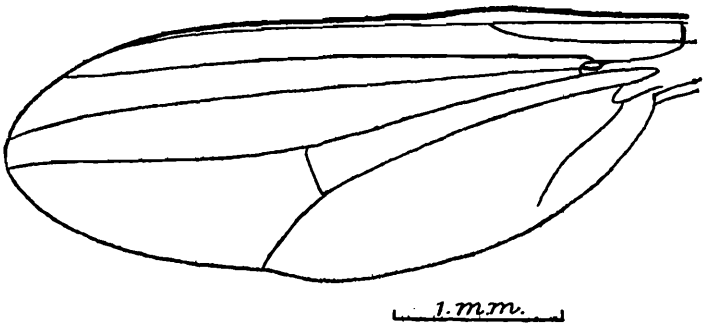

FIG. 5.—*Hercostomus praetentans*, sp. nov. Wing.

The *abdomen* is bluish black like the thorax and is also lightly pollinated with silvery dust. The marginal bristles are very long, completely overlapping to the next segment ; the sides of the basal segment carry conspicuous outstanding bristles. The remarkable terminal segment is shown in fig. 3. The sessile hypopygium is not very highly chitinised ; it is brownish in colour, more yellow distally. The tiny terminal lamellae are yellow with a few black bristly hairs ; the hooked inner appendages are also yellow.

Size 5½ mm. Wing 3½ mm.

Type in the Indian Museum.

IV NYCTERIBIIDAE.

By Major W S. PATTON, *I.M.S.*

Nycteribia (Acrocholidia) euxesta (Speiser).

Specimens of this species were found on all the bats obtained in the cave : on *Cynopterus sphinx gangeticus* at 400-500 feet from the entrance, on *Rhinolophus subbadius*, shot at the entrance, and on *Hipposideros lankadiva*, which ranges from 800 to 3,600 feet from the entrance. The species has been recorded from Burma and Ceylon on *Hipposideros armiger* and *H. lankadiva*.

Eucampsipoda hyrtli Kolenati.

Many specimens from *Cynopterus sphinx gangeticus* at 400-500 feet from the entrance. This is a widely distributed species and has been recorded from Africa, the Comoro Islands, Sumatra, Burma and Ceylon, from *Tylonycteris pachypus*, *Rousettus seminidus* and *R. aegyptiacus*.

A Streblid also found on the *Cynopterus* has not been identified.