

SOME ASIATIC SPECIMENS OF *APUS*.

By ROBERT GURNEY.

The records of the occurrence of the genus *Apus* in Asia are few and were summarised by Kemp in 1911.¹ I think it therefore worth while to publish the following notes on a small collection of *Apus* kindly submitted to me by Dr. Bains Prashad from the collection of the Indian Museum. They belong to three species.

***Apus cancriformis* Schäffer.**

The collection includes two small immature specimens taken in Kashmir (27-10-13) by Mr. F. Smith and 28 adult or nearly adult specimens from paddy fields about 8 miles from Gandarbar, Kashmir (Kashmir Survey St. 10-25-6-21).

TABLE 1.

Apus cancriformis Schäffer, Kashmir, 25-6-21.

	Length of shield.	Width.	Total length.	Furcal rami.	Somites exposed.	Legless somites.	Denticles on sulcus.	Total number of somites.
Female	10.5 mm.	8	..	broken	14	7	38	36
Do.	17	12	..	17	15	7	34	..
Do.	18	11	..	18	16	7	36	..
Do.	13	8	17	..	15	7	36	..
Do.	12	10	18	18	16	7	36	..

These adults are relatively small and agree in all respects with the European type. All are females and there is remarkably little variation among them. Table 1 gives the measurements of five specimens but the following notes may be added. The median ridge of the shield ends in a strong projecting tooth, and in all cases is more or less serrated posteriorly. In some cases there are 5-8 quite conspicuous tooth-like projections similar to those found in Scottish examples.² The whole, or the posterior half, of the surface of the shield is covered with minute points which are easily seen if the animal is more or less dried.

The arrangement of the spines on the telson is surprisingly regular, having regard to the variability found in European and North African

¹ *Rec. Ind. Mus.* VI, p. 356 (1911).

² Gurney, *Ann. Mag. Nat. Hist.* (9) XI, p. 498 (1923).

specimens. In all cases there is a single posterior median spine, a spine on either side of the anal sulcus and a few very small spinules in the middle line. Not more than two spines are visible dorsally at the base of the furcal rami.

Kemp (1911) has already recorded the occurrence of *A. cancriformis* in Kashmir and at Bulandshahr in the plains, and has expressed the opinion that *A. himalayanus* Packard is not distinct from it. With this opinion I fully agree.

It appears that *A. cancriformis* is a species of extremely wide range having local varieties which have led to the naming of distinct but untenable species. Its distribution has been fully set out by Lundblad,¹ but the following localities may now be added :—Italy (Pavia, Vercelli, Novara, Pontedera, Lecce). Cyrenaica. Morocco. Eritrea (Colosi 1923). Asia Minor (Spandl 1923).

***Apus asiaticus* Gurney.**

The specimens come from the same locality, though taken on a later occasion, as those which I have already discussed,² namely Panchgani, Bombay Presidency. The original specimens reached me in a damaged condition and this new consignment enable a few additional points to be noted.

These specimens are rather small, but are mature, and the males, which outnumber the females, are readily separable. In the female the colour is deep green while the males are paler in colour and tend towards a brown tinge. Whereas the shield of the female is as vaulted as it is in *A. cancriformis*, in the male it is much flattened. The longest flagellum of the first leg is much shorter than the shield in the female, but may reach very nearly to the end of it in the male. On the other hand the furcal rami, which show no sexual difference in the form of the spines, are longer in the male than in the female. In these specimens the number of legless somites (including telson) is 11-13 in the female and 13-14 in the male. The majority of females examined had 12 which is one more than I found in the original collection.

***Apus granarius* Lucas.**

Simon, *Ann. Soc. Entom. France* (6) VI, p. 446 (1886).

Three specimens labelled "Peking, China, 4-10-16" are somewhat puzzling. All three have been at one time dried up, consequently reliable measurements are impossible, but they are otherwise well preserved and the flagella unbroken.

Their characters may be summed up as follows :—Shield orbicular, flattened, less than half total length of body. Median ridge not projecting into sulcus. Denticles on sulcus about 50, very minute, but becoming larger towards the outer angle. Posterior ventral edge of shield denticulate.

¹ *Arkiv. f. Zoologi*, 13 (1920).

² *Ann. Mag. Nat. Hist.* (9) XIV, p. 566 (1924).

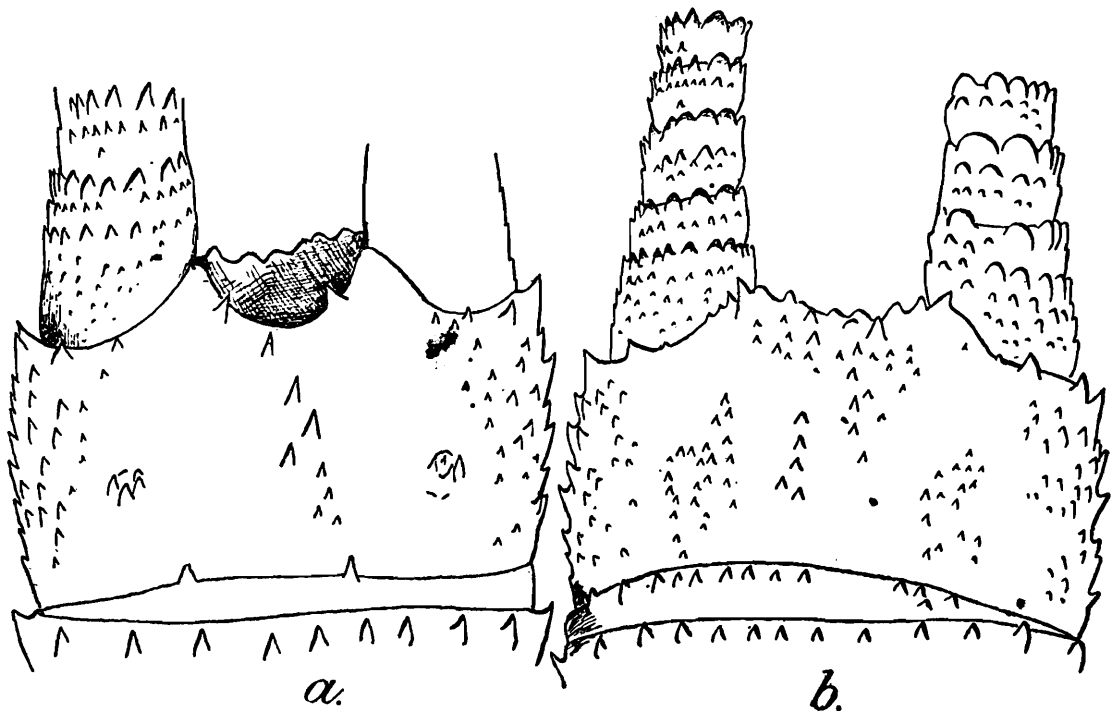
TABLE 2.

Apus granarius Lucas, Peking.

	Length of shield.	Total length.	Furcal rami.	Longest flagellum of first leg.	Somites exposed.	Legless somites.	Denticles on sulcus.
Male	13 mm.	24	18	..	21	12	46
Female	15	25	23	..	19	10	56

Abdominal somites with about 10 rather small spines visible dorsally; ventrally with a few scattered denticles in addition to the ring of larger spines.

Telson as shown in figure.



Apus granarius Lucas. Male.
Telson. a. Dorsal view. b. Ventral view.

Furcal rami longer in female than in male and with blunt spines or knobs in the latter in place of the slender spinules present in the female.

Longest flagellum of first leg reaching in both sexes far beyond the shield to about half the length of the abdomen.

Though there is a distinct resemblance to *A. asiaticus* that species is definitely excluded by the length of the flagellum of the first leg and the sexual difference in the furcal rami. There remains the probability that this is the true *A. granarius* Lucas, which was also taken in China.

Lucas' description is very incomplete and the number of legless somites is omitted, but there are certain points in which agreement is exact.

- (1) The length of the flagellum of first leg.
- (2) Telson "fere ut in *A. numidico*."

- (3) The furcal rami "valde annulati et saltem prope basin obtuse dentati haud setosi." (Most of Lucas' specimens were males!).
- (4) The sulcus teeth very minute and scarcely visible.

In the measurements of the body there is considerable discrepancy, but my specimens are contracted by drying and the difference cannot therefore be considered. I believe that I am justified in naming these specimens *A. granarius* Lucas.

On the other hand there is only one character in which these specimens differ definitely from *A. numidicus*, namely in the much greater length of the flagellum of first leg ; but it is advisable, provisionally at all events, to maintain *A. granarius* as a distinct species until the group can be satisfactorily revised.