

Ornithoptera flavicollis was very common at one place on the River Tinkyo, where I camped all May 1888. The male seems to be the wooer, but of this I am not quite certain yet. This insect has one peculiarity of flight which may be used in courting and is certainly used on other occasions. As I have not seen it noticed in books and have had many opportunities of observing it a description may be useful.

The male in basking along the foliage on sunny river-sides often flies slowly along, moving only its fore wings, the hind wings drooping at an obtuse angle to the line of flight, trailing like a rich robe of golden silk. In a freshly caught specimen this position can easily be induced. A furrow in the inner margin of the fore wing allows the notch of the hind wing to be elevated easily without interfering with the partial action of the fore wing. In such flight the fore wings only move through a small angle.

On the inner margin of the hind wing there is a strong fold fringed with hairs, forming a pouch. In normal flight and when at rest this pouch is closed, but when the hind wing is drooped the pouch opens. It may therefore be a scent-pouch and this peculiar flight the normal courting flight.

As a rule it is only where butterflies are plentiful that the various kinds of flight can be studied, and this seldom happens in North Borneo. When it does it is always in broken weather, rain and sunshine, and on the open banks of large streams. Very dry weather produces few insects and many of them crippled; very wet weather prevents any butterflies from appearing.

XXIV.—*Third Contribution to our Knowledge of Reptiles and Fishes from the Upper Yangtze-Kiang.* By Dr. A. GÜNTHER, Keeper of the Zoological Department, British Museum*.

MR. A. E. PRATT has continued to collect at Ichang. The last collection sent by him consisted chiefly of Reptiles, some Batrachians, and a few Fishes. Species not represented in his previous collection were the following:—

REPTILES.

Eumeces xanthi, sp. n.; *Japalura yunnansis*, Anderson;

* For the two previous communications see this Journal, 1888, vol. i. pp. 165, 429.

Achalinus rufescens, Blgr.; *Ablabes chinensis*, sp. n.; *Tropidonotus Swinhonis*, Gthr.; *Trimeresurus xanthomelas*, sp. n.

BATRACHIANS.

Rana Boulengeri, sp. n., *Bufo vulgaris*, *Hynobius chinensis*, sp. n.

FISHES.

Acipenser dabryanus, Dum.; *Mastacembelus chinensis*, Blkr.; *Rhynchocypris variegata*, sp. n.; *Botia variegata*, sp. n.

Mr. F. W. Styan has sent from Kiu-Kiang two large collections of beautifully preserved specimens, principally fishes, and many of large size. Those which are additional to the species enumerated in my former papers are the following:—

REPTILES.

Alligator chinensis, Fauvel.

FISHES.

1. ACANTHOPTERYGII: *Siniperca chuatsi*, Basil.; *Eleotris potamophila*, Gthr.

2. SILURIDÆ: *Pseudobagrus fulvidraco*, Rich.

3. CYPRINIDÆ: *Sclerognathus chinensis*, sp. n.; *Cyprinus carpio*, L.; *Barbus semibarbus*, Gthr.; *Barbus laeo*, Pall.; *Pseudogobio Styani*, sp. n.; *Rhinogobio typus*, Blkr.; *Xenocypris microlepis*, Blkr.; *Myloleucus æthiops*, Basil.; *Hypophthalmichthys nobilis*, Rich.; *Rhynchocypris variegata*, sp. n.; *Scombrocypris Styani*, sp. n.; *Chanodichthys mongolicus*, Basil.; *Parapelecus argenteus*, sp. n.; *Culter hypselonotus*, Blkr.

4. SCOMBRESOCIDÆ: *Hemirhamphus*, sp.

5. CLUPEIDÆ: *Coilia nasus*, Schleg.; *Clupea Reevesii*, Rich.

6. SALMONIDÆ: *Salanx chinensis*, Osbeck.

7. MURÆNIDÆ: *Anguilla vulgaris*, Cuv.

I subjoin some notes on known, and descriptions of the new, species:—

1. LIZARDS.

Eumeces xanthi.

This species is of special interest inasmuch as it is most closely allied to the Californian *Eumeces Skiltonianus*, from which it is barely distinguishable by a somewhat different coloration and by the postfrontals being widely separate from each other, whilst they are more or less in contact in the American form.

Snout of moderate length. Nasal small, followed by a postnasal, which forms a suture with the first two labials; anterior loreal forming a suture with the frontonasal; four supraoculars, the three anterior in contact with the vertical; occipitals entirely separated by the central occipital; two pairs of nuchals; seventh upper labial largest; two or three very obtuse tubercles on the anterior border of the ear, which is smaller than a dorsal scale; two azygos postmentals. Twenty-four or twenty-six scales round the body, the dorsal much broader than the lateral and ventral. Limbs overlapping when pressed against the body; the length of the hind limb is contained twice and a half to twice and two thirds in the distance from snout to vent. A median series of transversely enlarged subcaudals. Dark olive above, with a black lateral band extending from the loreal region to the tail; this band is bordered above and below by a light streak, which again has a blackish margin. Four series of dorsal scales separate the two lateral bands. Sometimes a light longitudinal band edged with black runs along the median line of the back and of the tail. Belly greenish blue.

Four specimens were collected by Mr. Pratt at Ichang, of which the largest is $6\frac{1}{2}$ inches long, the trunk and head measuring $2\frac{3}{4}$ inches.

2. SNAKES.

Achalinus rufescens, Blgr.

This snake was described from a deteriorated bleached specimen; in the fresh state it is of a uniform black.

Several specimens were found by Mr. Pratt at Ichang.

Ablabes chinensis.

This species belongs to that group of the genus of which *Ablabes melanocephalus* is the type; it comes nearest to *Ablabes Humberti*, having like that species ten upper labial shields, the eighth of which is excluded from the labial mar-

gin. But it differs by having a longer tail and by its less ornamented coloration.

Scales in seventeen rows. One præocular, two postoculars. The occipital does not touch the lower postocular; temporals 1 + 2, the anterior in contact with both postoculars. Ventrals 182; of the tail nearly one half has been lost, the mutilated part being protected by fifty-three pairs of subcaudals, so that the whole number may be estimated to have been between eighty and ninety. Upper parts nearly uniform brownish grey, the posterior part of the trunk indistinctly showing a series of whitish spots along each side of the back. No black dots along the vertebral line. The black cross bands between the eyes and on the neck are present as in *Ablabes Humberti* and *Ablabes collaris*, but much less distinct. Abdomen white, each ventral shield with a black dot on each side.

One specimen was found by Mr. Pratt at Ichang; its trunk measures 15 inches and its tail was probably $5\frac{1}{2}$ inches in length.

Tropidonotus Swinhonis, Gthr.

A variety of this species occurs at Ichang which differs from the type in having the scales more obscurely keeled, in possessing only the rudiments of a collar on the side of the neck, and in having the lower parts uniformly black or largely marbled with black.

Trimeresurus xanthomelas.

The second upper labial shield forms the front part of the facial pit; upper part of the snout with three small shields in front. Supraciliary scute large, not divided. Scales in twenty-one rows, keeled. Ventrals 185, 189; subcaudals 59, 68; anal and præanal not divided. Black, each scale with an elongate greenish-yellow spot, the spot frequently including small black specks. By the modification of the extent of the black colour on the scales a chain of subrhombic spots is formed along the vertebral line; the yellow of the scales within each rhombic spot is of a more reddish shade. Upper part of the head black, with a pattern of narrow symmetrical lines; a deep black band from the eye to the angle of the mouth; labial shields yellow, with a series of black spots on the sutures. A rather indistinct row of black spots along the sides of the body. Lower parts yellow, marbled with black, the black colour predominating in the posterior half of the length.

Five specimens of this beautiful snake were obtained at

Ichang by Mr. Pratt, one of the largest being 31 inches long, the tail measuring 5 inches.

3. BATRACHIANS.

Rana Boulengeri.

This species belongs to that division of the genus of which *Rana Kuhlii* and *Rana Liebigii* are characteristic forms.

Vomerine teeth in two short oblique series, each starting from the inner edge of the choana. Head large, broad, much depressed; snout very short and rounded; canthus rostralis short but distinct; upper eyelid a little broader than the inter-orbital space; tympanum hidden. First finger longer than the second; toes with swollen extremity, entirely webbed; subarticular tubercles well developed; inner metatarsal tubercle elongate; no outer tubercle. The tibio-tarsal joint does not reach the end of the snout when the limb is carried forward. Skin of the upper parts covered with large elongate warts and small rounded tubercles; a strong fold of the skin above the tympanum; no glandular fold on the side of the back. Uniform blackish brown above. Male with two internal vocal sacs.

As in *Rana Liebigii*, the breeding male has extremely thick forearms, but without any special armature. The rudimentary thumb and a large rounded tubercle on the upper side of the first finger are thickly studded with horny spines, the second and third fingers having similar spines, but less numerous. The whole of the chest is covered with smaller and larger rounded tubercles, each armed with a black conical horny spine, and similar but smaller dermal structures are scattered over the abdomen and also over the throat.

Two specimens of this large species were sent by Mr. Pratt from Ichang. The length from the snout to the vent is 4 inches.

Hynobius chinensis.

Allied to the Japanese *Hynobius nebulosus*, but with the series of vomerine teeth much shorter, extending backwards only to the middle of the eyeball. General habit short and stout; head large, nearly as broad as long, its length being rather more than one fourth of the length of the trunk. Tail compressed in its whole length, but without crest; body with eleven lateral folds. The limbs meet when adpressed; fifth toe well developed; no carpal or tarsal tubercles. Skin

smooth; gular fold indistinct. Nearly uniform horny black, the lower parts brownish, finely marbled with darker.

	millim.
Total length	85
From snout to cloaca	46
Length of head	11
Width of head	10
Fore limb	15
Hind limb	16
Tail	39

Two specimens were collected by Mr. Pratt at Ichang.

4. FISHES.

Siniperca chuatsi, Basil.

Mr. Styan has sent specimens 2 feet in length.

Ophiocephalus argus, Cant.

The specimens sent by Mr. Styan are 16-17 inches in length.

Sclerognathus chinensis.

D. 58. A. 16. V. 12. L. lat. 55. L. transv. 12/13.

Mouth small, transverse, inferior, surrounded by a broad, continuous, corrugated lip. Body much elevated, the back being compressed into a sharp edge. The anterior profile ascends steeply from the occiput to the origin of the dorsal fin, which is the highest point of the body. The greatest depth of the body is two fifths of the total length (without caudal). Head small, broad, one fifth of the total length (without caudal). Eye of moderate size, situated in the middle of the length of the head. Dorsal fin very high, the fourth simple ray being as high as the body; also the anal fin is elevated, the longest rays reaching beyond the root of the caudal. Caudal fin emarginate, with the lower lobe pointed and with the upper rounded. Paired fins very large, the pectorals extending beyond the root of the ventrals, which reach to or nearly to the vent. There are nine longitudinal series of scales between the lateral line and the ventral fin. Body light-coloured, with three very broad, irregular, black cross bands, the anterior behind the head, the middle corresponding to the ventral fins, and the third nearly entirely covering the tail. Fins black, with the exception of the caudal, which is only partially tinged with black.

Four specimens of this fine and extremely interesting species were collected by Mr. Styan; the largest is $8\frac{1}{2}$ inches long.

Cyprinus carpio, L.

The carp in its wild state attains a large size; Mr. Styan has sent specimens 33 inches long.

Barbus semibarbus, Gthr.

As I do not acknowledge the generic division *Hemibarbus*, proposed by Bleeker, referring these barbels to *Barbus*, I am obliged to propose another specific name for *Hemibarbus maculatus*, to distinguish it from *Barbus maculatus*, C. V.

Barbus labeo, Pall.

Barbus dissimilis, Blkr., is the same species.

Pseudogobio (Sarcochilichthys) chinensis, Blkr.

Adult specimens have the lower jaw protected by a sharp horny sheath.

Pseudogobio Styani.

D. 11. A. 8. L. lat. 55. L. transv. 7/10.

Body elongate, its greatest depth being equal to the length of the head and one fifth of the total (without caudal). Head small, broad and depressed, with the snout elongate and sub-conical. Eye of moderate size, with broad circular eyelid, one seventh of the length of the head and two fifths of that of the snout. Mouth narrow, transverse, with pendent lateral lips, the lip of the upper jaw being continuous with that of the lower; front of the lower jaw without any labial fold. Barbel long, as long as the snout. Origin of the dorsal fin much nearer to the extremity of the snout than to the root of the caudal. Caudal fin with broad base, deeply forked. Pectoral extending to or nearly to the ventral, which does not reach the vent. Coloration uniform silvery, with blackish tinges on the fins.

Several specimens were collected by Mr. Styan, of which the largest exceed 12 inches in length.

Rhinogobio cylindricus, Gthr.

This name was given to a young specimen which is specifically identical with *Rhinogobio typus*, Blkr. This species

attains a length of about 10 inches and is common at Kiu-Kiang.

Xenocypris argentea, Gthr.

I am unable to distinguish from it *Xenocypris Davidi*, Blkr.

Myloleucus æthiops, Basil.

This is a large and common species in the Yangtze-Kiang near Kiu-Kiang. Mr. Styan has sent specimens 40 inches long. The pharyngeal teeth are five molars in the specimen examined.

Hypophthalmichthys nobilis, Rich.

This is also a very large Cyprinoid, exceeding a length of 4 feet.

Hypophthalmichthys molitrix, C. V.

Equals the preceding in size.

RHYNCHOCYPRIS, g. n. (Cyprin.).

Scales small, lateral line present. Dorsal fin short, without spine, its origin being immediately behind the root of the ventrals. Anal fin short. Mouth lateral, but overlapped by the conically protruding snout. Intermaxillaries slightly protractile, free from the upper part of the snout in their entire circumference; the labial fold of the lower jaw is lateral only and does not extend across the symphysis; barbel none. Gill-rakers very short and few in number; pseudobranchiæ glandular. Pharyngeal teeth uncinatè, in two rows, 5.2. Intestine short, with one convolution. Peritoneum black.

This genus seems to come nearer to some of the small North-American members of Cyprinina than to any of the Old-World forms.

Rhynchocypris variegata.

D. 10 or 11. A. 9. L. lat. 100.

Body rather elongate, its height being two ninths of the total length (without caudal), the length of the head two sevenths. Head depressed, broad and flat above, snout wedge-shaped and produced. Eye of moderate size, two ninths of the length of the head and two thirds of the length of the snout or of the width of the interorbital space. Origin

of the dorsal fin nearer to the root of the caudal than to the extremity of the snout; the anal fin commences at a short distance behind the dorsal and terminates a long way from the caudal; caudal fin emarginate. All the fins are short-rayed; the pectorals are not much longer than half the length of the head and terminate at a considerable distance from the ventrals. The root of the ventrals occupies nearly the middle between the end of the snout and the root of the caudal fin; they nearly reach the vent. Lateral line complete, well developed, running along the middle of the body. Back greyish, sides and lower parts silvery; numerous scales on the sides blackish.

This small species grows to a length of 5 inches. Several specimens were collected by Mr. Styan in mountain-streams near Kiu-Kiang and others at Ichang by Mr. Pratt.

SCOMBROCYPRI, g. n.

Allied to *Opsariichthys*.

Scales small. Lateral line running along the lower part of the tail. Dorsal fin short, with more than nine branched rays, inserted opposite to the ventrals. Anal fin of moderate length. Barbels none. Snout prolonged and pointed; cleft of the mouth wide, extending to below the eye. The intermaxillaries are much dilated at their anterior end and joined in the middle of the snout by a long and firm suture; their lateral edge is sharp, not covered by membrane. Lower jaw with a pointed hook-like projection in front, fitting into a hollow of the upper jaw. Suborbitals not dilated. Gill-rakers short and few in number; pseudobranchiæ. Pharyngeal teeth in a triple series, uncinatæ.

The body of this fish is elongate, compressed. I know of no other Cyprinoid with equally powerful jaws. The jaws are very firmly joined and the sharp bony edge of the intermaxillary and the terminal hook of the lower jaw supply as formidable a weapon as if the jaws were actually toothed. The form of the snout is very similar to that of a mackerel and has suggested the generic name.

Scombrocypris Styani.

D. 13-14. A. 13-14. L. lat. 112. L. transv. 19/10.

The height of the body is nearly one sixth, the length of the head one fourth, of the total length (without caudal). Head flat and rather broad above. The diameter of the eye is two fifths of the length of the snout, one fourth of the post-

orbital portion of the head, and one half of the width of the interorbital space. Mouth subhorizontal, wide, the maxillary extending to below the middle of the eye. The chain of infraorbital bones is very narrow. Suboperculum narrow and long. The anterior dorsal ray is somewhat nearer to the root of the caudal fin than to the end of the snout and immediately behind the root of the caudal. Origin of the anal fin at a distance behind the end of the dorsal. Caudal fin strong, broad, long, and deeply cleft. The length of the pectoral equals that of the postorbital portion of the head. Scales distinctly radiated; there are six series between the lateral line and the root of the ventral fin. The lateral line descends above the pectoral fin gradually to below the median line of the side, runs along the lower half of the tail, but terminates in the middle of the root of the caudal. Coloration uniform silvery.

Mr. Styan collected specimens in the main stream and one young one in mountain-streams near Kiu-Kiang. The largest is 4 feet long.

Chanodichthys pekinensis, Basil.

Mr. Styan has sent a specimen 2 feet long, and of the allied *Ch. mongolicus*, Basil., several attaining a length of 18 inches.

Culter ilishæformis, Blkr.

A large fish, exceeding 3 feet in length.

PARAPELECUS, g. n. (Cyprin.).

Body similar to that of a herring, much compressed, the entire abdominal edge being trenchant. Scales of moderate size; lateral line abruptly bent downwards above the pectoral fin. Cleft of the mouth oblique; barbels none. Dorsal fin short, without spine, placed opposite to the space between ventral and anal; anal fin long, many-rayed; caudal fin forked; pectorals rather long; ventrals well developed. Gill-covers attached by membrane to the isthmus. Pharyngeal teeth in a triple series, hooked, 5 . 4 . 2.

Parapelecus argenteus.

D. 10. A. 25. V. 9. L. lat. 75. L. transv. 10/5.

The height of the body is contained four times and one third in the total length (without caudal), the length of the

head five times and a third. Head very small, strongly compressed, with the cleft of the mouth obliquely ascending upwards and with the jaws equal in front when the mouth is shut. The eye is large, placed in the middle of the depth of the head, one fourth of the length of the head and rather shorter than the snout. Suborbitals narrow. The maxillary does not extend to the vertical from the front margin of the eye. Pectoral fin of moderate length, as long as the head, terminating at a great distance from the ventral fin. The root of the ventral is nearly midway between the extremity of the snout and the root of the caudal fin. The small dorsal fin is inserted nearer to the origin of the anal than to the root of the ventral. The lateral line is abruptly bent downwards in about the twelfth or thirteenth scale, and reascends opposite to the end of the anal fin; the muciferous tubes of each of the thirteen anterior scales emit a vertical branch at a right angle. Coloration uniform bright silvery.

Several specimens, $9\frac{1}{2}$ inches long, were obtained by Mr. Styán at Kiu-Kiang.

Cobitis xanti, Gthr.

This species has a suborbital spine and ought to be removed from the genus *Nemachilus*, to which I erroneously referred it.

Botia variegata.

D. 11. A. 8. V. 9.

Barbels six. The height of the body is one fifth of the total length (without caudal), the length of the head two sevenths; snout elongate, but the small eye is much nearer to the end of the snout than to that of the operculum. The suborbital spine extends to below the hind margin of the orbit. Interorbital space narrow, transversely convex, twice as wide as the orbit. Origin of the dorsal fin midway between the root of the caudal and the orbit. Caudal fin deeply forked. Body covered with minute but regularly arranged scales. Ground-colour yellowish, the body ornamented with five black bands, which are irregular in shape and may be broken up into large blotches; all are continuous across the back and the middle one corresponds in position to the dorsal fin. All the fins variegated with black, the black markings of the dorsal and anal fins sometimes confluent into broad band-like spots.

Two specimens of this fine gigantic species of loach were sent by Mr. Pratt from Ichang. The larger measures 13 inches in length.

Hemirhamphus, sp.

Several young specimens of a species of *Hemirhamphus* cylindrical in shape and only partly covered with small scales on the hind part of the body, with a bright, silvery, well-defined band, were collected by Mr. Styan at Kiu-Kiang on March 27. The determination of these specimens as to species is uncertain at present.

Clupea Reevesii, Rich.

Mr. Styan collected specimens 30 inches long.

Salanx chinensis, Osbeck.

This species ascends the river to Kiu-Kiang, where Mr. Styan obtained a specimen on March 27.

XXV.—Notes on the Species of Phasmidæ collected by Basil Thomson, Esq., in the Louisiade Archipelago. By W. F. KIRBY, F.E.S., Assistant in Zoological Department, British Museum (Natural History).

IN addition to Lepidoptera Mr. Thomson collected a small number of other insects, including some extremely interesting Phasmidæ. Among these were three female specimens which I cannot distinguish specifically from the wide-ranging and somewhat variable *Eurycantha horrida*, Boisd. The smallest of these is of a dark reddish-brown and measures 136 millimetres ($5\frac{1}{2}$ inches) in length; it much resembles specimens which we have previously received from Thursday Island. The other two are darker and much larger than any specimens previously in the collection of the British Museum; the largest measures 183 millim. (about $7\frac{1}{2}$ inches) in length and 25 millim. (an inch) across the thorax. The small specimen is from Goodenough Island and the two large ones from Rossel Island.

There is also a series of both sexes of a small *Promachus* taken on Sudest Island, Oct. 10, 1888, and a much larger female, taken on Rossel Island on Oct. 18. These have considerable general resemblance, and I might have considered the small specimens to be only the immature form of the larger one, but that the proportions of the tarsi are very different.



Günther, Albert C. L. G. 1889. "Third contribution to our knowledge of reptiles and fishes from the upper Yangtze-Kiang." *The Annals and magazine of natural history; zoology, botany, and geology* 4, 218–229.

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