

and they are united to the typical forms by other Spur-winged Plovers.”—J. H. G.]

GALLINULA PUMILA, Sclater. South African Lesser Water-hen.

All I can ascertain of *Gallinula pumila* is that the last specimen sent was shot at the Umschali Lakes, not many miles this side the Zulu border, and within three or four miles of the coast. The irides were light red, the bill greenish yellow, frontal shield bright red, tarsi and feet drab.

[My friend Mr. C. J. Andersson, to whom I am indebted for a specimen of this rare Gallinule, collected by him in Damara-land, informs me that “it is found sparingly on the Okavango River, is very shy, and lives in thick reeds, like all the rest of the family; its food also is very similar.”]

The typical specimen of this Gallinule, which was figured in the ‘Ibis’ for 1859, and which is preserved in the British Museum, is apparently not quite adult, the specimens which I have subsequently received from Mr. Andersson and Mr. Ayres being decidedly darker, and also more olivaceous in their colouring.—J. H. G.]

XXIX.—*Descriptions of four new Species of Formosan Birds; with further Notes on the Ornithology of the Island.* By ROBERT SWINHOE.

Kittacincla auricularis, sp. nov. Pileo alis caudaque æneo-nigris: hujus rectricibus ad apicem, illarum 3, 4, 5, et 6 remigibus externe cinereis: dorso et scapularibus cum pectore griseo-fuscis: uropygio partibusque inferioribus castaneis, ventre tamen dilutiore, axillaribus fere albis: rostro nigro: pedibus pallide carneis. Ante oculos et circa caput utrinque vitta currit alba usque etiam ad auriculares, quæ sunt valde protractæ, unde est extractum nomen specificale. Long. tota 8·7 poll.; alæ 4; caudæ 4·5; tarsi 1·2.

Long, fibrous, white auriculars about one inch in length. Quills of the wing graduated, the sixth being the longest. Tail much graduated, the feathers broad, ending obtusely with mucronate tips; claws well curved for perching; hind toe strong,

with strong claw. Bill, along culmen, .7 in.; from gape to tip, 1.0 in., somewhat broad at the base.

The bill of this bird is proportionately stronger than in the typical *K. macroura*; but in its breadth at the base and in the form of its tail, which is, however, comparatively shorter, it is typical of the subgenus. It is a pity, in my opinion, to unite this natural subgenus to the true *Copsychi*. The *Kittacinclæ* are forest-birds, retiring from the haunts of men; they are distinguished by their pale flesh-coloured legs and more or less developed tails, and show in their two last characters a tendency towards the Mountain-Wagtails (*Henicuri*). They are all sweet songsters. The *Copsychi*, on the other hand, have black legs, are familiar house- and open-country-frequenting birds, and possess but a few notes, which are loud, but not over-melodious.

The second novelty was brought 7th March. It is a Saxicoline form, with the plumage of the *Niltava* Flycatchers. Jerdon (Birds of India) places the group close to that magnificent fellow, *Grandala caelicolor*. The bird of the Formosan Mountains I have named

Myiomela montium, sp. nov. Cyanea: fronte humerisque cæruleis; macula colli utrinque alba, sub plumis celata: lateribus cum subcaudalium marginibus albicantibus: alis fusconigris, cinerascenti-cæruleo marginatis: cauda nigra, oblique albo fasciata: rostro pedibusque nigris. Long. tota 6.5 poll.; alæ 3.6; caudæ 2.7; tarsi 1.15.

The white spot on each side of the lower neck is only conspicuous when the feathers are disarranged; it is formed by the basal half of the feathers being pure white. The two central feathers of the tail are entirely black; the rest, with portions of their outer webs and shafts, pure white, the outermost having scarcely any; the second, to the extent of an inch, increasing inwardly to the fifth, which is white for about two inches. The feathers bulge, and are somewhat pectinated on the edges of their white portions. The tail is composed of twelve moderate feathers, the two middle ones being nearly double the breadth of the others; the rectrices are slightly graduated, and end in angular mucronate tips. Claws pale, sharp, laterally cultrate, and rather delicate. Fifth quill slightly longer than

the sixth, and longest in the wing. Feathers soft and fluffy. This is an extremely curious mountain-form of the *Sylviadæ*, combining many of the characters of *Calliope*, *Ianthia*, *Larvivora*, *Pratincola*, &c., with those of the Blue Flycatchers, *Niltava*, *Hypothymis*, &c. It is closely allied to *M. leucura*, Hodgk. (see Jerdon, *op. cit.* vol. ii. p. 118), but wants the blue eye-streak, and has a shorter and differently marked white and black tail. Jerdon notes a third species, *M. diana*, from Pegu.

The third and fourth novelties were brought down on the 15th March; they belong to the families *Muscicapidæ* and *Turdidæ* respectively.

Cyornis vivida, sp. nov. ♂. Lazulino-cærulea, purpureo lavata: fronte, regione carpali et præsertim uropygio vividioribus: naribus, genis mentoque nigris: alis intus cum cauda nigris, illis externe cyaneis, hujus rectricibus duabus mediis (rachidibus exceptis) et alis extus cæruleis: subtus castanea, plumis quibusdam lateralibus et abdominalibus interne albis: rostro pedibusque nigris. Long. tota 6 poll.; alæ 3·3; caudæ 3·9; tarsi 7.

Hab. in montibus ins. Formos.

First quill small; fourth longest in wing. Tail of twelve graduated feathers, with obtuse mucronate tips; the outer ones about half an inch shorter than the two central, which are 0·2 in. longer than the rest, and are narrower, with the shafts more median, the feathers narrowing and ending in blunt tips. Claws rather curved, and laterally cultrate. Some of the feathers of the abdomen and flanks white, with buff tips, the white not showing unless the feathers are disturbed.

This species seems to be the Formosan representative of the Himalayan *Cyornis rubeculoides*, Vigors (Jerdon, *Birds of India*, vol. i. p. 466), from which it differs in its rather larger size and more vivid colouring, in the intense brightness of its blue rump, and in having the chestnut-buff of the breast diffused over the rest of the lower parts.

Turdus albiceps, sp. nov. ♂. Capite toto albo: partibus superioribus cum pectore et axillaribus olivaceo-nigris: partibus inferioribus castaneis, lateraliter olivaceis: crisso albo, nigro castaneoque guttato: rostro pedibusque aurantiacis. Long. tota 8·8 poll.; alæ 4·9; caudæ 3·3.

The tail contains twelve nearly equal feathers, ending in mucronate tips. Tarsi 1·2 in. ; claws not much curved, laterally cultrate. Three male specimens varied in length of wing, measuring respectively 4·9 in., 4·7, 4·6. The bills of all are a fine orange ; their legs and claws more dingy, and washed with yellow. In one the vent was white, in the other two light chestnut, all spotted and broadly edged with black and chestnut. The rectal bristles are pure white. The tips of some of the coronal feathers are a little sullied, and in one specimen the throat has a few arrow-head black spots. A few white filaments, about half an inch long, extend from the white nuchal edge over the black of the back. On the carpal edge of wing a tubercle or wart is rather conspicuous. It occurs, I find, though smaller, in the Formosan *Oreocincla* and in *Turdus daulias*, also in a still lesser degree in the *Garrulaces*, and probably in most other species of this group. It is, of course, an abortive wing-spur, which in *Turdus dactylopterus*, Bp., of Syria appears to have acquired a full development.

From Jerdon's description (vol. i. p. 527) of *Merula castanea*, Gould, I think our bird is most nearly affine to that species : its black upper coloration seems to supply a link between that bird and the true Meruline type. It has also some characters drawing it close to the *Geocichla*.

I have, through the successful *chasse* of a friend, lately procured two pairs of Spoonbills, which it is incumbent on me to describe at some length, as the authors of the 'Fauna Japonica' established the two species *Platalea major* and *P. minor* on quite immature individuals.

(1.) *Platalea*, ♀ (shot, 7th March, in Tamsuy harbour). Length 33 inches ; wing 15 ; tail 5 ; bill, from base of frontal feathers to tip, 7·5 ; bare tibia 3 ; tarsi 5·5 ; mid-toe and claw 3·8. Bill flesh-coloured, mottled with blackish on the edge of lower mandible, and along the upper mandible as far as spatule. Inside of bill and mouth flesh-coloured. Bare face-skin flesh-coloured, more or less tinged with yellow. Occipital feathers somewhat elongated. Plumage white, except part of some outer quills, the shafts of the quills, and of a few other wing-feathers, which are a faded blackish brown. Legs purplish black. Irides yellowish brown.

(2.) *Platalea*, ♂ (paired with the foregoing, and shot same date). Length 31 in.; wing 13; tail 4·5; bill, from base of frontal feathers, 7·2, and broader than in (1); bare tibia 2·4; tarsi 4·7; mid-toe and claw 3·6. Bill dark fleshy purple, ashy blue along the furrow, and freckled and washed with the same on the spatule. Sides of gonys and rest of the upper surface of the upper mandible mottled with dull black, the mottling coalescing on the base of upper mandible. Inside of the mandibles pale flesh-coloured, tinged with purple, blacker in the mouth; naked face-skin purple-black. Occipital feathers somewhat elongated. Plumage white; the quills with less black than in no. (1). Legs purplish black. Irides yellowish brown.

The shape and colour of the bills of the above two birds were so dissimilar, as also the colour of the face-skin and the gular pouch of no. (1) running to an angle inwardly, while that of (2) had the feathered skin encroaching angularly upon it, that, when the specimens were first brought to me, I exclaimed, in delight, "Behold a solution of the Platalean riddle!—*P. major* and *P. minor* of the 'Fauna Japonica' are one and the same species." I dissected the specimens, established their sexes, drew out descriptions, and thought I had done a service to science. But my triumph was not of long duration; for, just ten days after, my friend brought in another pair of Spoonbills, the sight of which quite upset all my conclusions, and nearly drove me mad. The female of the former pair was the larger; the female of this latter pair was the smaller, and appeared almost identical with the male of the former pair, while the last male had a deeply corrugated and variegated bill, blood-red eyes, and a long crest *in quill*, and was *entirely* white. But, to treat the matter scientifically, we will describe this interesting couple.

(3.) *Platalea*, ♀ (shot, 17th March, in Tamsuy harbour). Length 31·5 in.; wing 14; tail 5, of 12 feathers; bill, from base of frontal feathers, 7·5; bare tibia 3; tarse 5; middle toe and claw 3·7. Bill flesh-coloured, longitudinally streaked and speckled with blackish, and mottled and freckled with slate-colour, chiefly about the spatule, the furrow being slate-colour. Bill not quite so dark as that of (2). Bare face-skin dull purplish brown. Inside of bill as in (2). Occipital feathers

somewhat elongated. Plumage white; the external quills and shafts of most of the rectrices being black. Legs purplish black. Irides yellowish brown.

(4.) *Platalea*, ♂ (paired with the foregoing, and shot same date). Length 31·5 in.; wing 14·2; tail 5, of 12 equal feathers; bill, to base of frontal feathers, 7·8; bare tibia 3·5; tarse 5; middle toe and claw 3·5. Bill slate-colour, transversely barred with black, the bars broken and disconnected on the spatule; apical edge black, succeeded by a patch and scattered spots of orange-ochre over the spatule, which is also freckled with light slate-colour. Inside of mouth deep indigo-black. Inside of nostrils ochreous. Sides of upper and lower mandibles deeply corrugated transversely, the corrugæ being black; inner edge of lower mandible with roundish corrugæ, like flattened tubercles. Bare face-skin black, with a bright yellow-ochre patch before the eye, extending over the under lid and in a thin line over the upper lid. Occipital crest long, but not fully developed, being still partially in quill. Entire plumage pure white. Legs purplish black, rather darker than in (3). Irides blood-red.

Now it will be observed that in both pairs the female was the most undeveloped bird. Must we suppose that in each case she was the younger, and that either the male, having but his first mate, was obliged to put up with a junior in age, or that Spoonbill bachelors are partial to females younger than themselves? On the contrary, it strikes me that Spoonbills, like Orioles and many other land-birds, and probably also many water-birds, are slower in the development of the female than in that of the male. The autumnal plumage of the young male in his first year would doubtless be that of the female (1). By the close of winter he would have developed to the stage in which we found him (2), while the female still retained her first garb (1). In the spring of the second year we find the female advanced to the appearance of the male of the first spring (3), and the male fully developed (4). In the third spring the female would probably have a corrugated bill, and be almost or quite identical with the old male. At least, there appear to be no valid reasons why we should doubt of her ever arriving to the same stage of development as the male.

Next we will proceed to compare our four birds with the specimens described as *P. major* and *P. minor* in the 'Fauna Japonica.' The single individuals from which the characters are therein drawn are both young specimens—certainly not older than the second year, if so old. For of the first we find it stated (*l. c.* p. 119) that "son bec est absolument dépourvu de rides à sa face supérieure;" and also "son plumage est d'un blanc uniforme, à l'exception des pointes des grandes rémiges où le blanc passe au brun-foncé; cette même teinte occupe aussi les tiges de ces pennes;"—and of the *P. minor* (p. 120), "quoique absolument semblable à la précédente par ses teintes et son organisation en général, cette espèce nouvelle s'en distingue néanmoins, au premier coup d'œil, par sa petite taille, par son bec assez court, ainsi que par une disposition très-différente des parties nues de la tête."

The dimensions of our four specimens compared with those described in the 'Fauna Japonica' give the following results:—

<i>P. major</i> , F. J.	Length	33·0;	wing	14·2;	tail	4·5;	bill	8·7;	tibia	3·7;	tarse	5·5
No. (1)	„	33·0;	„	15·0;	„	5·0;	„	7·5;	„	3·0;	„	5·5
No. (2)	„	31·0;	„	13·0;	„	4·5;	„	7·2;	„	2·4;	„	4·7
No. (3)	„	31·5;	„	14·0;	„	4·5;	„	7·5;	„	3·0;	„	5·0
No. (4)	„	31·5;	„	14·2;	„	5·0;	„	7·8;	„	3·5;	„	5·0
<i>P. minor</i> , F. J.	„	25·0;	„	12·7;	„	„	„	6·1;	„	2·3;	„	4·0

From this it will be seen that the larger species varies much in size, the smallest exceeding the type of *P. minor* by 6 in. in length, by 1·1 in length of bill, and by ·7 in length of tarse. Let us now compare the disposition of the bare face-skin in our several specimens with the published descriptions.

(1.) ♀. Round the eye bare. The frontal plumes advance ·4 in. before the exterior plane of eye. The plumed skin advances below the eye ·6 in. beyond its exterior plane on to the lower mandible, ending obtusely beyond the plane of the commissure; then receding downwards and inwards 1·5, exposes the gular pouch without readvancing.

(2.) ♂. Round the eye bare. The plumes advance on the forehead about ·1 in. beyond the eye; towards the commissure they fall short of the exterior plane of the eye, and recede only ·2;

then advance $\cdot 8$ on to the centre of the pouch, and terminate in an imperfect angle.

(3.) ♀. Round the eye bare. The plumes advance on the forehead to about $\cdot 3$ in. beyond exterior plane of eye towards the commissure only slightly in advance of the eye; they then recede inwards and downwards $\cdot 5$, and, forming inwardly an angle of about 80° , advance on to the gular pouch about $\cdot 8$, terminating in an angle of 45° .

(4.) ♂. Round the eye bare. The plumes advance on the forehead to just over the middle of the eye, form an obtuse angle towards the commissure in about the same plane, and then recede well clear of the lower jaw, advancing again on to the gular pouch $\cdot 6$, and terminating in its centre in an undetermined angle.

Of *P. major* we read (*l. c.*), "tour de l'œil et région des freins nus. La partie emplumée du front formant par devant une ligne convexe, et dépassant l'œil de six lignes. Les plumes des joues s'avancent vers la base de la mandibule inférieure jusqu'au delà de l'angle de la bouche, et celles du bas du cou se prolongent jusque sous l'aplomb de l'œil, en formant sur la peau nue de la gorge un angle aigu."

In the frontal plumes this description of *P. major* closely agrees with our (1), but in that of the gular plumes with our (2); I suppose, therefore, it is the intermediate plumage.

In *P. minor* the feathered forehead, it is said, is "un peu échancré par devant, et ne dépassant guère le bord antérieur de l'œil." So far it would agree with our (2). But "la partie emplumée des joues ne s'avance que jusque sous le bord postérieur de l'œil." This last shows a greater expansion of bare skin than in our most developed (4). I suppose therefore, for the present at least, we must allow *P. minor* to enjoy its rank as a species, and take to ourselves the merit of only having discovered the mature development of *P. major*.

The rectrices in our bird number 12, and are of equal length. The tertiary quills extend to the end of the primaries.

Now for a few facts brought to light by dissection.

(1.) ♀. Ovary minute. Stomach nearly empty, containing exuviae of Crustacea, small fragments of drift-wood, and morsels

of shells. Layers of fat over the abdomen. Trachea simple, with close-set rings.

(2.) ♂. Testes small and dark. Proventriculus long and thickly granulated. Stomach large and soft, nearly empty, containing remains similar to (1). Both birds were shot at noon, and had digested all the morning meal. Cæca small and roundish, about .4 in. long, and placed about .3 in. from anus. Trachea similar to that of (1).

(3.) ♀. Ovary moderately developed. Stomach nearly empty, containing one sea-weed ovule, two small empty bivalve mollusks, and a few fragments of shell. Trachea as in (2) and (1).

(4.) ♂. Testes large, about .7 in. long, and oval. Stomach only containing bits of the elytra of the salt-water *Dytiscus*. This and (3) were also shot about noon. The trachea of this old male is convoluted. After entering the thorax, it turns upwards sharply, runs parallel to the neck and its main length for 3 inches, bends upwards and runs again towards the thorax, passes the first convolution, and terminates in the bronchial tubes. The almost uniform width of the trachea is about .5 in., the rings being entire and set far apart. The trachea of the female (3) is of the same width, but the rings are much narrower and more closely set. The bronchial tubes of the female are shorter, weaker, and narrower.

This peculiar formation of the trachea may be peculiar to the mature male, but we have not sufficient grounds for coming to that conclusion.

The sternum of the *Platalea* appears to bear a closer relation to those of *Numenius* and the *Totani* than it does to that of the *Ardeida*, having two open foramina on each side. The sternum of the female (1) is larger than that of the male (2), with the anterior edge of the keel more advancing; the foramina are more deeply cleft, the scapulars shorter, and its whole structure weaker than in that of the male, which, though smaller in stature, has a robuster body.

The sternum of the female (3) has a deeper and more rounded keel than that of the old male (4). Its foramina are wider, but not so deeply cleft. It is shorter in entire length. The scapulars are broader and slightly longer. The coracoids are

broad; the furculum narrower and weaker. The chest is more expanded, and pierced with more air-holes; and the whole structure is less compact, and tighter.

There appears to be no marked difference between the male and female sterna, except that attributable to age.

Tongue short and triangular, edged on the interior convex margin with papillæ. Cleft of palate more sparsely edged with papillæ, which are drawn on the transverse ridge at the base of the cleft opposable to the base of the tongue.

The flesh of this Spoonbill is very palatable.

In the Chinese books on natural history many birds are fabulously described, and of the Spoonbill a wondrous description is given. It is spoken of as a bird with the eyes placed on the top of its head, and as possessing only one wing; so that two birds are obliged to hook on side by side to enable them to rise in the air. It is considered as singular an anomaly among the feathered class as a Plaice is among fishes. The Plaice has also both its eyes on the top of its head, and is reported by the Chinese cabinet naturalists, on account of the apparently unfinished state of its lower surface, to require two to adhere together to form a proper fish, each animal keeping a look-out on its surface-side for the mutual safety of the pair. With this story in their minds, some Chinese *literati* of the place actually desired me to let them have a look at the Spoonbills, wishing to verify their literary researches. I soon confounded the stagnant learning of the Confucian *savans*.

I have to add to my Formosan list two more species, viz. the Painted Snipe (*Rhynchæa sinensis*) and the Bald Coot (*Fulica atra*), both of which were shot last November, at Apes' Hill, S.W. Formosa.

I have perused the description of *Gallinago solitaria*, Hodgs., in the 'Fauna Japonica,' taken from Japanese specimens. This seems to tally well with my *Gallinago megala* from China and Formosa, and may be identical with the true *G. solitaria* of India, of which I have not seen an example. The bird is only met with on our southerly coasts in September and late in spring, and doubtless winters in much lower latitudes.

Tamsuy, Formosa, March 25, 1864.