

Meteorological Observations made at the Apartments of the Royal Society by the Assistant Secretary, Mr. ROBINSON; by Mr. THOMPSON at the Garden of the Horticultural Society at Chiswick, near London; by Mr. VALENTI at Boston, and by Mr. DUNBAR at Applegarth Mause, Dumfries-shire.

Days of Month, 1840.	Barometer.		Thermometer.		Dumfries-shire.		Wind.		Rain.		Dew point, 4 a.m.
	Chiswick.		Self-register.		Max. Min.		London: 9 a.m.		London: 9 a.m.		
	Max.	Min.	Fahr.	Roy. Soc.	Max.	Min.	Chiswick.	Dumfries-shire.	Chiswick.	London: 9 a.m.	
1.	30.022	30.039	55.3	57.7	51.7	58	46	53.5	s.	w. calm	50
2.	30.172	30.124	30.039	30.039	51.3	51	39	51	w. calm	w. calm	52
3.	30.194	30.153	30.061	30.061	44.3	56	45	44	s. w.	s. w.	46
4.	30.084	30.056	30.033	30.033	46.3	57	45	53	NNW.	NE. calm	49
5.	30.100	30.073	30.097	30.097	46.4	57	33	30	N. w.	N. w.	45
6.	30.126	30.093	30.082	30.082	42.6	53	30	44	N. w.	N. w.	45
7.	30.114	30.121	30.071	30.071	39.0	58	30	47	SSW.	N. calm	42
8.	30.266	30.241	30.190	30.190	36.8	60	30	43	N. w.	N. calm	41
9.	30.326	30.293	30.260	30.260	40.9	59	30	48	WNW.	N. calm	39
10.	30.318	30.280	30.254	30.254	39.8	60	35	45.5	N.	N. calm	39
11.	30.400	30.401	30.353	30.353	36.7	58	35	40	SE.	N. calm	31
12.	30.604	30.549	30.543	30.543	44.1	58	35	40	SE.	N. calm	30
13.	30.590	30.548	30.528	30.528	44.7	60	31	39	N. w.	N. calm	30
14.	30.494	30.359	30.328	30.328	42.2	63	31	40	SSW.	N. w.	45
15.	30.258	30.223	30.271	30.271	39.7	66	32	45	SW.	NW. calm	42
16.	29.956	29.915	30.071	30.071	41.9	57	36	41.5	s.	w. w.	46
17.	29.812	29.963	29.737	29.737	48.0	56	51	49	s.	w. w.	47
18.	30.026	29.977	29.735	29.735	48.0	56	46	48.5	SSW.	N. calm	49
19.	29.704	29.805	29.664	29.664	48.0	56	49	49	SSW.	N. calm	47
20.	30.100	30.075	30.032	30.032	45.8	57	42	50.5	NW.	NW. NW.	43
21.	30.156	30.124	30.046	30.046	45.8	57	29	46	NW.	N. calm	45
22.	29.904	29.897	29.861	29.861	42.2	54	39	42	NW.	N. calm	41
23.	29.960	29.875	29.662	29.662	44.8	53	38	45	s.	NW. calm	45
24.	29.556	29.586	29.523	29.523	42.5	53	35	42	SW.	w. calm	42
25.	29.784	29.877	29.746	29.746	42.5	53	40	41.5	SW.	w. calm	43
26.	29.836	29.826	29.126	29.126	39.3	52	28	40	SW.	w. calm	38
27.	29.178	29.204	29.160	29.160	42.2	50.6	39.3	40	w.	NW. NW.	37
28.	29.136	29.266	29.114	29.114	38.6	50	30	49	w.	N. calm	35
29.	29.340	29.369	29.292	29.292	41.3	52	36	37.5	s.	w. calm	42
30.	29.522	29.520	29.477	29.477	41.4	50	32	45	N. E.	E. calm	43
31.	29.564	29.566	29.515	29.515	40.3	56	36	42	E.	SE. calm	44
Mean.	29.985	29.984	29.871	29.871	43.2	57	36	47	ENE.	SE. calm	45
					47.2	51.8	43.2	36.64			Mean.

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XXXV.—*Horæ Zoologicae.* By SIR W. JARDINE, Bart., F.R.S.E. & F.L.S., &c.

No. III. *On the History and Habits of the Birds composing the Genus Prionites of Illiger.*

THE genus *Prionites*, or the Motmots of British writers, is a small group of beautiful birds peculiar to the New World. They are all very closely allied by their habits, and have the colours of the plumage and the distribution of its markings assimilating so remarkably with each other, that some confusion still exists in the distinction of the species; and there is also much difficulty in always recognising with certainty that to which the observations of travellers relate. In our latest ornithological system by Mr. Swainson, two species have been separated from *Prionites*, under the subgeneric title of *Crypticus**, characterized by the great dilatation of the bill; while in the old form, as now restricted, we appear at present to know six distinct birds †.

The *P. Brasiliensis* is the species from which the genus was originally established, and it is the only one regarding the habits of which we have hitherto had any authentic record. The notes of both Azara and Waterton refer to it ‡.

* *C. platyrhynchus* and *superciliaris*.—Orn. Illust. pl. 106. and pl. 18. N. S.

† *P. Brasiliensis*; *ruficapillus*; *Bahamensis*, Sw.; *Mexicanus*; *Martii*; and *caeruleocephalus*.—Orn. Illust. pl. 42. N. S.

‡ Of this species, described by Azara, two specimens were procured alive, and were kept in confinement for five months. "It is a rare, strong, bold, mistrusting and observing bird; it ate small pieces of bread, or more readily of raw meat, which before swallowing it struck several times against the ground, as if, believing them alive, it wished to kill them. Sometimes I saw them eat water-melons and oranges; but they never drank or took any notice of maize, either whole or pounded, nor did they use their feet to hold with. If the piece was large they left it; but what they liked best were small birds, which I let loose into the room, and they followed them into

and from the other scattered information which we possess, the favourite haunts of the Motmots are known to be the depths of retired forests generally near the vicinity of water; they are solitary, or live in pairs only, utter a monotonous often repeated note, breed in holes in the banks of ravines or in hollow trees, and live upon insects, reptiles, small or young birds, and fruits or berries; and as we learn from the notes of our correspondent, they occasionally also search for their food upon the ground.

The Motmots seem to be confined chiefly to the northern half of the southern continent of America, one at least, as its name implies, extending into the Mexican provinces; it is probable also that the different species are local or restricted

nately for a long time, till they tired them, caught them and killed them with strokes as they treated the meat. They continued this even after the birds were dead, till they had completely swallowed them, beginning at the head, and not hesitating at the feathers; they did the same with mice, but did not care for rather larger birds, which they could not swallow; whence it may be inferred that they would do as much damage to nests as the Toucans, which they resemble in other points."—*Apuntamientos de Azara*, tom. i. 243. Num. LII. Del Tutu.

"The *Houtou* shuns the society of man. The plantations and cultivated parts are too much disturbed to engage it to settle there; the thick and gloomy forests are the places preferred by the solitary *Houtou*. In those far-extending wilds, about day-break, you hear him articulate in a distinct and mournful tone, 'Houtou, Houtou.' Move cautiously to where the sound proceeds from, and you will see him sitting in the underwood, about a couple of yards from the ground, his tail moving up and down every time he articulates 'Houtou.' He lives on insects and the berries amongst the underwood, and very rarely is seen in the lofty trees, except the bastard Liloabali tree; the fruit of which is grateful to him. He makes no nest, but rears his young in a hole in the sand, generally on the side of a hill."—*Waterton's Wanderings*, p. 127.

"The Motmots, so named from their monotonous note, live only in the tropical forests of the New World, preferring those deep recesses of perpetual shade, where a high canopy of matted foliage nearly excludes the rays of a vertical sun. They appear even more solitary in their disposition than the *Trogon*s; their note may be heard morning and evening, from the depths of the forests, but the bird is never seen, unless the hunter comes unexpectedly upon its retreat. This we have generally found to be a low withered branch, completely shaded, and just at the edge of such paths as are made by the Cavies or the Indians. The *Jacamas* and the *Trogon*s both love these shady nooks, where they sit motionless, watching for passing insects, on which they dart. Such is no doubt the manner in which the Motmot feeds, but his strong conformation enables him to capture larger game."—*Swains. Zool. Illust.* 2nd Series, descrip. of *P. Martii*.

"The Motmot is solitary, hiding in the deep shades of the forest, and, like other air-feeding birds, is always found sitting nearly motionless."—"While its fissirostral habit of catching its food upon the wing, and the discovery of the broad-billed species (*P. platyrhynchus*), seem to us a conclusive argument for placing this genus in the Fissirostral order."—*Swains. Nat. Hist. and Classification of Birds*, ii. p. 141.

in their distribution; that which we have now under consideration, we do not know as inhabiting the continent at all. Mr. Swainson gives the Bahama isles generally as its native country; and in the locality of the specimens before us we have it stretching to the very south-eastern extremity of the West Indian islands, but we do not know if the species occurs also in Cuba, St. Domingo, &c., or continuously along the group; on the continent the first species which occurs in Guiana* and the Brazils is the old *P. Brasiliensis*.

Our active correspondent in Tobago has procured and forwarded to us skins and specimens in spirits of what we consider to be the *P. Bahamensis* of Swainson†, which have enabled us partially to examine its internal structure; but before noticing this or making any remarks upon the place the group should occupy in our system, we shall transcribe Mr. Kirk's observations upon their habits, which may be usefully compared with the notes from various authors which we have given beneath.

"This beautiful species, with his hair-like plumage and spatulated tail-feathers, is a very common and obtrusive bird in this island; and it may be fairly said that if they are passed unobserved it will be no fault of their own, for they will sit and look stupidly down upon any intruder until he comes within a few yards, when they generally accost him with their usual low hollow-sounded note, *Who, Who*, which with very little ingenuity may be converted into *Who are you?* and, indeed, reports are current of instances of their having been answered, in the belief that the question was put by a human being; and when the Prionites demanded over and over again 'Who are you?' in a dark and solitary grove, it is not a matter of surprise that a poor ignorant African (as the story goes) should, after giving an explanation which proved unsatisfactory, take to his heels and leave the 'king' in the undisputed possession of his forest.

"The *Prionites* of Tobago builds a nest, or rather occupies the cavity of some deserted yellow ant's nest, or other hole, generally in the bank of a road or gully, or *scour* by the side of some rivulet, though it does not follow that it should always be near water. The entrance is generally very small, from two to two inches and a half in diameter, and the hole is pierced from three to nine feet into the bank, sometimes directly in, at other times along the bank, parallel, and at no

* The specimens brought home by Mr. Schomburgk from Guiana were all *P. Brasiliensis*.

† Two centenaries and a quarter.—Lard. Cyclop., Animals in Menageries, p. 332.

great depth; but the aperture widens as it proceeds, especially where there is a turning or angle, otherwise it would be impossible to save the two centre feathers of the tail; at the extremity it is widened to about two feet in diameter, where about the month of May, without the slightest preparation, they deposit three or four dusky cream-coloured eggs, about the size of those of a pigeon.

“When the young have been hatched they remain in the nest until able to fly; they are supported by the parents, and are fed upon snakes, beetles, berries, &c., and in every nest which I have found there was below the young thousands of large maggots, bred and fed there I suppose by the nauseous fragments of insects left by the young birds. The young are easily tamed, and will eat mutton cut into small pieces, lizards, cock-roaches, &c. The sun appears oppressive to them, and when driven out of doors they strove always to regain the house, where with unerring aim they would dart upon the smallest insect moving upon the ceiling. They are exceedingly acute in sight, nothing that moved passing their observation. They do not assist with the feet in destroying life, but will hold a snake of two or three feet long in their saw-like bill, and continue to strike him against the ground until life is extinct, when they begin at one end and swallow him whole. I have also seen one with a very large lizard swallowed to the head and arms, which apparently could not be then got further.”

In reply to some additional queries, our correspondent again writes on the 22nd of March: “The *Prionites* never catch their prey upon the wing like the Flycatchers; they frequent dark solitary groves, and are fond of being in the vicinity of marshy gullies or rivulets; in such places I have often surprised them, sometimes singly and sometimes in pairs, with the bill and breast dirty as if they had been searching the earth for insects, the moist spots around bearing evident symptoms of having been so examined. When they seize a snake they never let go their hold, as if to renew it more securely, but turning the head to the right and to the left keep striking the snake sharply against the branch on which they are perched, for they, in a wild state, never remained on the ground a moment after I saw them catch their food. In speaking of the seizing of cock-roaches on the roof, I must be understood to refer to the young which I had domesticated; and in such cases the cock-roaches were not flying, but were running along the ceiling; when seized, the *Prionites* invariably alighted upon the floor, against which it would repeatedly strike the insect before swallowing. The domesticated *Prionites*

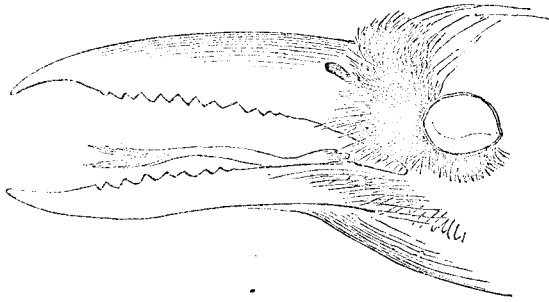
used at times to sit in our portico, from whence it would dart down into the flower-garden, seizing the lizards indiscriminately without regard to size; when hungry I have seen them kill and attempt to swallow one ten inches long; I have often extracted the lizard in such instances when the tail protruded from four to six inches out of the bird's mouth; at other times, when it had succeeded as far as the hind legs, and the bird appeared in a state of suffocation. They feed also on soft fruits; I took several large seeds from the stomach of one a few days since. The two spatulate tail-feathers are entire at the first moult, but when or how they become spatulate, I am sure no one in Tobago knows. The birds have always been reported to assist it with their bill, hence my anxiety to domesticate them for the purpose of ascertaining the fact; but in this I have always failed, for the tail had no sooner extended four or five inches than it was broken off by the cage or floor. One thing is certain, that at this season, viz. from October until May or June, we may search in vain for a specimen without the spatulate tail, while betwixt June and October they may be met with in abundance; this leads me to the conclusion that it is natural, and that they assume the spatulate appearance with the first moult and unassisted.”

The specimens of the Tobago Motmot which we have received, vary in length from seventeen to fourteen and a half inches; when compared with *P. Brasiliensis*, the blue colour encircling the crown covers less space on the occiput, the feathers are not so elongated, and the tint is pale or greenish at their base, and not of the deep and uniform cobalt of the Brazilian bird; the upper part of the plumage is nearly similar in tint, but the whole of the lower parts and under wing-covers are of a deep and uniform brownish-orange, relieved only by the black elongated feathers, which appear through nearly the whole group in a similar situation.

From the specimens in spirits* being rather soft and tending to decay, the examination of the soft structures could not be made satisfactorily. The whole muscular system exhibited little strong development; indeed the outward form of the bird (confirmed by our knowledge of its habits) shows no provi-

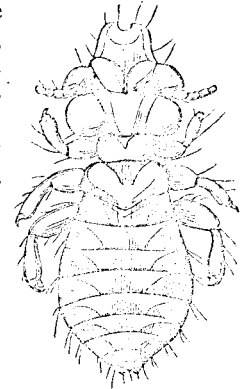
* In sending home specimens in spirits care should be taken not to place too many in the same jar or barrel; a certain quantity of spirits will only preserve a certain portion of animal matter, and the desire to fill the vessel often proves destructive to the whole. It should also be noticed, that partial putridity or decay has not commenced; and if the vessel has remained for some time in a warm climate, it will tend much to the preservation of the specimens to renew the spirits before they are despatched, taking out at the same time any which may seem to be soft or not keeping.

sions for exertion or rapid flight; the skeleton, with the exception of the bones of the head and neck, is likewise as weakly formed. The stomach is small and oval; the proventriculus gradually narrowing into the œsophagus, which is wide and dilated; when distended the stomach appears muscular without, but the walls when cut through show a moderate thickness only. The inner coating is rather coriaceous, and separates easily and cleanly from that next to it. The intestinal canal is narrow, but was too much spoiled to be distinctly made out. The cæca appeared long, and to be given off nearly at the extreme end, and the cloaca is very large. The tongue is lengthened, bifid for half an inch, and is slightly feathered on the sides; the muscles of the inferior larynx, so far as observed, resemble in number and position those of the Corvidæ.



In placing *Prionites* among the Fissirostres and near to the Rollers, we believe that Mr. Swainson will ultimately be found to be correct; their weak formation and the internal structure, the wide gape and partially bristled rictus, together with their habits, all tend to this place; at the same time their analogies towards the Crows are extremely strong. The elongated form and short wings of *Pica* and *Crypsirina* remind us of *Prionites*, and it is remarkable that in both of these there is a narrowing of the centre tail-feathers, where they are spatulate in the last. In the typical crows the bill is often ragged on the edges; they are carnivorous and insectivorous, and many feed eagerly on fruits and grain, while reptiles are often seized by the stronger species; the tongue is slightly bifid, and is fimbriated on its edges,—the commencement of that pencilled or feathered form which more particularly belongs to those species which live much on sweet or pulpy fruits. One other remarkable analogy we would notice, and one perhaps by which it has not yet struck ornithologists to trace the alliance between the various groups. The birds in spirits afforded

numerous specimens of *Nirmi*, some of which were sent to Mr. Denny, who is now engaged on a monograph of the British species of this very curious race of insects. That gentleman obligingly furnished the drawing for the annexed wood-cut, and the following remarks: "It belongs to one of the genera most numerous in species; the most striking character is the great size of the trabeculae or moveable organs before the antennæ; I know of no species in which they are so large or thick; the nearest approach is in those species infesting the Crow family; you will see these organs thick and strong in the *Nirmi* from the Jay, Raven, Carrion Crow, Rook, and Jackdaw."



Docophorus Prionitis, from
P. Baluensis.

The spatulate form of the tail-feathers is another part of the structure of this group which seems to have attracted general observation. It is the popular notion in their native country that the bare portions of the tail-feathers are cut by the bird itself*, which, for this purpose, has been provided with a serrated bill. The observations of Mr. Kirk all tend to disprove this, and we would certainly consider it as merely a state of adult plumage, and when we look around to other groups we see corresponding structures to be far from uncommon. The utility or design of it is not at first apparent, except as an indication of maturity. It is common to both sexes, and does not appear before the second moult; previously the feathers are entire, but there is a narrowing of the web where it becomes afterwards stripped off, and in one or two examples we have seen a lateral feather stripped in the same manner with those in the centre. The bill may be used to dress the feathers, but the serratures on its edges are at once explained by Mr. Kirk's notes, and must prove eminently useful in holding fast the reptiles which constitute a great

* "This bird seems to suppose that its beauty can be increased by trimming the tail, which undergoes the same operation as our hair in a barber's shop, only with this difference, that it uses its own beak, which is serrated, in lieu of a pair of scissors; as soon as his tail is full-grown, he begins about an inch from the extremity of the two longest feathers in it, and cuts away the web on both sides of the shaft, making a gap about an inch long; both male and female adornize their tails in this manner, which gives them a remarkable appearance among all other birds."—*Waterton's Wanderings*, p. 127.

portion of their food; in different species the serratures vary in their development, being in some irregularly broken, while in others they are regularly serrated. In *Crypticus* they are very minute, and with the dilated form of the bill may be adapted for seeking a peculiar kind of food.

XXXVI.—*On the recent Additions to the Flora of Ireland.*
By CHARLES C. BABINGTON, Esq., M.A., F.L.S., &c.

BELIEVING that a catalogue of the additions to the Flora of Ireland, made since the publication of Mr. Mackay's work, would be an interesting Supplement to the paper by Dr. Hincks, on 'The Early Contributions to the Flora of Ireland,' contained in recent Numbers of the Annals, I have, as far as lies in my power, collected together the scattered notices of newly-discovered plants, natives of that country, and now present them in a connected form.

1. *Cerastium atrovirens*. Common on the sea-coasts, *C. C. B.*
2. *Elatine Hydropiper*. Near Newry, *Mr. Thompson*, of Belfast; and at the Lagan Canal, where it enters Lough Neagh, *Mr. D. Moore*, Hook. Br. Fl. 166.
3. *Rubus carpinifolius*. At Ma'am in Cunnamara, Galway, in Aug. 1835, *C. C. B.*, Mag. of Nat. Hist. ix. 129.
4. *R. Kahleri* β . *fusco-ater*. At the same place and time as the last, *C. C. B.*
5. *Callitriche pedunculata a. vera*. The Mullet, Mayo, July, 1836, *C. C. B.*, Mag. of Zool. and Bot. ii. 124.
6. *C. pedunculata* β . *sessilis*. Newport, Mayo, Aug. 1840, *C. C. B.*
7. *C. platycarpa*. Newport and Achil Isle, Mayo; and near Sligo, Aug. 1840, *C. C. B.*
8. *Fedia auricula*. Oughterard, Galway, Aug. 1835, *C. C. B.*, Mag. Nat. Hist. ix. 129.
9. *Anthemis maritima*. Bear Haven in S.W. of Ireland, *Hooker*, Br. Fl. 308.
10. *Leontodon (Apargia) alpinus* (Jacq.). *Mr. J. Ball* found a single specimen which appeared to agree with the description of this plant better than with that of any other species on the mountains south of Glen Cree, in Wicklow, in 1837, Annals of Nat. Hist. ii. 29.
11. *Erica vagans*. Islet on the coast of Waterford, near Tramore, *Dr. Burkett*, Hook. Br. Fl. 159.
12. *Cuscuta epilinum*. Near Newport, Mayo, Aug. 1840, *C. C. B.*

Mr. Mackay informs me that this is identical with his *C. europæa*.

13. *Myosotis repens*. Cunnamara, Galway, Westport and the Mullet, Mayo, July, 1836, *C. C. B.*, Mag. Zool. and Bot. ii. 124. Glen Cree, Wicklow, 1837, *Mr. J. Ball*, Ann. Nat. Hist. ii. 29.
14. *Orobanche barbata*. On the roots of ivy in many places, *C. C. B.* I learn from *Mr. Mackay* that the true *O. minor*, which is parasitical upon clover, has not been found in Ireland, and that therefore the *O. minor* of the Fl. Hibern. is this plant.
15. *Lamium intermedium*. Near to the foot of Ben Bulben, Sligo, 1837, *Mr. J. Ball*, Ann. Nat. Hist. ii. 34.
16. *Atriplex erecta*. In fields in many places, *C. C. B.*
17. *A. rosea*. On the sea-shore, not uncommon, *C. C. B.*
18. *Polygonum viviparum*. Ben Bulben, Sligo, 1837, *Mr. J. Ball*, Ann. Nat. Hist. ii. 34. I am informed that a notice of its discovery in this place by *Mr. Murphy* exists in the Mag. of Nat. Hist., but I have been unable to find it, and the plant is omitted in the Flora Hibernica.
19. *Euphorbia Peplis*. Garrieries Cove, near Tramore, Waterford, 1836, *Miss Trench*, Mag. Zool. and Bot. ii. 124.
20. *Salix ambigua*. Tully, Cunnamara, Galway, Aug. 1835, *C. C. B.*, Mag. Nat. Hist. ix. 129.
21. *Juncus nigritellus*. Bogs between Sligo and Ballina, 1837, *Mr. J. Ball*, Ann. Nat. Hist. ii. 34.
22. *Potamogeton oblongus*. Common, *C. C. B.*
23. *P. longifolius*. In the narrow part of Lough Corrib, between Ma'am and Cong, Galway, *Mr. J. Ball*, Supp. to Eng. Botany, f. 2847.
24. *Carex canescens*. On the shores of Lough Neagh, 1836, *Mr. D. Moore*, Comp. Bot. Mag. i. 307. Under the name of *C. Buxbaumii*.
25. *Calamagrostis lapponica*. Lough Neagh, 1836, *Mr. D. Moore*, Comp. Bot. Mag. ii. 191.
26. *Kalveria valesiaca*. Ben Bulben, Sligo, 1837, *Mr. J. Ball*, Ann. Nat. Hist. ii. 34. Having myself gathered this plant on Ben Bulben during the last summer, I have come to the conclusion that it is not *K. valesiaca*, but only a remarkable alpine form of *K. cristata*. It has a much denser spike than is usual in *K. cristata*, an elongated ascending stem thickly clothed with the dead leaves of the preceding year, and glabrous leaves which are sometimes ciliated.