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Further Notes on Andrena

T. D. A. Cockerell

New Mexico Agricultural Experiment Station

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prevails on the mountains among which the river Roughty takes its rise near Kenmare, Co. Kerry. Here it would seem that the moorland surroundings and the dark rocks upon which it rests have induced adaptive coloration. I took a large series here to test the uniformity of the pattern, which was remarkable.

CIDARIA SUFFUMATA, *Hb.*—Generally distributed, and usually abundant. It varies considerably, the median and basal bands being sometimes of a very blackish brown, with a pale trait on the costa; but usually it is of lighter tint, and somewhat variegated with sinuous shading. The whitish bands on each margin of the median dark band are often darkened with fuscous, a transition stage to the var. *piceata*, St., which I have not taken.

(To be continued.)

FURTHER NOTES ON *ANDRENA*.

By T. D. A. COCKERELL.

Andrena perarmata, n. sp.

♂. Length 9 to 10 mm., black; the head and thorax clothed with rather dense very long mouse-coloured pubescence, becoming dull white on the ventral surfaces, and black at the sides of the face and round the antennæ; some few black hairs also on the scutellum. *Head large, broader than thorax, facial quadrangle much broader than long, cheeks broad, and produced beneath into a right angle; mandibles long and slender, ferruginous at tip, tuberculate at base, and produced beneath at the base into a prominent tooth, deeply notched within at some distance from the tip. Face and front dullish, clypeus strongly and quite closely punctured, area in front of the ocelli striate; antennæ long, reaching to metathorax, wholly dark. Thorax dull, with a minutely roughened surface, enclosure of metathorax minutely roughened and ill-defined; tegulæ shining piceous; wings hyaline, iridescent, the apices faintly dusky; nervures and stigma brown, the stigma very dark; second sub-marginal cell small; legs black, hind tarsi dark brown; pubescence of legs long, mouse-colour; anterior coxæ large, swollen in front; tarsi very slender. Abdomen shining, microscopically tessellate and hardly punctured, with thin and sparse mouse-coloured pubescence, not forming bands or concealing the surface; some short black hair, not readily noticed, on dorsum of second to fifth segments; hair of apex tinged yellowish.*

Hab. Seattle, Washington (T. Kincaid). Many specimens. March 15th, 1897; March 16th, 1896.

Near to *A. mandibularis*, Rob., but that is smaller (8 mm.), with sparsely punctured clypeus and honey-yellow nervures. *A. fragilis*, Sm., differs at once by the shining thorax and pale testaceous nervures. *A. nigrihirta* (Ashm., as *Cilissa*) is also in some respects similar, but has not the peculiar head-characters

of our insect. The European *A. ovina*, Kirby (male), also reminds one a little of *A. perarmata*.

In the Mesilla Valley, New Mexico, I have taken a wild bee (*Halictus pruinosis*) as early as March 18th, but it is quite the end of March before the early Andrenidæ are well on the wing. Here we have *A. perarmata* appearing at Seattle, so much further north, as early as March 15th, and in quantity!

Andrena cærulea, Smith, var. nov. *terrata*.

♀. Length about 9 mm. Differs from Smith's description of *cærulea* by the quite long erect pubescence of the head and thorax being white, with some black hairs intermixed on the sides of the metathorax, and especially at the sides of the face. The pubescence of the legs is mostly sooty, but that on the anterior femora is entirely white, and the floccus of the posterior femora is pallid. The greenish fringe of the microscopically tessellate abdomen is quite marked, and the whole insect is rather of a greenish blue. The wings are hyaline, not noticeably darker at the apex, but throughout with a slightly dusky tint. Nervures and stigma dark brown, stigma pallid in the middle. There are no distinct hair-bands, but the sides of the abdomen show some shining white hairs; the venter exhibits three interrupted white hair-bands; the pubescence of the apex might be called obscure fulvous; it is a kind of pale reddish chocolate. Flagellum after the third joint brownish beneath; clypeus tessellate, and with sparse shallow punctures, its disc showing prismatic colours—purple, green, and blue. Process of labrum broad and truncate. Mesothorax dull, minutely roughened, with scarcely observable shallow punctures; basal enclosure of metathorax roughened, scarcely defined at all. Tegulæ dark chestnut colour, with some blackish hairs; some blackish hair also occurs on the sides of the prothorax.

Hab. Olympia, Washington (T. Kincaid). May 23rd, 1894. The following table separates the females of the blue *Andrena* of the north-west:—

Pubescence of apex of abdomen black, of face also black	<i>nigrocærulea</i> , Ckll.
Pubescence of apex of abdomen brownish, of face mostly pale.	
Pubescence of thorax ochraceous, on metathorax black	<i>cærulea</i> , Sm., 1879.
Pubescence of thorax white, the few black hairs inconspicuous	<i>terrata</i> , Ckll.

Andrena melanochoa, n. sp.

♀. Hardly 7 mm. long, black, with short and thin dull whitish pubescence, inclining to mouse-colour dorsally. Facial quadrangle broader than long; clypeus minutely tessellate, with sparse but strong punctures; vertex granular, front below ocelli very finely striate; antennæ dark, feebly tinged with ferruginous beneath towards apex; first joint of flagellum as long as the two next together; mandibles stout with bifid dark ferruginous tips; process of labrum broad, trun-

cate with sloping sides; mesothorax dullish, minutely tessellate, hardly punctured; enclosure of metathorax roughened, scarcely at all defined; tegulae fuscous; wings smoky hyaline, nervures and stigma reddish brown, second submarginal cell broader at top than third; legs black, with shining pale brownish pubescence; abdomen tessellate and impunctate; apical margins of segments 2 to 4 with thin white hair-bands, very broadly interrupted on 2 and 3, and narrowly on 4; apex with fulvous pubescence.

♂. Similar to the female. Face all black; pubescence longer and paler; at apex of abdomen dull white; abdomen not obviously fasciate; small joints of tarsi rufescent; wings more yellowish; stigma dull amber-colour with a dark margin.

Hab. Olympia, Washington (T. Kincaid). May 9th to 25th. This little species has the aspect of *A. zizia* and *illinoensis*, but has none of the greenish colour of these species. Provancher's *A. vestita*, described only in the male, must be very similar to *melanochroa*, but will be known by the somewhat smaller size and the ferruginous-red tarsi.

Andrena macgillivrayi, Ckll.

Mr. Kincaid sends two females from Washington State, one from Seattle, May 11th, the other Olympia, June 2nd. The Washington form is a little larger (long. 11-12 mm.) than the type, the stigma is somewhat darker, and the face is a trifle broader. All the essential specific characters are the same as in the New York (Ithaca) type.

Mesilla Park, New Mexico, U.S.A.

TORTRICES OCCURRING IN THE VICINITY OF THE CHESHAM LINE.

ALTHOUGH there are a good many species to be obtained even in the neighbourhood of the stations between the Baker Street terminus and Willesden Green, it is not until we get beyond the latter and well into the country that we need think of alighting in quest of Tortrices. There are, however, some very decent species to be found in the neighbourhood of Kingsbury and Neasden Station, and a few hours may be pleasantly and profitably spent in a ramble around, especially if we turn in the direction of the Brent and Kingsbury old church. Harrow and Pinner have each something to offer, but we shall do better at Northwood, and it is this locality and the country around Chalfont Road that I have most frequently collected in. The latter is on the chalk and well wooded. Although Mill Hill on the Midland system does not properly belong to the district more immediately under consideration, I have included it because it