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XLIII.—Descriptions of Aphides

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XLIII.—*Descriptions of Aphides*. By FRANCIS WALKER, F.L.S.

[Continued from p. 203.]

49. *Aphis Ulmariae*, Schrank.*Aphis Ulmariae*, Schrank, Faun. Boic. ii. 1. 111. 1221.*Aphis Onobrychis*, Fonscol. Ann. Soc. Ent. x. 169. 9.*Aphis Pisi*, Kalt. Mon. Pflanz. i. 23. 11.*Aphis Lathyri*, Sir Oswald Mosley, Gard. Chron. i. 684.

This species, the green Dolphin, is one of the largest of the group; it feeds on the following plants: *Spiræa Ulmaria*, *Genista anglica*, *Spartium Scoparium*, some other species of these genera and of *Cytisus*, *Colutea arborescens*, *Lathyrus odoratus*, *L. pratensis*, *Pisum sativum*, *P. arvense*, *Phaseolus vulgaris*, *P. multiflorus*, *Vicia Sepium*, *V. sativa*, *V. Faba*, *Ervum*, *Hedysarum*, *Onobrychis*, *Lotus corniculatus*, *L. uliginosus*, *Trifolium pratense*, *T. repens*, *T. filiforme*, *Ononis repens*, *O. hircina*, *Geum urbanum*, *Epilobium montanum*, *Capsella bursa-pastoris*, *Chærophyllum temulum*, *C. sylvestre*; the *Geum* and following species are inserted on the authority of Kaltenbach. It thus manifests a decided preference to leguminous plants, and may sometimes be found in green-houses, where, as usual, it appears much earlier than in unsheltered situations. It feeds also on *Artemisia Absinthium* and on *Tanacetum vulgare*.

The viviparous wingless female. It is large, yellowish green, shining, slightly oval and convex, rather long and narrow, and having three green stripes along the back: the feelers are brown, green at the base, and nearly as long as the body: the eyes are dark brown: the mouth is pale green; its tip is brown: the nectaries are pale green, and nearly as long as one-fifth of the body; their tips are brown: the tip of the abdomen is long, and resembles a short tail. When young it is tinged with white, and has three vivid green stripes along the back: its feelers are yellow, with brown tips.

1st variety. Grass-green: the feelers are black, green at the base, and longer than the body: the eyes and the tip of the mouth are black: the nectaries are brown, green at the base, black at the tips, and as long as one-fourth of the body: the legs are very long; the thighs are green with reddish brown tips; the shanks are dull yellow; their tips and the feet are black.

2nd variety. Pale green.

3rd variety. Pale yellowish green: the nectaries are pale yellow; their tips are black: the thighs have pale red tips.

4th variety. The feelers are black except the base, which is yellow or green: the mouth is also green.

5th variety. Yellowish green with a lively green stripe on the back, and more rarely with one on each side.

6th variety. Grass-green : the feelers are pale yellow, green at the base and much shorter than the body ; the tips of the third and of the fourth joints and the whole of the latter joints are brown : the eyes are dark red : the mouth is pale yellow with a brown tip : the legs are pale green or pale yellowish green ; the thighs are pale green towards the base ; the knees, the feet and the tips of the shanks are brown.

7th variety. Pale green mottled with a darker colour : the feelers are pale yellow, and longer than the body ; the tips of their joints are brown.

8th variety. Body slightly covered with a white bloom or powder.

9th variety. Of a delicate rose-colour mottled with yellow : the head is yellow : the limbs are white ; their tips are black.

10th variety. Green mottled with red.

11th variety. With a purple tint.

The young one is flat and linear, and has a rim on each side of the body ; its colour varies from pale green to pale yellow or to pale red ; the tips of the limbs are brown.

12th variety. The body is pale yellowish green, and much more slender than in the other varieties ; the feelers are pale yellow, longer than the body ; the tips of their joints are black : the eyes are bright red : the mouth is pale yellow : the nectaries are pale green, and as long as one-fourth of the body, their tips are black : the tip of the abdomen is pale yellow : the legs are hairy, yellow, and very long ; the knees, the feet, and the tips of the shanks are black. On the tansy, and on the wormwood.

The viviparous winged female. When young it is pale or bright yellow, and has a dull green stripe along the back : the nectaries are as long as one-tenth of the body : the limbs except their tips are very pale. Sometimes the feelers of the pupa are black, pale yellow towards the base : its mouth is pale yellow with a black tip : the nectaries are almost black : the legs are pale yellow ; the knees, the feet, and the tips of the shanks are black : the rudimentary wings are pale green.

The wings are unfolded at the end of May, and the insect is then green : the chest is tinged with buff : the feelers are black, pale green towards the base : the fourth joint is much more than half the length of the third ; the fifth is shorter than the fourth ; the sixth is hardly half the length of the fifth ; the seventh is nearly thrice the length of the sixth : the wings are colourless, and longer than the body ; the wing-ribs, the rib-veins, and the wing-brands are pale green or pale yellow ; the other veins are dull yellow or brown, and their tips are very slightly clouded.

Variations in the wing-veins. The upper branch of the second fork is obsolete except at its tip where it joins the wing-border. The front is rather narrow, and has on each side of it a tubercle on which the feelers are seated ; its tip is rather oblique : the first joint of the feelers is slightly curved, and is narrower and a little shorter than the tubercle which supports it ; the second is more than half the length and the breadth of the first ; the third is much narrower than the second ; the fourth is a little shorter than the third ; the fifth is a little shorter than the fourth ; the sixth is rather more than one-third of the length of the fifth ; the seventh is full as long as the third : the fore-chest is rather long, narrower in front, convex on each side : the nectaries decrease in thickness from the base to the tips : the legs are long and slender ; the shanks and the second joint of the feet are curved. The space between the first and the second forks of the third wing-vein is variable as to length in this species.

The winged male. The body is black : the feelers are longer than the body : the eyes are dark red : the nectaries are nearly one-fourth of the length of the body : the legs are long ; the base of the fore-thighs is yellow : the wing-ribs and the rib-veins are also yellow ; the wing-brands are very pale brown ; the other veins are brown.

1st var. Black : the fore-border, the hind-border, and the underside of the fore-chest are reddish brown : the abdomen has the same colour : its disc is black, and it has a row of black spots on each side : the mouth is dull yellow with a black tip : the nectaries are about one-fifth of the length of the body : the base of the thighs is pale yellow ; the shanks except their tips are dark yellow.

2nd var. Brown : the sides of the chest and the abdomen are yellow ; the latter has a broad brown stripe along the middle, and a row of black dots on each side : the mouth and the nectaries are yellow with black tips, and the latter are as long as one-fourth of the body : the legs are dull yellow ; the knees, the feet, and the tips of the shanks are black.

50. *Aphis Rubi*, Kaltenbach.

Aphis Rubi, Kalt. Mon. Pfl. i. 24. 12.

This species feeds on *Rubus cæsius*, *R. fruticosus*, *R. corylifolius*, *R. discolor*, *R. Idæus*, *Geum urbanum*, and other species of that genus, and on *Epilobium montanum*. The young ones in the body of the wingless female sometimes amount to twenty and upwards, of various sizes.

The viviparous wingless female. Light green, oval, convex, shining, more or less tinged with yellow towards the head : the feelers are brown, pale green at the base, and a little longer than

the body: the eyes are dark brown: the mouth is pale green; its tip is brown: the nectaries are dull green, and as long as one-fourth of the body; their tips are black: the tip of the abdomen is long, compressed and curved: the legs are pale green, long and slender; the knees, the feet, and the tips of the shanks are brown.

1st variety. Grass-green, spindle-shaped, with three darker stripes along the back: the feelers are yellow with black tips: the mouth is yellow; its tip and the eyes are black: the nectaries are pale yellow with black tips, and more than one-fourth of the length of the body: the legs are yellow; the feet and the tips of the shanks are black.

2nd variety. Pale red, powdered with white: the nectaries and the tip of the mouth are black: the legs are dull white; the thighs are sometimes green, their tips are brown; the feet and the tips of the shanks are black.

3rd variety. Like the preceding, but the nectaries are brown: the thighs are pale green with brown tips.

4th variety. Dark red.

5th variety. Red mottled with green.

6th variety. Green, slightly covered with a white bloom: the feelers are black, but become yellow towards the base.

7th variety. Green. 8th var. Lilac. 9th var. Rose-colour. 10th var. Deep red. 11th var. Body mottled with the above colours. 12th var. Black.

At the end of May it swarms on the bramble and there attains its largest size; the shoots are very much adorned with its bright and many-coloured groups, and the offspring assume the hues of their respective parents.

The middle of the forehead is slightly convex, and there is a tubercle at the base of each feeler: the feelers are nearly as long as or much longer than the body; the fourth joint is more than half the length of the third; the fifth is very nearly as long as the fourth; the sixth is much less than half the length of the fifth; the seventh is usually more than thrice the length of the sixth, but it varies from thrice to six times the length of that joint, and attains its greatest length in the winged insect: the nectaries are fully developed and slightly curved: the tip of the abdomen forms a short tube: the fore-legs are not much shorter than the hind-legs, and all the shanks are slightly curved.

13th variety. Inhabits the raspberry in October, is quite white, and its colour accords well with the underside of the leaf where it dwells: the body is long and narrow: the feelers are very much longer than the body: the tip of the mouth is red, as if dipped in raspberry-juice, and part of the stomach has the same colour, being visible through the almost transparent body when the in-

sect is preserved in Canada balsam : the tips of the joints of the feelers, the feet, and the tips of the shanks are dark brown : the legs are very slender.

When feeding on *Geum urbanum*, the common Avens, it is usually more slender than when on the bramble, and the feelers are very much longer than the body. The unborn young ones sometimes amount to thirty in number, but are less numerous in the body of the winged female.

14th variety. The body is green : the head is yellow : the feelers are black, dull yellow at the base, and very much longer than the body : the eyes are red : the mouth is yellow with a black tip : the nectaries are pale green with brown tips, and longer than one-fourth of the body : the legs are pale yellow ; the feet and the tips of the thighs and of the shanks are black.

15th variety. Green, powdered with white : the feelers are yellow, pale green at the base, black towards the tips : the mouth is pale yellow, its tip and the eyes are black : the nectaries are pale yellow with black tips, and as long as one-fourth of the body : the thighs are pale green with reddish brown tips ; the shanks are yellow, their tips and the feet are black.

16th variety. The body is pale yellow with a green stripe along the back : the limbs are white : the feelers are as long as the body ; the tips of the latter joints are black, as are also the eyes and the tip of the mouth : the nectaries have black tips, and are as long as one-sixth of the body : the tips of the feet are black.

The viviparous winged female. It is pale green : the head and the disc of the chest are buff : the disc of the breast is brown : there are buff bands across the abdomen, and a row of brown spots on each side of it : there is also a dark spot at the tip of the chest or on the base of the abdomen : the feelers are black, pale yellow at the base, and as long as the body : the eyes are red : the mouth is pale yellow with a brown tip : there is often a distinct dark line across the fore-chest : the nectaries are pale yellow, and nearly as long as one-fourth of the body ; their tips are brown : the legs are pale yellow : the knees, the feet, and the tips of the shanks are brown : the wings are colourless and much longer than the body ; the wing-ribs and the rib-veins are pale green ; the wing-brands are pale brown ; the veins are brown and strongly marked : the feelers are usually much longer than the body : the widening of the main vein begins a little before two-thirds of the length of the wing : the brand is irregularly spindle-shaped, and the fourth vein springs from beyond the middle of its hind-border : the third vein approaches very near its source in the main vein before it becomes obsolete ; it is forked before one-third of its length, and again forked before or shortly after

two-thirds of its length, but the length of the branches of the second fork is variable.

1st variety. This is pale and very small: the feelers are thicker than usual till the seventh joint, which is proportionably more slender, and is at least eight times the length of the sixth joint: the veins are very deficient, for in one wing the fourth vein is obsolete long before it reaches the border, and in the other wing the third vein has no second fork, and the lower branch of its first fork is very short, being obsolete before one-third of its way towards the border of the wing.

2nd var. The body is green: the disc of the chest and that of the breast are pale reddish brown: there is a row of black spots on each side of the abdomen: the feelers are a little shorter than the body: the mouth is pale green with a brown tip; the nectaries are black, and as long as one-fifth of the body: the thighs are pale green with black tips; the feet and the tips of the shanks are also black: the wing-ribs are yellow; the brands are brown.

3rd var. Like the preceding, but the disc of the chest and that of the breast are black.

4th var. The head and the chest are black: the fore-border and the hind-border of the fore-chest and the fore-breast are dull yellow: the abdomen is dull greenish yellow with short broken black bands on its disc, and a row of black dots on each side: the mouth is yellow, its tip and the nectaries are black: the legs are pale yellow; the feet, the tips of the shanks, and the thighs from the middle to the tips are black: the wing-ribs and the rib-veins are pale yellow; the brands are dull olive-colour.

5th var. The body is dull green: the head, the disc of the chest and that of the breast are brown: the feelers are pale green at the base, and a little longer than the body: the eyes are dark red: the mouth and the nectaries have black tips, and the latter are as long as one-fifth of the body: the legs are dull yellow; the knees, the feet, and the tips of the shanks are black: the wing-ribs and the rib-veins are pale yellow.

6th var. The body is grass-green: the disc of the chest and that of the breast are pale brown: the abdomen has a row of very small dark dots on each side: the feelers are brown, green at the base, and as long as the body: the eyes are dark brown: the nectaries are dull green, and between one-fourth and one-fifth of the length of the body.

7th var. While a pupa its colour is bright grass-green: the feelers are pale yellow with brown tips, and are nearly as long as the body: the disc of the chest is pale buff: the nectaries are pale yellow with brown tips: the thighs are pale green; the shanks

are pale yellow ; the feet are brown : the rudiments of the wings are yellowish white. In the winged insect the disc of the chest and that of the breast are streaked with brown : the feelers are pale yellow ; the tips of the joints are brown : the nectaries are black : the wing-ribs and the rib-veins are pale yellow.

Variations in the wing-veins.—1st. The lower branch of the first fork is forked again at its tip. 2nd. The lower branch of the first fork is very short ; the upper branch passes to the wing-border, but has no second fork.

The oviparous wingless female. The body is pale bright yellow, oval, convex and shining : the head is buff : the feelers are yellow, and much longer than the body ; the tips of their joints are black : the eyes are dark red : the mouth is pale yellow with a black tip : the nectaries are yellow, darker at the base, and as long as one-fourth of the body ; their tips are black : the legs are pale yellow ; the knees are brown ; the feet and the tips of the shanks are black.

1st var. Green : the feelers are black towards the tips and nearly as long as the body : the nectaries are nearly as long as one-fifth of the body : the knees are black.

2nd var. The body is yellowish green : the feelers are black, yellow at the base.

3rd var. The body is greenish yellow : the head is pale red : the eyes are black : the nectaries are dark yellow with black tips, and more than one-fifth of the length of the body.

4th var. The body is white with a very slight yellow tinge : the feelers are black, white towards the base, and longer than the body.

The winged male. This pairs with the oviparous female in the early part of November : it is brown : the fore-border, the hind-border, and the underside of the fore-chest are dark yellow : the feelers are black, and much longer than the body ; the mouth is pale yellow with a black tip : the nectaries are black, and about one-fourth of the length of the body : the legs are yellow ; the feet, the tips of the thighs and of the shanks, and the hind-thighs from the middle to the tips are black : the wings are very much longer than the body ; the wing-ribs are pale yellow ; the brands and the veins are brown.

1st var. The body is black : the fore-border and the hind-border of the fore-chest, the fore-breast, and the abdomen are red : the feelers are black, and much longer than the body : the nectaries are black.

51. *Aphis Urticæ*, Schrank.

Aphis Urticæ, Schrank, Faun. Boic. 106. 1186 ; Kalt. Mon. Pfl. i. 13. 4.

Urticifex, Amyot, Ann. Soc. Ent. 2^{me} série, v. 475.

It feeds on *Urtica dioica*, *U. urens*, *Geranium Robertianum*, *Malva sylvestris*, *M. moschata*, and *Chelidonium majus*. On the nettle it is very abundant at intervals throughout the year, and multiplies in the winter when the weather is mild.

The viviparous wingless female. When very young it is almost white or pale yellow with a buff tinge towards the head, and having a large green spot at the base of each nectary: when full-grown it is green, oval, convex, smooth, sometimes shining, sometimes covered with white powder: the feelers are white, and more or less longer than the body; the tips of the joints and the whole of the latter joints are brown: the mouth is pale green with a brown tip, and reaches to the middle hips: the eyes are bright red: the nectaries are pale green with black tips, and from one-fourth to one-fifth of the length of the body: the legs are long and pale green; the thighs are paler than the shanks; the knees, the feet, and the tips of the shanks are brown.

1st var. The body is white with green bands across the back: the feelers are pale green; the tips of the joints are pale brown: the eyes are dull red: the mouth is pale yellow with a black tip: the nectaries are white with brown tips: the legs are white; the knees, the feet, and the tips of the shanks are pale brown.

2nd var. The body is pale green with three vivid green stripes along the back: the feelers are pale yellow; the tips of the joints are black: the eyes are brown: the legs are pale yellow; the knees, the feet, and the tips of the shanks are black.

3rd var. The body is greenish yellow. 4th var. Green: the head is nearly white. 5th var. Dark green. 6th var. Pale red. 7th var. Rose-colour. 8th var. Pink. 9th var. Dull dark red. 10th var. Gray. 11th var. Lilac. 12th var. Purple.

The young ones in the body amount to twenty and upwards, of various sizes.

The front of the head is straight and bristly: the first joint of the feelers is very slightly curved, the inner side being convex; it is longer and much narrower than the tubercle on which it is seated; the inner side of the tip of this tubercle forms nearly a right angle; the second is not half the length nor the breadth of the first; the third is much more slender than the second; the fourth is much shorter than the third; the fifth is much shorter than the fourth; the sixth is less than one-third of the fifth; the seventh is longer than the third: the fore-legs are not much shorter than the hind-legs, whose shanks are but very slightly curved.

The viviparous winged female. In this, as in the wingless female, there are many varieties of colour, but the head and the chest are usually pale red; their discs, and sometimes the whole of the former, are brown: the abdomen is green: the feelers are black;

the first and the second joints are dull reddish green, or pale red ; the base of the third joint is almost white : the nectaries are pale yellow with brown tips : the wings are colourless ; the wing-ribs are pale green, or almost white ; the brands are dull yellow or pale brown ; the veins are brown ; the third vein is as usual obsolete at its source ; it is slightly curved, and forms two very obtuse angles where it casts off its forks ; the distance between these forks is variable ; the first begins before one-third, the second before or after two-thirds of the length of the wing ; the third and the fourth veins sometimes run very near together, but are usually more diverging.

52. *Aphis Vinæ*, n. s.

The structure of this species very much resembles that of *A. Urticæ* ; it is rather smaller ; the feelers, especially the seventh joint, are shorter ; the tubercles at their base are less developed ; the nectaries are also a little shorter. It is abundant on *Vinca major*, the greater periwinkle, in the month of May near London.

The viviparous wingless female. The body is pale green, oval, convex, smooth and shining : the feelers are very pale, longer than the body ; the tips of the joints are brown ; the fourth joint is shorter than the third ; the fifth is shorter than the fourth ; the sixth is less than one-third of the length of the fifth ; the seventh is longer than the third : the eyes are dark brown : the mouth is pale yellow with a brown tip : the nectaries are pale green with brown tips, and about one-fifth or one-sixth of the length of the body : the legs are pale yellow, long and slender ; the knees, the feet, and the tips of the shanks are brown.

The viviparous winged female. This much resembles the preceding form, but presents the usual difference in structure, and in the darker colour of the head, of the chest, of the breast, and of the feelers.

53. *Aphis Malvæ*, Sir Oswald Mosley.

Aphis Malvæ, Sir Oswald Mosley, Gard. Chron. i. 684.

A. Pelargonii, Kalt. Mon. Pflanz. i. 21. 10.

This is a very common species, and feeds on a great variety of plants, either wild, or cultivated in gardens and in greenhouses ; among these are *Pelargonium*, the cultivated species, *Malva sylvestris*, *Primula veris* and some cultivated species of that genus, *Aquilegia vulgaris*, *Bellis perennis*, *Rumex obtusifolius*, *Saxifraga siberica*, *Erodium Cicutarium*, *Geranium Robertianum*, *G. molle*, *G. pusillum*, *G. Phæum*.

The viviparous wingless female. When young it is dull green ; the feelers, nectaries and legs are darker : the eyes are brown :

the feelers are more than half the length of the body, whose segments are short, transverse, and nearly equal in size: the nectaries are about one-sixth of the length of the body: its colour presents the following varieties:—

1st var. The head is almost brown.

2nd var. The body yellowish green.

3rd var. The body bluish green.

4th var. The body whose skin has been lately shed is light delicate green, inclining to white towards the head: the limbs are also white with the exception of the black tips of some of the joints of the feelers.

5th var. The body is deep green: the head is nearly yellow.

As the insect grows, its body discovers a paler and brighter green colour, and is less linear, and more convex, and shining, the sutures between the abdominal segments become less distinct, and the rim on each side of the abdomen is more conspicuous.

6th var. Yellow in front, deep green behind, having two rows of dark dots along the body: the feelers are pale yellow; their tips are brown: the tips of the nectaries are also brown: the feet and the tips of the thighs and of the shanks are black.

It also varies slightly in shape, and in the length of the feelers, which are a little longer or a little shorter than the body. The autumnal young are sometimes bright pale yellow, except the nectaries, the feet, and the tips of the feelers, which are black.

The viviparous winged female. It is green: the head, the disc of the chest, that of the breast, the feelers, the nectaries, the feet, and the tips of the thighs are black: the wings are colourless; the veins are brown.

54. *Aphis pallida*, n. s.

This species resembles *A. Urticæ* in structure, but is very distinct; its colour is paler, especially in the winged form; the first joints of the feelers and the tubercles on which they are seated are less developed: the wing-brands are almost white; the first and second veins are thicker and more distinct than the third vein.

It feeds on *Calceolarias* in greenhouses, on a *Villarsia* in hot-houses, and on some other plants.

The viviparous wingless female. The body is pale straw-colour, shining, oval, and convex: there is a large pale green spot at the base of each nectary: the feelers are much longer than the body; the tips of their joints, the eyes, and the tip of the mouth are black: the nectaries are nearly as long as one-fourth of the body:

the legs are long ; the knees are brown ; the feet and the tips of the shanks are black.

55. *Aphis Fragariæ*, n. s.

The viviparous wingless female. The body is pale green, oval, and convex : the head is pale yellow : the feelers are also pale yellow, black towards the tips, and longer than the body : the eyes are dark red : the mouth is pale yellow with a black tip : the nectaries have the same colour and are as long as one-fifth of the body : the thighs are pale green ; the shanks are pale yellow ; the feet and the tips of the shanks are black. It much resembles the preceding species, but the tubercles at the base of the feelers are less developed ; the feelers are longer than the body ; the fourth joint is shorter than the third ; the fifth than the fourth ; the sixth is about one-third of the length of the fifth ; the seventh is as long as the third. In the beginning of the spring it is hatched from the eggs which are attached to the underside of the leaves of the strawberry (*Fragaria vesca*) ; sometimes six eggs and upwards are beneath one leaf.

The viviparous winged female. It much resembles the wingless female, but possesses the usual difference in structure, and in the darker colour of the chest, &c. : the wings are like those of the preceding species.—*Variation in the veins of the wing.* The lower branch of the second fork is obsolete except at its source.

The oviparous wingless female. This appears in November ; it is rather smaller and more slender than the viviparous female ; the abdomen is slightly produced at the tip, and the hind-shanks are dilated.

The winged male. It pairs with the oviparous female in the middle of November ; it much resembles the winged female, but the head, the chest, the feelers, the tips of the thighs, and the hind-thighs from the middle to the tips are darker.

[To be continued.]

XLIV.—*Algæ Orientales*:—*Descriptions of new Species belonging to the genus Sargassum.* By R. K. GREVILLE, LL.D. &c.*

[Continued from p. 277.]

[With a Plate.]

WIGHTIANÆ.

7. *Sargassum lanceolatum* (nob.); caule angulato, ramosissimo ; foliis lanceolatis, acutiusculis, minute dentatis ; vesiculis sphæ-

* Read before the Botanical Society of Edinburgh, November 9, 1848.