insect; I was, however, unable to catch one of these, but have no doubt that this consisted of the clay or earth with which the insect lines its cell, and which presents another proof of the necessity for spines on the fore legs were the theory above mentioned correct.

On examining some of the specimens which I captured, I found they were males. I had noticed that some of the *Odyneri* flew about the walls very leisurely, and as though they were quite unconcerned in the construction of the nests; and it is most probable that these were the males.

I also noticed a great number of *Chrysides* flying about the walls and entering into the different holes, evidently for the purpose of depositing their own eggs in the nests of the *Odyneri*. They were of different sizes, from the largest to a very small size, and I have little doubt were all varieties of the same species, *C. ignita*. When on the wing, the antennæ are stretched forward, with the extremities bent downwards. I also observed that the *Chrysides* kept flying about in the midst of the *Odyneri*, which did not seem to be in the least aware of the intentions of their companions, nor to offer them any molestation.

XIX. *Observations on certain Species of the Genus Dromius.* By CHARLES C. BABINGTON, M.A., F.L.S., &c.

[Read July 7, 1834.]

HAVING long turned my attention to the genus *Dromius*, I now beg leave to submit to the Entomological Society a few observations on some of the species included in it. I have endeavoured more particularly to unravel the confusion that has occurred in the works of our English entomologists amongst the species included by Fabricius under the name of *Carabus fasciatus*. I have also ventured to alter the characters of some of the other species, in the hope of making their specific distinctions more apparent. I must be allowed to add, that the thanks of the Society are due to my friend Mr. Westwood for the drawings which accompany this paper, he having kindly offered to employ his pencil in its illustration.

St. John's College, Cambridge,
June 1, 1834.

1. *D. agilis*, Dej.

Oblongus; capite thoraceque ferrugineis aut fuscis, thorace qua-

drato: elytris fuscis, disco duplici serie punctatis; antennis pedibusque testaceis.

Longitudo corporis 3, latitudo 1 lin.

D. agilis. *Dej. Spec. Col.* i. 240. *Steph. Ill. (M.)* i. 21. *Aud. et Brullé. Hist. Ins.* iv. 185.

Car. agilis. *Fab. Syst. Eleut.* i. 185.

Leb. agilis, var. a. *Gyll. Ins. Suec.* ii. 184.

Car. 4-maculatus, var. d. e. g. *Sch. Syn. Ins.* i. 218.

β . *Car. atricapillus.* *Panz. xxx. f.* 9.

Leb. agilis, var. b. *Gyll. Ins. Suec.* ii. 184.

γ . *D. fenestratus.* *Steph. Ill. (M.)* v. 367. *Steph. Nom. ed. ii. col. i.*

Car. fenestratus. *Fab. Syst. Eleut.* i. 209.?

Car. arcticus. *Oliv. iii. 97. t. 12. f.* 145.

Leb. agilis, var. e. *Gyll. Ins. Suec.* ii. 184.

Car. 4-maculatus, var. c. *Sch. Syn. Ins.* i. 218.

Oblong; *head* and *thorax* reddish, the latter nearly square, rather narrower behind, with the hinder angles somewhat prominent; *elytra* dark brown, with two series of slightly impressed dots upon each, one between the 2nd and 3rd, and the other between the 7th and 8th striæ from the suture.

In *var. β* . the head is dark brown.

Var. γ . has a pale reddish spot on the anterior part of the elytra, and sometimes one at the apex; the head also is dark. I cannot suppose this variety to be the *C. fenestratus*, *Fab.*, which, from all the continental specimens that I have seen, from his description, and from the figure in Sturm's *Deuts. Faun.* vii. t. 168, appears to have a truly fenestrated spot nearly in the centre of each of the elytra, and to be a perfectly distinct species. I have no doubt that the insect described by Mr. Stephens, as quoted above, is only a variety of *D. agilis*, as I have captured specimens of this species which, when alive, had a pale mark such as he describes, but after death could hardly, if at all, be distinguished from the other specimens taken in their company.

This insect is not uncommon under the bark of trees.

2. *D. meridionalis.* *Dej.*

Oblongus; capite thoraceque ferrugineis aut fuscis, thorace transverso, angulis posticis rotundatis; elytris fuscis, linea e punctis parvis impressis; antennis pedibusque testaceis.

Long. 3, lat. 1 lin.

D. meridionalis. *Dej. Spec. Col.* i. 242. *Steph. Ill. (M.)* i. 16.

Car. agilis. *Panz. Faun.* lxxv. f. 11.?

This insect very much resembles *D. agilis*, but may always be distinguished from it by the characters given above.

The thorax is rather broader than long, narrower behind, and has the hinder angles less prominent. The elytra have only one series of punctures upon the disk of each, *i. e.* on the 6th stria from the suture.

A variety is sometimes found at Cambridge with the centre of each elytron ferruginous.

This insect does not appear to be rare, but is generally confounded with *D. agilis*. A good many specimens have occurred at Cambridge, and it is probably pretty generally distributed throughout this country.

3. *D. quadrimaculatus*. *Dej.*

Oblongus; capite nigro; thorace subquadrato, angulis posticis rotundatis, rufo; elytris fuscis, maculis duabus, altera prope basali, altera terminali; antennis pedibusque pallidis; subtus piceus, pectore rufo.

Long. $2\frac{1}{4}$ —3, lat. 1 lin.

D. 4-maculatus. *Dej. Spec. Col.* i. 239. *Steph. Ill.* (M.) i. 21. *Aud. et Brullé, Hist. Ins.* iv. 188.

Car. 4-maculatus. *Linn. Syst. Nat.* ii. 673. *Faun. Suec.* 809. *Fab. Syst. Eleut.* i. 207. *Sch. Syn. Ins.* i. 217. *Marsh, Ent. Brit.* 459.

Head black; *mouth, palpi*, and *antennæ* pale ferruginous; *thorax* quadrate, a good deal contracted behind, and the angles rounded, red; *elytra* with the humeral angles rather prominent, nearly rectangular, with the angular point rounded, brown, having two pale spots on each; one large oblong placed near the base and extending nearly to the middle; the other smaller transverse, sometimes wholly covering the apex, at others leaving a narrow dark line on the suture and external margin. In some varieties the spots on the elytra join, and in others the apical one is nearly or totally wanting.

Common under the bark of trees and in moss, but the varieties are rare.

4. *D. quadrinotatus*. *Dej.*

Elongatus; capite nigro; thorace subquadrato, postice attenuato, angulis posticis prominentibus; elytris fuscis, maculis duabus, antennis pedibusque pallidis; subtus piceus.

Long. $1\frac{1}{4}$ —2, lat. $\frac{1}{4}$ — $\frac{1}{2}$ lin.

D. 4-notatus. *Dej. Spec. Col.* i. 238. *Steph. Ill.* (M.) i. 21. *Aud. et Brullé, Hist. Ins.* iv. 189.

Car. 4-notatus. *Panz. Faun. Germ.* lxxiii. 5. *Sch. Syn. Ins.* i. 221.

Leb. fasciata, var. *b.* *Gyll.* ii. 190.

Leb. 4-notata, var. *b.* *Gyll. Ins. Suec.* iv. 459.

Car. puncto-maculatus. *Marsh, Ent. Br.* 460.

β. Steph. Ill. (M.) i. 22. t. 1. f. 4.

Oblong; *head* black; *mouth, palpi*, and *antennæ* pale testaceous; *thorax* dark brown, rather elongated, narrowed behind, with the hinder angles acute prominent; *elytra* brown, faintly striated, having two pale spots, one large and nearly oval at the base, the other small and placed near to the extremity of the suture; *body* beneath dark brown; *legs* pale.

In *var. β.* the *elytra* are more deeply striated, and slightly punctate, the base nearly quite pale, and the apical spot very small; the *antennæ* and *legs* are redder.

This insect does not appear to be uncommon under the bark of trees and in moss; the variety occurs in company with the type, but not near so frequently.

5. *D. fasciatus. Dej.*

Niger; thorace subquadrato, ferrugineo aut piceo; elytris substriatis, angulis humeralibus rotundatis, antice pallidis postice fuscis, maculis apicalibus pallidis; subtus piceus.

Long. $1\frac{1}{2}$, lat. + lin.

D. fasciatus. Dej. Spec. Col. i. 238.; *Iconogr. t. 12. f. 1.* Steph. Ill.* (M.) i. 24. *Curt. Brit. Ent. fol.* 231. *Aud. et Brullé, Hist. Ins.* iv. 189.

Carabus fasciatus. Payk. Mon. 97. 60. *Faun. Suec.* i. 149. *Fab. Ent. Syst.* i. 139. *Syst. Eleut.* i. 186. *Schön. Syn. Ins.* i. 189. *Panz. Faun. Germ.* i. 366.?

Lebia fasciata. Gyll. Ins. Suec. iv. 459. *et etiam, ut mihi videtur*, ii. 189. *exclud. var. b.*

β. Dr. notatus. Steph. l. c. p. 24. *Curt.* 231. "Long. $1\frac{1}{4}$ —2 lin." (*Steph.*)

Head black; *thorax* quadrate, narrowed behind, fusco-ferruginous or piceous; *elytra* gradually widening from the base, pale, with a dark angulated transverse fascia behind the middle and prolonged on the outer margins to the extremity, the suture also

* It may be as well to observe, that persons using Dejean's *Iconographie* must trust to the descriptions, and not the figures, as the latter are done in such a manner as only to give a general idea of the respective insects, and not their specific characters.

dark, leaving, therefore, two pale patches at the end of the elytra; *antennæ* and *legs* pale; *abdomen* dusky beneath.

D. notatus of Stephens does not appear deserving of distinction as a species; "its chief differences consist in its superior size and deeper colour." Gyllenhal in his Appendix has described an insect, under the name of *L. fasciata*, which he appears to think different from that to which the same name is given in his vol. ii. p. 189, and which latter he now calls *L. 4-notata*. This last may probably be referred to *D. notatus*, Steph., as I can only find that it differs from *L. fasciata*, Gyll., in its darker colour.

Taken at Southend, in Devonshire, and at Berwick-upon-Tweed.

6. *D. bifasciatus*. *Perroud*.

"Capite nigro; thorace quadrato, rufo; elytris substriatis, fuscis, maculis duabus magnis, altera humerali, altera postica lunata; antennis pedibusque pallidis; subtus piceus.

"Long. $1\frac{1}{2}$; lat. $\frac{1}{2}$ lin." *Dej.*

D. bifasciatus. *Dej. Spec. Col.* i. 237.; *Iconogr. t.* 11. *f.* 8.—not of *Steph. Nomenclature*, ed. 1 or 2.

Much resembles *D. 4-signatus*, but is a good deal less; the band on the elytra is dentate in the middle both anteriorly and posteriorly; it is a little narrower and more straight, and is dilated both ways on the outer margin, so as anteriorly almost to join the triangular patch at the base, and posteriorly along the outer margin until it joins the extremity of the dark suture, so as to form one spot upon each elytron; the *breast* and *abdomen* beneath dark brown, almost black; *legs* and *antennæ* pale.—*Dejean*.

Found in France; but not yet, as far as I can learn, in England, Mr. Stephens's specimens being *D. bipennifer*.

7. *D. quadrisignatus*. *Dej.* Plate X. Fig. 2.

Pallidus; capite nigro; thorace quadrato, rufo; elytris basi, sutura, fasciaque postica fuscis, angulis humeralibus prominentibus; subtus piceus.

Long. 2, lat. $\frac{3}{4}$ lin.

D. 4-signatus. *Dej. Spec. Col.* i. 236.; *Iconogr. t.* 11. *f.* 7. *Babington* in *Loud. Mag. Nat. Hist.* v. 328. *Steph. Nom. ed.* 2. *col.* 1.; *Illust. (M.)* v. 367. *Aud. et Brullé, Hist. Ins.* iv. 190.

D. sigma. *Steph. Nom. ed.* 1. *p.* 1.; but not of his *Illustrations*, nor of *Curtis's Guide* and *Brit. Entom.*

Head black; *thorax* quadrate, rufo-ferruginous, with the margins paler; *elytra* pale yellow, with the humeral angles prominent and nearly rectangular, at a little behind the middle a broad transverse brown fascia, dilated posteriorly on the outer margin, and connected at the suture with a triangular spot of the same colour at the base, the exterior angles of which are a little produced along the outer margins, so as to form an elongated patch on each side of the elytra; *apex* of the *suture* pale; *abdomen* piceous beneath, the *thorax* paler; *legs* and *antennæ* pale.

Taken at Cambridge by the Rev. A. W. Griesbach, J. A. Power, Esq., and myself; "in Lord Spencer's Park at Wimbledon, not at Dorking," by G. Waterhouse, Esq.; and at "Colney Hatch" by W. E. Shuckard, Esq.

8. *D. sigma. Dej.*

"Pallidus; capite nigro; thorace quadrato rufo; elytris substriatis," angulis humeralibus prominentibus, "sutura fasciæque postica dentata fuscis;" subtus pallidus.

"Long. $1\frac{1}{4}$, lat. $\frac{3}{4}$ lin." *Dejean*.

D. sigma. Dej. Spec. Col. i. 235.; Iconogr. t. 11. f. 6. Fisch. Entom. Ross. iii. 87. Steph. Ill. (M.) i. 176.; not of Curtis's Guide or Brit. Ent., nor of Steph. Nom. ed. 1., but Steph. Nom. ed. 2. col. i. Aud. et Brullé, Hist. Ins. iv. 190.

Car. sigma. Russi, Faun. Etrus. i. 266. no. 564.? Schön. Syn. Ins. i. 226.?

Leb. fasciata. Duft. ii. 255.?

Head black; *mouth, palpi*, and *antennæ* pale yellow; *thorax* reddish, quadrate, a little contracted behind; *elytra* pale yellow testaceous, having the suture dark brown, that colour not extending to the base or apex, and a little behind the middle a broad transverse dark brown band, slightly dilated on the suture, dentated in the middle of each elytron anteriorly, and dilated posteriorly on the outer margins, along which last it sometimes extends almost to the extremity of the suture, when the posterior part of the elytra appears to form a rounded pale patch on a dark ground; underside of the *body* and *legs* pale yellow testaceous.

The above description is abridged from that given by Dejean, as I have not been able to obtain sight of a specimen.

The descriptions given by Rossi and Duftschmid are such as to agree with this species or *bipennifer*; that of Rossi will also include

Sturmii; but as they have omitted the width of their insects, it is quite impossible even to guess which is the species intended. All the synonyms given by Duftschmid belong to *fasciatus*. Fischer's description is copied from Dejean.

This insect has not as yet been discovered in Britain, all the recorded specimens being either *4-signatus* or *bipennifer*, to the former of which the locality given by Mr. Stephens belongs.

9. *D. bipennifer*. *Babington*. Plate X. Fig. 3.

Capite nigro; thorace subquadrato, rufo; elytris substriatis, antice pallidis, angulis humeralibus rotundatis, sutura, et pone medium fascia subdentata, fusca, macula terminali pallida; corpore subtus, antennis pedibusque pallidis.

Long. $1\frac{1}{2}$ — $1\frac{3}{4}$, lat. $\frac{1}{4}$ — $\frac{1}{2}$ lin.

D. bifasciatus. *Steph. Nom. ed. 1. p. 1.; ed. 2. col. 2. excl. syn. of Sturm.*

D. sigma. *Curtis's Guide, p. 3.; Brit. Ent. fol. 231.*

Elongated; head shining, black; thorax quadrate, narrowed behind, rufous; elytra obsoletely striated, with the humeral angles rounded, the base pale, suture dark, and behind the middle a dark transverse fascia slightly dentate in the middle of each elytron anteriorly and dilated posteriorly on the outer margins, but not to the apex, which is pale; antennæ and underside of the body pale.

This insect stands in the cabinet of Mr. Stephens under the name of *D. bifasciatus*, Dej., from which it differs in not having a triangular dark spot at the base of the elytra, the fascia not dilated anteriorly on the outer margins, and the underside of the body pale.

It is very nearly related to *D. sigma*, under which name it appears in the cabinets of Mr. Curtis and others, from which species it differs totally in size, (bearing the same proportion to *D. sigma* as *D. bifasciatus* does to *D. 4-signatus*,) that species being much wider in comparison with its length, and by having the humeral angles of the elytra rounded instead of being nearly rectangular, as I believe them to be in that species, which Dejean describes as agreeing exactly in form and size with *4-signatus*, and also somewhat in form with *4-maculatus*. It also appears to have been confounded with *D. sigma* by the continental entomologists, and probably by Dejean himself, as it has been received under that name from various parts of Europe by the Rev. F. W. Hope, to whom I take this opportunity of returning thanks for his kindness in granting me the use of his specimens of this and other species of *Dromius*.

Taken at Whittlesea Mere, Hunts, and sent from the North of England to the Cambridge Philosophical Society; also at "Dorking, and on Cardew Mire near Carlisle," Mr. Curtis; and at "Aberistwyth," Rev. F. W. Hope.

10. *D. Sturmii*. Babington. Plate X. Fig. 4.

Capite nigro; thorace subcordato, truncato, rufo; elytris pallidis, angulis humeralibus rotundatis, pone medium fascia fusca, sutura pallida; corpore subtus, antennis pedibusque pallidis.

"Long $1\frac{1}{4}$ lin." *Stu.*

D. fasciatus. Sturm, *Deutsch. Faun.* vii. p. 43. t. 69. f. C.

Head black; *thorax* subcordate, rufous; *elytra* paler than the thorax, the humeral angles rounded, behind the middle a transverse fascia slightly dilated at the suture, and very much so at the exterior margins both anteriorly and posteriorly, suture pale; *antennæ*, *legs*, and underside of the *body* pale.

This insect I only know from the figure in Sturm's beautiful work above quoted; but as it is clearly a distinct species, I have ventured to describe it under the above name. It differs from *D. fasciatus* in having the suture and underside of the body pale, and from *sigma* and *bipennifer* by having the fascia on the elytra not dentate in the middle and dilated both ways on the exterior margins, and the suture pale.

Sturm's description will agree with either this species, *D. sigma*, or *bipennifer*: he says that it was found in Austria.

11. *D. melanocephalus*. Dej.

Pallidus; capite nigro; thorace quadrato; elytris immaculatis; abdomine ferrugineo.

Long. $1\frac{1}{4}$ — $1\frac{3}{4}$, lat. $\frac{1}{4}$ — $\frac{3}{4}$ lin.

D. melanocephalus. Dej. *Spec. Col.* i. 234.; *Iconogr.* t. 11. f. 5.

Steph. Ill. (M.) i. 22. t. 1. f. 5. Sturm. *Deutsch. Faun.* vii. 44. t. 169. f. D. Aud. et Brullé, *Hist. Ins.* iv. 188.

Leb. linearis, var. *b.* Gyll. ii. 187.?

β . *D. scutellaris*. Steph. l. c.

Head black; *thorax* pale red, quadrate; *elytra* pale, very faintly striated; *antennæ* and *legs* pale; *body* beneath rather darker, particularly the abdomen.

Var. β . has a triangular dark spot surrounding the scutellum; the abdomen and tips of the *antennæ* brown.

A common species in gravel-pits, under moss, &c. The variety is more rare, but is found in company with the type.

12. *D. linearis*. Oliv.

Elongatus, fusco-ferrugineus; fronte striis plurimis longitudinalibus; thorace subcordato; elytris punctato-striatis, pallidioribus, postice infuscatis; antennis pedibusque pallidis.

Long. 2—2½, lat. ¼—½ lin.

D. linearis. *Dej. Spec. Col.* i. 233.; *Iconogr. t.* 11. *f.* 4. *Sturm. Deuts. Faun.* vii. *t.* 169.? *Steph. Ill. (M.)* i. 25. *Aud. et Brullé, Hist. Ins.* iv. 187.

Car. linearis. *Oliv. Ent.* iii. 111. *t.* 14. *f.* 167. *Marsh. Ent.* i. 463.

Dusky ferruginous above; *thorax* rather paler than the head, quadrato-cordate; *head* with numerous longitudinal striæ between the eyes; *elytra* deeply punctate-striate, rather pale; body beneath ferruginous, with the abdomen darker.

Very common, as I believe, throughout England.

13. *D. longiceps*. *Dej.* Plate X. Fig. 5.

Elongato-linearis, pallide fusco-ferrugineus; thorace subquadrate; elytris striatis obsoletissime punctatis, sutura et macula communi subapicali cuneata nigris; antennis pedibusque pallidis.

Long. 3, lat. ¼—½ lin.

D. longiceps. *Dej. Spec. Col.* ii. 450.; *Iconogr. t.* 11. *f.* 3. *Babington in Lond. Mag. of Nat. Hist.* v. 327. *Steph. Ill. (M.)* v. 368.

Head with two oblique longitudinal punctate foveæ between the eyes; *elytra* with the suture dark, that colour gradually increasing in width till near the apex, when it is rounded off so as to leave the apex pale.

Taken in small quantity from the sedge-boats at Cambridge, in the spring, but not from moss, as it is incorrectly stated in the *Mag. of Nat. Hist.* and *Steph. Illustr.* It also occurs at Whittlesea Mere, Huntingdonshire.