

on fruit-trees appear to be that, by absorbing the sap the growth of the trees is retarded, the fruit loses both size and flavour, and the crop decreases.

In consequence of the female *Coccus* adhering close to the bark it is extremely difficult to eradicate, and I am not aware of any method of getting rid of it in this state short of scraping it off the branches. This mode however would be extremely tedious and at the same time endanger the life of the tree. There are various remedies in use, such as washing the trees with tobacco water, soft soap and water, and lime water, all destructive of insect life; but in a matter of this nature economy is of importance. Vegetable solutions are not injurious to vegetable life, but mineral washes are no doubt dangerous. Lime water however is an exception, and combines three important qualities. It is perfectly harmless to vegetation, it is cheap, and at the same time destructive to insects. I should recommend two or three applications in the spring, at intervals of one or two weeks, of strong lime water with a brush, and a dusting of quicklime before the branches get dry; or a washing of soft soap and water, using also the powdered lime. For plants in the green- and hot-house a solution of bitter aloes is said not only to destroy the insect, but to prevent its future appearance on the plant washed with it.

I think the causes of failure in getting rid of this pest have arisen from the application of remedies at improper seasons, that is, when the female has become fixed to the plants. I would suggest that the remedies be applied when the young larvæ make their appearance. In this state they are locomotive and may be easily detected with a pocket magnifier. If therefore at this period any of the above remedies were applied two or three times in the manner before suggested, I have little doubt of a successful result.

XXXVIII. *Observations on Haliplus ferrugineus of Authors, being an attempt at its Subdivision into several Species.*
By CHARLES C. BABINGTON, M.A., F.L.S., &c.

[Read May 4, 1835.]

My attention having been drawn to the different appearance presented by insects placed in our cabinets under the name of *Haliplus ferrugineus*, I determined upon subjecting them to a careful examina-

tion, and have been repaid by the discovery of five marked forms included under that name. The total ignorance which at present exists on the subject of the limits of species in entomology, prevents me from giving any positive opinion upon the value of the characters described in this communication, and I now submit them to the Entomological Society under the idea that it is better to distinguish marked forms by a specific name than to run the risk of allowing good species to continue in obscurity by noticing them only as varieties. I may add that the character given under all the synonyms which I have been enabled to quote will apply to either of the five species if colour is excepted.

From an examination of the Linnæan cabinet it appears that the insect described by Linnæus in his later works under the name of *Dytiscus ferrugineus*, and placed in his collection with that name appended, in his own hand-writing, is not the *Haliphus ferrugineus* of authors, but the same as *D. ovalis*, Linn. (*Hyphidrus ovatus*, Auct.) described in his 'Faun. Suecica'. It would therefore appear that he has introduced the same insect under both of these names in his 'Systema Naturæ', ed. 1767. The fact that Fabricius, who had free access to the Linnæan collections, has no such insect as *D. ferrugineus* in either of his works, would appear to prove that he was certain of its nonexistence as a distinct species. Gyllenhal is the first author who has described anything under the Linnæan name, and I cannot suppose that he has had better, if such good, opportunities of determining the question as we have in England. I have therefore in the following description expunged the reference to Linnæus, and considered Gyllenhal as the first describer of *H. ferrugineus*.

St. John's College, Cambridge,
April 8, 1835.

HALIPLUS, Latr.

1. *H. ferrugineus*, Gyll. Plate XV. fig. 2.

Rufo-testaceus, nitidus, elytris profunde punctato-striatis interstitiis seriebus punctorum minorum, thorace antice angusto, lateribus rectis, elytrorum, quorum maxima latitudo pone basin locatur, lateribus rotundatis. (Long. corp. $1\frac{1}{4}$, lat. $\frac{3}{4}$ lin.)

H. ferrugineus, Gyll. Ins. Suec. i. 546. Steph. Ill. (Mand.) ii. 40. non *Dytiscus ferrugineus*, Linn.

Reddish testaceous; head broad, minutely punctured; eyes slightly prominent, black; antennæ pale, equal in length to the thorax, which is much narrowed in front, emarginate, the anterior angles acute, the sides straight, slightly margined, scarcely in continuity with the elytra, posterior angles acute, distinctly punctured through-

out, more thickly towards the margins, and a transverse curved series of larger punctures behind; elytra strongly dilated at the base, very near to which is their broadest part, from thence gradually narrowed to near the apex, when the curvature of their sides is greatly increased, each marked with ten rows of large deep punctures, each of the interstices having a remote series of minute punctures and a continuous line of the same near to the suture, the larger punctures dark; under side pale, the ventral laminæ rather faintly punctured; legs paler.

In Mus. Soc. Entom.

Taken at Cambridge.

2. *H. SUBNUBILUS*, Bab. Plate XV. fig. 3.

Ferrugineus, nitidus, elytris profunde punctato-striatis, interstitiis seriebus punctorum minorum, thorace antice angusto, lateribus rectis, elytrorum, quorum maxima latitudo pone basin locatur, partibus intermediis laterum subparallelis. (L. c. lin. 1½.)

Dull red; head and thorax as in *H. ferrugineus*; elytra strongly dilated at their base, very near to which is their broadest part, but they decrease very slightly in width until past their middle; punctured as in *H. ferrugineus*, the larger punctures and numerous blotches dark, forming two interrupted oblique fasciæ upon each elytron, meeting at the suture; under side paler, the ventral laminæ more thickly and deeply punctured than in *H. ferrugineus*.

Taken near Cambridge, but not in company with the preceding.

3. *H. FULVUS*, Fab. Plate XV. fig. 4.

Rufo-flavus, nitidus, elytris profunde punctato-striatis, interstitiis seriebus punctorum minorum, thorace antice angusto, lateribus rectis, elytrorum, quorum maxima latitudo ad ¼ longitudinis locatur, lateribus rotundatis. (L. c. 2, lat. 1—1¼ lin.)

H. ferrugineus, var. b., Gyll. Ins. Suec. i. 546. Steph. Ill. M. ii. 40.—*Dytis fulvus*, Fab. Syst. Eleu. i. 271.

Reddish yellow: head broad, minutely punctate; eyes very slightly prominent, black; antennæ pale, about equal in length to the thorax, which is much narrowed in front, emarginate, the anterior angles very acute, sides straight, slightly margined, not in continuity with the elytra, posterior angles acute, the disc smooth, the margins thickly punctate, and a transverse curved somewhat irregular series of large punctures behind; elytra strongly dilated at the base continuing slightly to increase in width for about ¼ of their length, from that point narrowing in a curve of continually increasing curvature to the apex, punctate as in *H. ferrugineus*, all the larger punct-

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tures and a few oblong spots between the striæ dusky; under side darker, the ventral laminæ deeply punctured; legs paler.

In Mus. Soc. Entom.

Taken at Cambridge.

4. *H. PARALLELUS*, *Bab.* Plate XV. fig. 5.

Fusco-flavus, nitidus, elytris profunde punctato-striatis, interstitiis seriebus punctorum minorum, thorace elytrorumque lateribus subparallelis parte anticâ hujus et apicali illorum exceptis. (L. c. 2, lat. 1—1 $\frac{1}{4}$ lin.)

Dusky yellow; head short, very broad, thickly and rather deeply punctate; eyes prominent, black; antennæ pale; thorax but little narrower in front than behind, slightly emarginate, sides nearly straight except near the anterior angles, where they are rounded, slightly margined, not in continuity with the elytra, the posterior angles but little less than right angles, thickly punctured, with a small space on the disc smooth, and a transverse slightly irregular straight series of large punctures behind; elytra strongly dilated at the base, the sides then continued nearly parallel but in most cases narrowing slightly for about three fourths of their length, afterwards quickly attenuated to the apex, punctate as in *H. ferrugineus*, the larger punctures and frequently the suture dusky, that colour often suffused so as to give the appearance of a transverse fascia at the base, and a cloud on each elytron towards the apex; under side rather paler, the ventral laminæ deeply punctate; legs paler.

In Mus. Soc. Entom.

Taken at Cambridge.

5. *H. RUBICUNDUS*, *Spence MSS.*? *Bab.* Plate XV. fig. 6.

Ferrugineus, nitidus, ovalis, elytris profunde punctato-striatis, interstitiis seriebus punctorum minorum, thoracis elytrorumque lateribus in eâdem arcu. (L. c. 1 $\frac{1}{4}$, lat. $\frac{3}{4}$ lin.)

H. ferrugineus, γ . Steph. l. c. supra.

Dull red; head short, broad, minutely punctured, the vertex smooth; eyes scarcely at all prominent, black; antennæ red; thorax much narrowed in front, with its lateral margins very slightly rounded, and so nearly in continuity with the elytra, which are but little dilated at their base, as to give the insect's outline the appearance of forming a uniform curve, the whole approaching very closely to the ovate form, the disc smooth, the margins thickly punctate, the transverse series behind not so distinctly marked as in the three preceding species; elytra but little dilated at the base, gradually increasing in width for about one third of their length, then decreas-

ing gradually to the apex, punctate as in *H. ferrugineus*, the suture, larger punctures, and numerous irregular clouds, particularly towards the apex, darker; under side red, the base of the abdomen darker, ventral laminæ coarsely punctate; legs dull red.

Taken at Cambridge.

I have little doubt that all the above species may be found in numerous, if not all, parts of the country; but not having myself authentic specimens from other places, I have only ventured to name Cambridge as their locality.

XXXIX. *Notice relative to Aëpus fulvescens, and other submarine Coleopterous Insects.* By W. SPENCE, Esq., F.R.S., Hon. Mem. E.S., &c.

[Read 1st June, 1835.]

M. AUDOUIN in a paper read to the Academy of Sciences, and which he has lately had the goodness to send me, has given some interesting details as to the habits of *Aëpus fulvescens*, a very small beetle of the family of *Harpalidæ*, which passes a great portion of its life under the sea; but he does not seem to have been aware that the same singular mode of existence obtains also in the case of other Coleopterous insects, and had been in part noticed by an English entomologist as long since as the year 1810. As this fact, which I stumbled on by chance within these few weeks, may be unknown to some of the members of the Entomological Society, as it previously was to me, I beg to point it out to their attention by this hasty and brief notice, and the rather as a good deal of further investigation seems to me yet to be required, and which they are very competent to undertake, in order to throw a full light upon the singular facts to which M. Audouin has directed our attention. The English entomologist to whom I allude is the late Rev. John Burrell, who in a paper in the first volume of the Transactions of the former Entomological Society, entitled "*Remarks on Staphylinus tricornis*," read April 2nd, 1811, informs us that on the 27th April, 1810, walking on the sand-hills near the sea at Cley, in Norfolk, he observed on the level spaces between the hills, just as the tide began to ebb and they became sufficiently firm to walk over, numbers of the males of *St. (Bledius) tricornis*, which were in search of their females which inhabited holes in the sand, in which he found two