

side of the scutellum, dark fuscous; the wings hyaline, with a slight fuscous stain along the anterior margin of the superior pair. Abdomen fuscous, darkest towards the apex, with a yellow fascia on the posterior margin of all the segments.

*Hab.* Mexico.

#### EXPLANATION OF PLATE IV.

- Fig.* 1. *Meranoplus striatus* ♂.  
*Fig.* 2. *Meranoplus subpilosus* ♂.  
*Fig.* 3. *Cryptocerus laminatus* ♂.  
*Fig.* 4. *Cryptocerus binaculatus* ♀.  
*Fig.* 5. *Cryptocerus grandinosus* ♂.  
*Fig.* 6. *Strumigenys mandibularis* ♀.  
*Fig.* 7. *Strumigenys mandibularis* ♂.  
*Fig.* 8. Antenna of *Strumigenys* ♀.  
*Fig.* 9. Antenna of *Strumigenys* ♂.  
*Fig.* 10. Mandible of *Strumigenys* ♀.  
*Fig.* 11. Mandible of *Strumigenys* ♂.  
*Fig.* 12. Head of *Ceratobasis singularis* ♀.  
*Fig.* 13. Wing of *Ceratobasis singularis* ♀.  
*Fig.* 14. *Myrmicocrypta squamosa* ♀.  
*Fig.* 15. Wing of *Myrmicocrypta squamosa* ♀.  
*Fig.* 16. Antenna of *Myrmicocrypta squamosa*.  
*Fig.* 17. Mandible of *Myrmicocrypta squamosa*.  
*Fig.* 18. *Philanthus cementarius* ♀.

#### VII.—On the Coleoptera of the Salvages. By T. VERNON WOLLASTON, M.A., F.L.S.

THE peculiar position of the almost inaccessible rocks of the Salvages, which lie in the direct course from Madeira to the Canaries, though somewhat nearer to the latter than to the former, give them an especial interest in the eyes of geographical naturalists,—particularly those, however, who have had an opportunity of studying the productions of the two neighbouring groups. The *questio vexata*, as to whether these several Atlantic islands are not, in reality, the mere exponents or outposts of an immense continent now for the most part submerged, may perhaps never be solved; yet certainly one of the best methods of helping towards a solution is carefully to examine the fauna and flora of what seem to be its detached portions, and then closely to compare them with each other, in order to ascertain whether they possess sufficient in common (after every reasonable allowance has been made for the accidental intermission

of specimens, from time to time, by chance agencies) to render their *quondam* connexion, thus far at least, probable.

The small size of the Salvages, which consist of two uninhabited rocks (the minute third one being absolutely inaccessible) separated by a channel of about twelve miles, added to the great difficulty of approaching their few and dangerous landing-places\*, render every fact concerning them, correctly arrived at, doubly valuable; and therefore I do not deem it necessary to apologize for these few preliminary remarks on an enumeration of the eleven species of Coleoptera which have been hitherto detected upon them. Six of these (apparently new to science, or at any rate treated by myself as such) were described in the 'Insecta Maderensia' in 1854, and were due to the indefatigable researches of T. S. Leacock, Esq., of Funchal, who effected a landing on both of the islands during the spring of 1851; whilst the remaining five (three only of which would seem to be novelties) have been lately communicated by my friend the Barão do Castello de Paiva, who obtained them from the master of a Portuguese boat, which was freighted from Madeira for the purpose of gathering orchil and barilla, with which most of these Atlantic rocks more or less abound. In the following catalogue I do not undertake to pronounce for certain on which of the two islands the five recently added species were collected, though I believe them to be from the Great Salvage. Those discovered by Mr. Leacock were, he informs me, from the southern or *smaller* island,—known, nevertheless, as the 'Great Piton.'

### Fam. Carabidæ.

#### Genus TARUS.

Clairville, Ent. Helv. ii. 94 (1806).

#### 1. *Tarus Paivanus*, n. sp.

*T. capite prothoraceque piceis, illo sat profunde punctato, hoc ruguloso sed minus profunde punctato, postice valde angustato truncato angulis*

\* I should add that, whilst accompanying my friend John Gray, Esq., to the Canaries, in his yacht the 'Miranda,' two years ago, one of our main objects was to explore thoroughly these remote and almost unknown islands. Accordingly, sailing from Madeira on the 6th of January, 1858, we arrived off the Great Salvage on the following morning, and, after lowering the boat, pulled towards the rocks. The sea, however, ran so high, and the surf was so tremendous, that we found it impossible to approach nearer than a stone's throw from the shore without the utmost danger; for the boat must have been literally dashed to pieces had we attempted to land. We therefore returned to the yacht (not without a "ducking"), and resumed our voyage to Teneriffe.

ipsis acutis; elytris subtilissime alutaceis crenato-striatis, interstitiis distincte punctulatis, testaceis, maculis duabus communibus (una minore transversa ad basin sita, et altera maxima dentata postmedia) nigris ornatis; antennis palpisque piceo-ferrugineis; pedibus testaceis; palporum labialium articulo ultimo haud securiformi (leviter subclavato).

Long. corp. lin.  $3\frac{1}{2}$ – $3\frac{3}{4}$ .

*T. head* dark-piceous, and rather deeply punctured. *Prothorax* a shade paler, and more strictly piceous, and with the lateral edges more or less slightly rufescent; a little less deeply punctured than the head, but rather more rugose, especially about the hinder angles; abruptly truncated both before and behind, and much narrowed posteriorly,—the extreme hinder angles, however, being acute and prominent. *Elytra* subovate, much shortened behind, but nevertheless rather produced in the middle (*i. e.* at their apical point of junction); somewhat acute at their humeral angles, much depressed, and most minutely and delicately alutaceous all over,—causing their surface to be a little less shining than that of the head and prothorax; regularly crenate-striate, and with the interstices rather distinctly punctulated; testaceous, but ornamented with two black or dark-piceous patches (common to both elytra) which cover the greater portion of the surface,—the first being comparatively small and transverse, placed at the centre of the extreme base, behind the scutellum, and reaching on each side to about (or a little beyond) the fourth stria, its portion between the third and fourth stria being more or less backwardly produced; and the second being immensely larger, postmedial, sometimes much suffused, and of a zigzag form, being produced both before and behind along the suture, and extending on either side to about the seventh stria. *Antennae* and *palpi* piceo-ferruginous; and with the terminal joint of the labial palpi only very slightly enlarged and subclavate (instead of securiform, as in the ordinary *Turi*). *Legs* testaceous.

The three specimens from which the above description is compiled have been lately communicated to me by the Barão do Castello de Paiva, to whom I have great pleasure in dedicating the species. From the close resemblance of their elytral patches and colouring to those of the Canarian examples of the *T. discoideus*, Dej., I had at first supposed them to be the exponents of a merely depauperated and slightly altered form of that insect, from (perhaps) a long isolation on the small and remote rocks of the Salvages; but a more careful inspection has proved that such an opinion (as is too often the case in like instances) is only a superficial one, and that the two species are not only altogether distinct in their minor features, but even in their structural ones. Indeed, were it not that the specimens from the Salvages are essentially *Turi* in everything else, I

should have been almost inclined to regard them as *generically* removed from their *quasi*-(Canarian) allies,—the scarcely expanded (and only slightly *subclavate*) terminal joint of their labial palpi (I believe, in both sexes) affording a marked difference from the immense and largely securiform corresponding one (at any rate in the males) of the normal members of that group; but as such is the case, I prefer treating them (at any rate for the present) as only very anomalous *Tari*. As regards their more evidently specific details, they recede from the *T. discoideus* in their smaller size and darker head and prothorax, the latter of which is more distinctly roughened and punctured, more straightly truncate before and behind, and is much more narrowed posteriorly (with the extreme hinder angles themselves more prominent and acute); in their *alutaceous* and more shining elytra, which are shorter posteriorly (though rather more produced in the centre), with their shoulders more acute, and with their darker portions a little different, the basal patch being more or less *backwardly-produced* between the third and fourth stria, and the postmedial one larger and more suffused (extending on either side to the *seventh* stria, instead of only the sixth); in their darker palpi and antennæ; and in their rather more coarsely serrated claws.

#### Genus PTEROSTICHUS.

Bonelli, Obs. Entom. i. Tab. Syn. (1809).

(Subgenus *Orthomus*, Chaud.)

#### 2. *Pterostichus haligena*, n. sp.

*P. apterus*, niger, subnitidus; prothorace subquadrato antice vix latiore, in disco canaliculato (canalicula antice et postice abbreviata et abrupte terminata), basi utrinque foveis duabus (una sc. interna angusta longiuscula subflexuosa lineiformi, et altera brevior latiore minus profunda) impresso; elytris (in fœmina saltem) subtilissime alutaceis, leviter subcrenulato-striatis, singulo punctis duobus impresso, interstitiis planiusculis; antennis pedibusque rufo-piceis.

Long. corp. lin.  $3\frac{3}{4}$ –4.

*P. apterus*, black, and slightly shining. *Prothorax* subquadrate, being but very little narrowed behind, and with the sides only very slightly rounded; scarcely as broad, even anteriorly, as the elytra; with a deep, but abbreviated, dorsal channel down the disk,—it being suddenly shortened both before and behind; and with two foveæ on either side at the base,—the inner ones being rather long, deep, subflexuose, narrow and lineiform, and abruptly defined; and the outer ones short, very broad and shallow (forming merely a depression). *Elytra* with their sides almost parallel, and (at any rate in the female sex, for which

I can alone vouch) most closely and delicately alutaceous all over—[a structure which is very conspicuous under a high magnifying power, but which is only just traceable on the prothorax]; lightly and regularly subrenate-striate, the striæ being fine and narrow; with two punctures, just within the third stria, down the disk of each, and with the interstices rather flattened. *Limbs* rufo-piceous; the *antennæ* brighter at their base.

The present *Pterostichus*, two female specimens of which have been communicated to me by the Barão do Castello de Paiva, is closely allied to the *P. canariensis* of Brullé, which I have taken abundantly in Lanzarote, Fuerteventura, and Grand Canary; nevertheless it is rather smaller and less brilliant than that insect,—the entire surface of its elytra (at least in the females, of which I can alone speak) being densely and distinctly alutaceous (a sculpture which is *just traceable* even on the prothorax also); its prothorax is a little less expanded anteriorly, and with its dorsal channel more abruptly terminated both before and behind; and its elytral striæ are finer, narrower, and shallower, with the interstices much less convex.

#### GENUS HARPALUS.

Latreille, Gen. Crust. et Ins. i. 201 (1806).

#### 3. *Harpalus pèlagicus*, n. sp.

*H. oblongus*, latus, subnitidus, niger vel nigro-piceus; prothorace transverso, convexo, ad latera subæqualiter rotundato (basi haud constricto, sed paulo angustiore), utrinque leviter foveolato, angulis posticis obtusis; elytris leviter crenato-striatis (stria subsuturali abbreviata longiuscula); antennis rufo-ferrugineis, pedibus rufo-piceis.

Long. corp. lin. 4 $\frac{1}{4}$ –5.

*H. oblong*, broad, shining (but not very brilliantly so), and black (or, when immature, piceous-black). *Head* rather large. *Prothorax* broad, transverse, and convex, almost equally rounded at the sides (*i. e.*, with the edges in a continuous curve,—not being suddenly attenuated, or *constricted*, posteriorly, though a little narrower behind than before); almost unpunctured, though with a shallow and obscurely punctured fovea on either side, at the base, behind. *Elytra* lightly striated, the striæ being finely but distinctly crenulated; with the abbreviated second stria longer than in the Madeiran and Canarian *Harpali* of this type, and completely joining the sutural one at a great distance behind the scutellum; more truncated at their base than in the other *Harpali* of this type, the humeral angles being less porrected and more obtuse; a little acuminate at their apex, but not minutely divaricate as in the *H. viridus*. *Antennæ* rufo-ferruginous. *Legs* rufo-piceous.

The *Harpalus* here described is one of a small cluster of Atlantic

forms,—four or five of which I have taken in the various islands of the Canarian archipelago, whilst another, the *H. vividus* (if, indeed, that insect be not in reality separable into more than a single species), is universal throughout the Madeiran group. After a very careful comparison of the *H. pelagicus* with all the *Harpali* as yet detected both in the Madeiras and the Canaries, I am perfectly satisfied that it cannot be referred to any of them; though it has a greater affinity, perhaps, with those of the latter islands than with those of the former. Apart from minor characteristics, it differs from them *all* in being rather broader *throughout*, as well as in the shape of its prothorax, which is wide, transverse and convex, and entirely *unconstricted* posteriorly (though a little narrower behind than before),—its edges being in a continuous curve, and with its angles therefore more obtuse than is the case in the allied species. Its elytra, also, have their shoulders less porrected or acute (the thickened line between the *extreme apex* of each humeral angle and the scutellum being almost straight); and their striæ are much more perceptibly (though minutely) crenulated, and with the abbreviated second one longer than in any of the allied forms, and moreover completely joining the sutural one at a very considerable distance behind the scutellum. Three specimens of it have been lately communicated by the Barão do Castello de Paiva, to whose kindness I am indebted for the other novelties described in this memoir.

### Fam. Sphæridiadae.

#### Genus CERCYON.

Leach, Zool. Miscell. iii. 95 (1817).

#### 4. *Cercyon centrimaculatum*, Sturm.

*Sphæridium centrimaculatum*, Sturm, Deutsch. Fna, ii. 23 (1807).

— *pygmaeum*, Gyll., Ins. Suec. i. 104. var. *b* (1808).

*Cercyon centrimaculatum*, Woll., Ins. Mad. 104 (1854).

A single example of the common European *C. centrimaculatum* was lately communicated (along with the three preceding insects and the *Blaps gages*) by the Barão do Castello de Paiva, as coming from the Salvages. It is not a very important addition to the fauna,—for, being somewhat abundant both at the Madeiras and Canaries, the species may have been accidentally naturalized through the instrumentality of the boats, which proceed there almost every year for the purpose of collecting orehil and shooting gulls.

## Fam. Curculionidæ.

## GENUS ACALLES.

Schönherr, Curc. Disp. Meth. 295 (1826).

5. *Acalles Neptunus*, Woll.*Acalles Neptunus*, Woll., Ins. Mad. 330 (1854).

A fine series of this noble *Acalles* was captured by Mr. Leacock, on the 'Great Piton,' during the spring of 1851. It is somewhat allied to the Canarian *A. argillosus*, Schönh. (of which I possess several specimens, collected at Taganana and Orotava, in the north of Teneriffe),—though much larger than, and perfectly distinct specifically from, that insect.

## Fam. Lamiadæ.

## GENUS DEUCALION.

Wollaston, Ins. Mad. 430 (1854).

6. *Deucalion oceanicus*, Woll.*Deucalion oceanicus*, Woll., Ins. Mad. 433 (1854).

The *D. oceanicus* is also due to the researches of Mr. Leacock, who secured a fine series of it (now in the Collection of the British Museum) on the 'Great Piton,' in 1851. It is a most interesting insect, as representing a group of which three\* remarkably distinct exponents have been hitherto brought to light,—viz., one in the Madeiras, the Salvages, and the Canaries, respectively. The genus was established in the 'Insecta Maderensia,' in 1854, to receive a very rare and anomalous Longicorn detected by myself on the extreme summit of the Dezerta Grande during January of 1859, and subsequently by the Rev. R. T. Lowe and myself on the top of the almost inaccessible Southern Dezerta, or 'Bugio'; so that Mr. Leacock's capture on the Salvages, of a kindred species, became at once a very significant and suggestive one. It is, however, rendered still more

\* I ought perhaps to say *four*, instead of three,—for a single (very old and imperfect) example of an additional species, closely allied to the Dezertan one, is in the collection of F. P. Pascoe, Esq.; but from what country it came, he is unable to state. If therefore it should turn out eventually to be likewise a native of one or the other of these Atlantic islands (which I cannot but regard as probable), we should have another confirmation of the geographical exclusiveness of this curious Eucerate group. Another insect, from Lord Howe's Island, in the South Pacific, has been described and figured by Mr. White, in the 'Proceedings of the Zoological Society,' under the name of *Deucalion Wollastoni*, but this belongs to a different, although nearly allied genus.

important now, through the discovery that the *Lamia gibba* of Brullé, peculiar to the Canaries, is in reality a *Deucalion*; of which I have been able to satisfy myself, from the comparison of many specimens which I took during the spring of last year in Fuerteventura and Teneriffe,—from out of the decaying Euphorbias, on the stems of which the larvæ would appear exclusively to subsist. And it is worth remarking that M. Brullé, whilst describing the *L. gibba* in Webb and Berthelot's 'Histoire Naturelle des Iles Canaries,' in 1839, implies his conviction that it would constitute eventually the type of a new genus: "Espèce fort remarquable, et qui formerait peut-être une division nouvelle dans le système proposé récemment par quelques auteurs."

### Fam. Opatridæ.

#### Genus OPATRUM.

Fabricius, Syst. Ent. 76 (1775).

#### 7. *Opatrum dilatatum*, Woll.

*Opatrum dilatatum*, Woll., Ins. Mad. 501 (1854).

A single specimen of this insect was captured by Mr. Leacock on the 'Great Piton' in 1851.

### Fam. Tentyriadæ.

#### Genus HEGETER.

Latreille, Hist. Nat. des Crust. et Ins. iii. 172 (1802).

#### 8. *Hegeter latebricola*, Woll.

*Hegeter latebricola*, Woll., Ins. Mad. 510 (1854).

Taken in tolerable abundance by Mr. Leacock on the 'Great Piton,' in 1851; and I have also lately received specimens from the Barão do Castello de Paiva, which I believe to have been captured on the 'Great Salvage.' I have not yet compared it accurately with the many Hegeters which I have found during the last two years in the Canaries; but it evidently approaches very closely to a species which is common in most of the islands (particularly, however, the eastern ones) of that group. Whether it will prove to be identical with it, or only nearly allied, I will not undertake to say at present; but I must decide for certain when my Canarian material is sufficiently assorted for examination.



Fam. **Helopidæ.**Genus **HELOPS.**

Fabricius, Syst. Ent. 257 (1775).

9. *Helops Leacocianus*, Woll.*Helops Leacocianus*, Woll., Ins. Mad. 517 (1854).

A single example was taken by Mr. Leacock on the 'Great Piton' in 1851.

Fam. **Blapsidæ.**Genus **BLAPS.**

Fabricius, Syst. Ent. 254 (1775).

10. *Blaps gages*, Linn.*Tenebrio gages*, Linn., Syst. Nat. ii. 676 [script. per err. *gigas*] (1767).*Blaps gages*, Fab., Ent. Syst. i. 106 (1792).

— —, Woll., Ins. Mad. 508 (1854).

Several specimens of the common *Blaps gages* have been lately communicated by the Barão do Castello de Paiva, and were taken I believe on the 'Great Salvage.' It is a tolerably common insect both in the Madeiras and the Canaries.

Fam. **Ædemeridæ.**Genus **DITYLUS.**

Fischer de Waldh., Mém. de la Soc. de Nat. de Moscou, v. 469 (1817).

11. *Ditylus fulvus*, Woll.*Ditylus fulvus*, Woll., Ins. Mad. 523 (1854).

A single specimen of this beautiful *Ditylus* was discovered by Mr. Leacock on the 'Great Piton' in the spring of 1851. For the reason given under the *Hegeter latebricola*, I must decline at present to pronounce for certain whether or not it is identical with the *D. concolor* of Brullé, which I have recently captured in Grand Canary, Teneriffe, and Palma; but my belief is, that a careful comparison will prove it to be conspecific with that insect.

Such are the eleven species of Coleoptera which have been hitherto detected on these small and remote rocks; and it is interesting to remark, that they are each of them exponents of a separate genus,

and represent as many as nine families, whilst five of the species (*i. e.* nearly half of the entire number) are Heteromerous. Although it may appear absurd, at first sight, to speculate from such scanty data, it nevertheless is not difficult to decide, even from this material (which, after all, is considerable enough from islands thus minute), to which of the Atlantic groups these intermediate "stepping-stones" are the more akin; for if we remove the *Cercyon centrimaculatum* and *Blaps gages*, which are common to both, from the above list, we shall perceive that, of the remaining nine, eight are most intimately connected with Canarian forms,—whilst two of these (the *Hegeter latebricola* and *Ditylus fulvus*) will, in all probability, be found to be absolutely identical with them. The *Pterostichus haligena*, moreover, is very nearly related to the *P. canariensis*, Brullé (belonging to a section, *Orthomus*, which apparently does not exist in Madeira); the *Harpalus pelagicus* is, emphatically, on the Canarian type; the *Acalles Neptunus* finds its natural ally in the *A. argillosus* of Teneriffe; the *Deucalion oceanicus* is more akin to the *D. gibbus* of the Canaries than to the Madeiran *D. Desertarum*; and the *Opatrum dilatatum* is but slightly removed from a representative of the same genus which is found in Fuerteventura and Lanzarote,—the *Helops Leacocianus* alone having perhaps more affinity with a species from the Madeiras (namely, the Porto-Santan *H. infernus*) than with any of those from the Canaries; though even of this I have by no means, as yet, completely satisfied myself. So that I think we may fairly conclude from these facts, that the Salvages, if indeed they are to be considered as belonging physically to either of the neighbouring groups, are essentially Canarian.

### VIII.—Descriptions of six new species of Chrysomela from the East.

By J. S. BALY.

#### 1. *Chrysomela Templetoni*.

*C. breviter ovata*, valde convexa, obscure nigro-ænea, nitida; elytris subglobosis, obscure rufis, utrisque striis decem punctorum impressorum biserialim dispositis instructis.—Long.  $3\frac{1}{2}$ –4 lin.

Very convex, obscure nigro-æneous, nitidous; elytra obscure rufous. Head nearly impunctate; antennæ black, slender, more than half the length of the body, subincrassate towards their apex. Thorax twice broader than long; sides slightly dilated from their base to before the middle, thence rotundate-angustate to the apex: above smooth and shining, sparingly impressed here and there with fine but distinct punctures; sides thickened, bounded within by a longitudinal depression. Scutellum semiovate. Elytra subglobose, smooth and shining,