

margins bright yellow. *Elytra* with three transverse fasciæ, common to both (one of which is sub-basal and broadly interrupted at the suture, the second medial and biarcuate, and the third postmedial and entire), the apex, and the *scutellum*, bright yellow. *Antennæ* and *legs* rufo-ferruginous; the *former* with their basal joint and the apical five or six, and the *latter* with the central portion of their four anterior femora, infuscated.

The *C. Arietis*, so extremely common throughout Europe, may very possibly have been accidentally imported into Madeira from more northern latitudes; and especially so since it is evidently scarce in these islands, it having never come under my own observation in a recent state. The unique example on which its admission into our fauna rests was captured many years ago, in the vicinity of Funchal, by the late Dr. Heineken,—from whose collection it was communicated to me by the Rev. R. T. Lowe.

Genus 142. DEUCALION, *Woll.* (TAB. IX. fig. 2.)

Corpus magnum, elongato-ovatum, minus pubescens: *capite* (IX. 2 a et 2 b) amplo deflexo; *oculis* valde emarginatis (subluniforibus): *prothorace* maximo elongato inæquali rugoso, ad latera dente medio parvo instructo, postice subito transversim constricto et plicato: *mesothorace* elongato cylindrico, in parte superâ scobinâ mediâ asperâ longitudinali munito (quare insectum per frictionem strepere potest): *elytris* ovatis subconnatis, valde tuberculato-asperatis, apice interdum inæqualibus: *alis* obsolete. *Antennæ* ad marginem oculorum internum (in processus duos) insertæ, plus minusve longissimæ setaceæ, articulis intermediis leviter hirsutæ, articulo primo robusto, secundo brevissimo, tertio elongato, reliquis huic paulo brevioribus vix decrescentibus. *Labrum* magnum subcorneum, apice pilosissimum, lateribus rotundatis coriaceis. *Mandibula* corneæ validæ crassæ, basi latæ, apice incurvæ acutæ, margine interno integro. *Maxillæ* (IX. 2 c) bilobæ submembranaceæ, lobis valde setoso-pubescentibus. *Palpi* longissimi robusti subfiliformes; *maxillares* articulo primo vix parvo extus (ut in Blabinoto) profunde sinuato, secundo et tertio majoribus subæqualibus, ultimo elongato fusiformi apice subacuminato; *labiales* (IX. 2 d) e scapis ligulæ connatis surgentes, articulo primo vix parvo extus leviter sinuato, secundo paulo longiore crassiore, ultimo elongato fusiformi-ovato apice subacuminato. *Mentum* corneum brevissimum transversum, angulis anticis rotundatis, apice leviter emarginatum. *Ligula* longissima membranacea, antice profunde fisso-biloba, lobis subdivergentibus pilosis. *Pedes* elongati robusti: *femoribus* vix clavatis: *tibiis intermediis* pone apicem externum excavato-constrictis.

A Δευκαλίων Deucalion.

There is no genus, perhaps, throughout all the Madeiran Coleoptera, more truly indigenous than *Deucalion*. Confined apparently, so far as these islands are concerned, to the remote and almost inaccessible ridges of the two southern Dezertas, it would seem to bid defiance to the most enthusiastic adventurer who would scale those dangerous heights. Its excessive rarity moreover, even when the localities are attained, must ever impart to it a peculiar value in the eyes of a naturalist; whilst its anomalous structure and sedentary mode of life* give it an

* When we consider indeed the apterous nature of *Deucalion*, its subconnate elytra, and its attachment (at any rate in the larvâ state) to the interior of the stems of particular, local plants, or its retiring

additional interest in connection with that ancient continent of which these ocean ruins, on which for so many ages it has been cut off, are the undoubted witnesses. Approximating in affinity to *Parmena* and *Dorcadion*, yet presenting a modification essentially its own, it becomes doubly important in a geographical point of view; and it was therefore with the greater pleasure that I lately received, from T. S. Leacock, Esq., of Funchal, a *second* representative from the distant rocks of the Salvages (midway between Madeira and the Canaries),—on which we may almost pronounce for certain that an entomologist had never before set foot. Differing widely in specific minutiae, yet agreeing to an identity in everything generic, they offer conjointly the strongest evidence to the *quondam* existence of many subsidiary links (long since lost, and radiating in all probability from some intermediate type) during the period when the whole of these islands were portions (and perhaps very elevated ones) of a vast continuous land.

In the details of their trophi the genera of this section of the *Eucerata* are so nearly similar, that we must not look, even in otherwise anomalous forms, for any very striking irregularities there. And yet the mouth is not altogether uncharacterized in *Deucalion*, since its laterally-rounded upper lip, long and acuminate palpi (the basal joint of which is broadly sinuated externally, as in *Blabinotus*), together with its unusually produced and deeply bilobed ligula, at once remove it from *Dorcadion*,—from which moreover its largely developed and exceedingly uneven prothorax (a hinder zone of which is suddenly constricted, as though by a wide and tightened belt, and is ribbed with *transverse* plaits), added to its curiously pitted and tubercular elytra, will still further serve to separate it. In some respects perhaps it is more akin to *Parmena* than to *Dorcadion*: nevertheless its comparatively gigantic size, and the contracted, plicate, posterior band of its (otherwise) greatly wrinkled prothorax, apart from the above-mentioned peculiarity of its elytral sculpture (one of the most remarkable features which it possesses), and its freedom from the dense elongated pile which is more or less evident in all the members of the former, will equally distinguish it from that group also.

Amongst other singularities, a tendency (which I have likewise observed, occasionally, in the *Morimi*) to have one of their elytra a little shorter than the other is strongly indicated in the *Deucaliones*. Thus, of my two examples of the *D. Desertarum* one is very decidedly so constituted; and, out of eight of the *D. oceanicum* it is traceable in no less than three. Like many of their allies in this department of the Longicorns, they are gifted with the capability of making a grating or hissing noise,—the *modus operandi* in producing which (since I have not been able to

propensities within the crevices of rocks, we are at once struck with the conviction that, during the enormous interval of time which has elapsed since the mighty convulsions which rent asunder these regions terminated, it has probably never removed many yards from the weather-beaten ledges which it now inhabits.

meet with any explanation of it altogether satisfactory) I have taken some pains to investigate. The solution given by Mr. Westwood, in his admirable *Introduction to the Modern Classification of Insects* (vol. i. p. 356), would seem to come nearest to the truth, but still it does not quite apply to the species under consideration,—which are moulded, thus far, on one and the same principle. Mr. Westwood states that the sound is generated by the friction of a polished portion of the *scutellum* against the edge of the prothoracic cavity. In *Deucalion*, *Parmena* and *Dorcadion*, however, there is a narrow space, in the shape of an isosceles triangle (the apex being turned towards the scutellum), which occupies *nearly the entire length* of the mesonotum, and which, from its brightness, appears at first sight to be perfectly smooth. When viewed however beneath the microscope, this longitudinal area is seen to be composed of very fine, transverse, parallel and acute ridges, closely set together after the manner of a file: and it is by depressing and raising the prothorax (an act which alternately exposes and re-covers the upper region of the *extremely cylindrical* mesothorax) that its under side is brought to play against this inner dorsal file,—by which process the stridulation is effected. In order to convince myself of the reality of this, I have relaxed many specimens of the genera in question, and have caused the sound artificially with the greatest ease.

Hence, we can immediately appreciate the object of the broadly constricted basal margin of the prothorax of *Deucalion*, which is so regulated that it may present a more perfect and contiguous surface to the mesothorax,—whilst, by being more tightly drawn as it were over that especial part, it is made likewise to grate more vigorously against the lower file. This transverse, coarctate ring is not expressed at all in *Dorcadion*, and it is but faintly suggested in a few of the *Parmenæ*: so that we should *à priori* have expected that the stridulating power of *Deucalion* would be more effectual than is there the case. And such, on inquiry, we find to be a fact: for so loud is the sound which the *D. Desertarum* is able to accomplish, that the only individual which has come under my notice in a recent state I heard at a considerable distance; and the second example as yet detected was described by the Rev. R. T. Lowe (who obtained it from the extreme summit of the Ilheo Bugio, or Southern Dezerta) as emitting a “buzzing noise, somewhat resembling that of a Humble Bee.” Everything indeed in this strange genus seems designed to give full effect to these, far from unmusical, inter-thoracic notes; for, in addition to the hinder contracted belt already mentioned, the pronotum of *Deucalion* is furnished with an exceedingly deep, rounded, postmedial fovea, which (since it projects beneath) must evidently form an extra instrument of impact to sweep over the mesothoracic file,—when its head (and, simultaneously, its prothorax) is by turns lowered and upraised. In the Salvagian* representative this impression is less developed than in the Dezertan one; never-

* Whilst unwilling to insert the descriptions of extra-Madeiran *forms* into the body of this work, I can see no objection to admitting the diagnoses of a few nearly allied species (both in affinity and geographically) into the notes. The following characters therefore of the large and remarkable *Deucalion*

theless it exists in them both,—conjointly with the other structural characters above enumerated.

from the Salvages will not be here out of place,—and especially so since it is scarcely less remarkable in outward contour, or interesting in local importance, than its Dezertan analogue.

Deucalion oceanicus, Woll.

D. oblongo-ovatus crassus subdepressus niger subopacus et dense lurido-pubescent, prothorace inæquali ad latera spinâ mediâ instructo, in disco postico foveâ rotundatâ plus minusve profundâ impresso, elytris substriatis, interstitiis crebre varioloso-tuberculatis, antennis minus elongatis apicem versus fuscis.

Long. corp. lin. 5–9.

Habitat in insulis remotis “Salvages” dictis, a Dom. Leacock sub lapidibus detectus.

D. broader and thicker than the *D. Desertarum*, also rather more depressed, dull black, nearly opaque, and densely clothed with short decumbent lurid (or dirty yellow) hairs. *Antennæ* considerably shorter than the body; piceous at their base, but fuscous towards their apex. *Head* large and rough; with an impressed central line, and a small, narrow and rather shallow fovea on the top of the forehead behind the eyes. *Prothorax* wider and shorter than in the *D. Desertarum*; uneven and wrinkled, and with the sides produced into an obtuse postmedial spine; the hinder margin not quite so straight as in the *D. Desertarum* (having an obscure tendency to be waved); broadly constricted (though much less distinctly so than in the Dezertan insect) posteriorly, the constricted portion being transversely-plicate; and impressed on its hinder disk (just in front of the coarctate belt) with a small, rounded and more or less shallow fovea. *Elytra* obscurely striated; the interstices thickly beset with shallow variolose pits or impressions, the anterior edge of each of which is raised into a very large, distinct, obtuse, and somewhat overhanging tubercle,—the tubercles being free from pubescence, and (as in the *D. Desertarum*) more numerous and elevated towards the humeral angles and base (nevertheless altogether larger and denser than in that species). *Legs* slightly piceous, but thickly beset, like the rest of the surface, with dirty-yellowish pile.

A most beautiful and well-marked *Deucalion*; and readily known from the *D. Desertarum* by its extraordinary instability of stature, by its broader, thicker, more depressed, and densely pubescent body, by its shorter prothorax and antennæ (the former of which is not quite so uneven as in that species, and has both the hinder central fovea and the coarctate band less defined), and by the larger, more numerous, and obtuser tubercles of its perceptibly striated elytra. The shallowness of its elytral impressions indeed, in conjunction with the much greater development of the prominences, might have caused it to have been described as simply tuberculose, did not the *D. Desertarum* fortunately exist to explain their formation,—which, it will be seen on inspection, is the same as in that insect. For, whilst the varioles of the *D. Desertarum* are exceedingly distinct and the tubercles small (the latter seeming to be principally generated by the oblique upheaval of the anterior edge of the former,—as though the result of the indirectness of the force which, impinging against the surface, had dug out the depressions); in the *D. oceanicus* the law is somewhat reversed,—the elevations being considerably developed, and the pits almost obsolete. The specimens from which the above description has been compiled were detected (as already mentioned) in the Salvages by T. S. Leacock, Esq. of Funchal,—whose researches on those remote rocks, in 1851, have brought to light many interesting facts bearing on their geographical relation to the one great system of which all these Atlantic groups are but detached portions. The insect under consideration came from the smaller of the two islands (known nevertheless as the “Great Piton”),—which Mr. Leacock describes as a very singular spot; being a cone of rock projecting out of a sandy base, and covered with a profusion of plants. Out of the six members of the Coleoptera which he collected, all are specifically new; yet, at the same time, so intimately allied to both the Madeiran and Canarian types as to constitute a stepping-stone as it were between the two.

330. *Deucalion Desertarum*, Woll. (TAB. IX. fig. 2.)

D. oblongo-ovatus subconvexus niger nitidus et fere glaber, prothorace elongato valde inæquali, ad latera spinâ mediâ instructo, in disco postico foveâ magnâ rotundatâ valde profundâ impresso, elytris sparsim varioloso-tuberculatis, antennis elongatis apicem versus fuscis.

Long. corp. lin. 7-8.

Habitat Desertam Grandem et Australem, rarissime: duo specimina (unum sc. a meipso in summo illius fastigio, e rupium fissurâ, Januario exeunte A.D. 1849, et alterum in hâc a Rev^{do} Dom. Lowe d. 3 Jul. ejusdem anni, detecta) sola vidi.

D. elongated, oblong-ovate, convex, deep black, shining, and almost free from pubescence. *Antennæ* nearly as long as the body; piceous at their base, but fuscous towards their apex. *Head* large and rather elongated; with an impressed central line, and with a wide and deep subtriangular fovea on the top of the forehead behind the eyes. *Prothorax* elongated; exceedingly uneven and wrinkled, and with the sides produced into an obtuse postmedial spine; the hinder margin perfectly straight; broadly and suddenly constricted posteriorly, the constricted band being transversely plicate; and impressed on its hinder disk (just in front of this coarctate belt) with a large, rounded and exceedingly deep fovea. *Elytra* with the suture rather depressed, but with scarcely any indications of striæ; somewhat irregularly beset with variolose pits, or obliquely-impinged impressions, the anterior edge of each of which is raised into a distinct, rather acute, and slightly overhanging tubercle,—the tubercles being most numerous and most elevated towards the humeral angles and base. *Legs* slightly piceous,—with the *tarsi* paler, and with the apex of each of the *tibiæ* (especially of the four hinder ones) beset with yellowish pile.

Apparently of the utmost rarity, the only two specimens which I have seen having been captured on the respective summits of the Middle and Southern Dezertas. The one from the former was taken by myself, during a week's sojourn in that desolate spot, with the Rev. W. J. Armitage, in January 1849. I extracted it from out of a crevice of an exposed weather-beaten peak (where it had secreted itself, in company with the *Scarites abbreviatus* and several species of *Helops*) at the immediate point where the great central heights commence to narrow into an almost perpendicular ridge nearly 2000 feet above the sea. Although I searched with the greatest diligence, I could not obtain more; nor indeed was I able to procure it during a subsequent encampment on the island, with the Rev. R. T. Lowe, at the end of May 1850,—even though I visited the identical crag and split open the fissures, both of it and of the hardened volcanic mud in all directions around it. The second example hitherto detected is from the still more perilous steeps of the Ilheo Bugio, or Southern Dezerta, and it is to the Rev. R. T. Lowe that we are indebted for this interesting contribution to the fauna of that almost unapproachable rock. Having, on the 3rd of July 1849, succeeded in reaching the summit, not without much difficulty and at the greatest peril (in the pursuit principally of land mollusca and plants), Mr. Lowe informs me that he met with it beneath a slab of stone, and that he was attracted (as already mentioned) by its remarkable, stridulating noise. So local indeed does this insect seem to be, that it, appa-

rently, has not extended itself even over the Dezerta Grande (where there are no external obstacles to bar its progress); but retains the very position which in all probability constituted its original centre of dissemination at the remote period of time when this ancient continent received its allotted forms. Judging from the slowness with which creatures of such habits must necessarily (under any circumstances) be diffused, it is at least unlikely that the present one could have circulated far, when the now submerged portions of that region began to give way; and hence it is not impossible that the Southern Dezerta with the adjacent part (then united to it) of the Central one may have embraced the *whole area* of its actual primæval range,—the remains of which (though they be now separated by a channel) it still continues to occupy, and from which, even where physically unimpeded, it has never roamed.

SECTIO IX. PHYTOPHAGA.

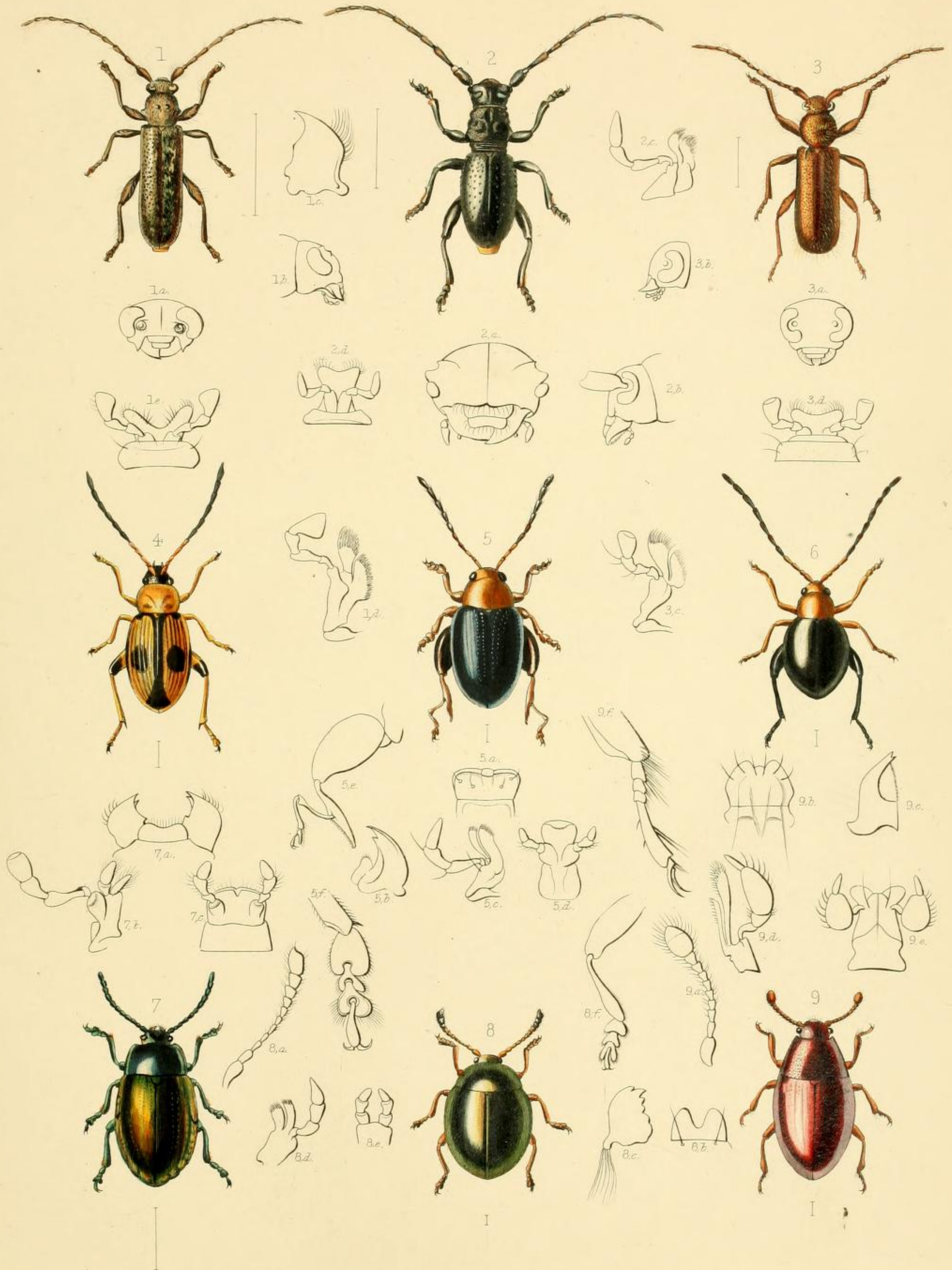
Fam. 38. CRIOCERIDÆ.

Genus 143. LEMA.

Fabricius, *Ent. Syst. v. Suppl.* 90 (1798).

Corpus parvum, parallelo-oblongum, interdum læte coloratum: *capite* porrecto; *oculis* subintegris: *prothorace* elytris angustiore, postice sæpius constricto: *scutello* apice valde truncato: *alis* amplis. *Antennæ* robustæ filiformes, vel apicem versus vix incrassatæ, articulo primo robusto breviusculo, secundo brevissimo, tertio, quarto et quinto longitudine variabilibus, reliquis subæqualibus latitudine plus minusve leviter crescentibus. *Labrum* corneum, subquadrato-transversum, apice vix integrum. *Mandibulæ* validæ corneæ latæ, apice acutæ bifidæ, margine interno sæpius integro. *Maxillæ* bilobæ submembranaceæ, lobis valde ciliatis. *Palpi* filiformes; *maxillares* articulo primo parvo, secundo majore subclavato, tertio huic paulo brevior, ultimo elongato-oblongo apice obtuso; *labiales* articulo primo parvo, secundo majore crassior, ultimo subovato apice obtuso. *Mentum* corneum subluniforme, antice profunde emarginatum. *Ligula* submembranacea, apice setosa integra. *Pedes* leviter elongati: *unguiculis* basi connatis.

Both *Lema* and *Crioceris* may be known from the rest of the *Phytophaga* here described by their comparatively elongated, parallel forms, and by their subcylindrical prothoraces,—which are much narrower (especially at their base) than the elytra. They are genera of a wide geographical range, occurring in nearly all parts of the world. The insects of which they are composed are principally gaily-coloured, and are exclusively attached to plants (particularly those of a succulent nature),—on which, both in their larva and perfect states, they subsist. The species are exceedingly numerous,—M. Lacordaire, in his *Monographie des Phytophages*, enumerating no less than 273 of the former, and 43 of the latter.



1. *Blabinotus spinicollis*, Woll.
 2. *Deucalion Desertarum*, Woll.
 3. *Trichoferus senex*, Woll.

4. *Longitarsus Isoplexidis*, Woll.
 5. *Psyllides tarsatus*, Woll.
 6. *Longitarsus Ginerariae*, Woll.

7. *Chrysomela Fragariae*, Woll.
 8. *Mniophilosoma laeve*, Woll.
 9. *Floeosoma ellipticum*, Woll.