

Descriptions of some new species of Carabideous Insects, from the collection made by C. Darwin, Esq., in the Southern parts of S. America. By G. R. WATERHOUSE, Esq., Curator and Assistant Secretary to the Zoological Society.

THE insects I am about to describe belong to that great group of *Carabidae* to which Dejean applies the name *Ferroviana*, and to a section of that group, the species of which are distinguished by there being a kind of peduncle separating the *thorax* from the body,—giving to them a superficial resemblance to the *Scaritidae*. This constricted portion between the *thorax* and *abdomen* is formed above by a produced portion of the *elytra*, which become suddenly narrow in front, and form, together with a portion of the *mesothorax*, a cylindrical neck, which apparently serves to give greater freedom of motion to the fore part of the insect. *Broscus cephalotes* affords an example of this group in which *Miscoderus*, *Stomis*, *Casnacanthus*¹ of Gray (which is the *Promecoderus* of Dejean), and *Beripus*, may also be included. These insects are most of them remarkable for the convex form of the *thorax* and *elytra*, the want of produced posterior angles to the latter, which is usually almost destitute of posterior *fovea*, and dilated lateral margins—the dorsal channel moreover is generally very indistinct. In these respects the present group of insects affords a strong contrast to the more typical *Ferrovie*, if we may regard the species belonging to the genera *Pterostichus* and *Omasus* as such.

In addition to the several genera (allied as it appears to me to *Broscus*) already mentioned, we are indebted to Mr. Curtis for the knowledge of three others possessing the same essential characters. I allude to the genera *Odontoscelis*, *Cardiophthalmus* and *Cascellius*, published by Mr. Curtis in the *Linnean Transactions*.²

The genus *Odontoscelis*, Curtis, is founded upon an insect brought by Capt. King from Valparaiso,—an insect which I have observed in many of our collections. In the '*Histoire Naturelle des Insectes*' by MM. Audouin and Brullé³, a second species of the same genus is described and figured as an

¹ *Casnacanthus gibbosus* of Gray appears to me the same as the *Promecoderus brunnicornis* of Dejean, which is from Van Diemen's Land, and perhaps some other parts of Australasia, and not from Africa as has been stated. The genus *Casnacanthus* of Guérin and Brullé being synonymous with Mr. Curtis' genus *Odontoscelis*, the species of which are from South America, must not be confounded with *Casnacanthus* of Gray.

² Vol. xviii. part 2.

³ Tome iv. bis 2nd part, page 378, plate 15, fig. 4.

illustration of Mr. Gray's genus *Cnemacanthus*, whilst in the same work will be found a true species of *Cnemacanthus* described and figured under the name *Promecoderus Lattini*.¹

M. Guérin-Méneville, in the 'Magasin de Zoologie,'² also figures and describes certain species of *Odontoscelis* under the name of *Cnemacanthus*, but this author perceives that the species of *Cnemacanthus* of the French authors differ in certain respects from the type of the genus figured in Griffiths' 'Animal Kingdom,' inasmuch as they have the anterior *tibiæ* prolonged externally; he states however that a small species which is found in Peru has not this external prolongation of the *tibiæ*, "et vient par conséquent se ranger exactement à côté du type de M. Gray. Nous ne pensons pas que cette légère différence soit suffisante pour motiver l'établissement d'un nouveau genre; nous nous en servirons pour diviser les *Cnemacanthus* en deux sections, ainsi qu'il suit." The author then proposes to distinguish those species which have the anterior *tibiæ* produced externally, by the name of *Cnemalobus*, retaining *Cnemacanthus* for Mr. Gray's species, and one other which he names *Cnem. parallelus*.

Now to those who are engaged in the study of the geographical distribution of species, it is most important to know what genera there are, species of which are found both in Australia and South America; it is highly desirable therefore that the difference in the structure of the anterior *tibiæ* of *Cnemacanthus* proper and *Odontoscelis* should be attended to, and that the *Cnemacanthus parallelus* be submitted to further examination, for Mr. Gray's genus does *not* differ only from *Odontoscelis* in not having the *tibiæ* produced externally—there are other very important differences—one of them indeed has been considered so important by Dejean,³ that he established two great groups which are distinguishable by it, and alluded to the *tarsi* of the intermediate pair of legs being dilated in the male sex, as well as the anterior pair; such is the case in *Cnemacanthus* proper, whereas in *Odontoscelis* only the anterior pair are dilated in the males; again, in *Cnemacanthus* the tooth in the notch of the *mentum* is short, broad, and truncated, whilst in *Odontoscelis* it is long and pointed.

¹ Id. page 450, plate 18, fig. 4.

² Année 1838, liv. 2, pp. 9—13, plates 226 and 227.

³ This author places his genus *Promecoderus* (which, as before stated, is synonymous with *Cnemacanthus* of Gray) in his section '*Harpaliniæ*.'

Genus.—*ODONTOSCELIS*, Curtis. *Cnemacanthus*, Audouin and Brullé. *Cnemacanthus* (sub-genus *Cnemalobus*) Guérin-Méneville.

Sp. 1. *Odon. Teutyrioides*, Curtis, Linn. Trans. vol. xviii. part 2, page 187, plate 15, fig. D.

Cnemacanthus obscurus (?), Brullé, Hist. Nat. des Insectes, tome iv. (16), 2de livraison, page 377.

Two specimens agreeing in all respects (excepting in having a bluish tint on the under side of the body and legs) with Mr. Curtis's description, are in the collection of Mr. Darwin; they are from Valparaiso, the same locality as that given by Mr. Curtis.

Sp. 2. *Odon. cyanens*.

Cnemacanthus cyanens, Brullé, as above, page 376.

Much larger than the last and of a blue colour: its length is 10 lines (French measure), whilst *Odon. Teutyrioides* is about 8 lines. Inhabits Chili.

Sp. 3. *Odon. Demarestii*.

Cnemacanthus (*Cnemalobus*) *Demarestii*, Guérin-Méneville, Magasin de Zoologie, Année 1838, livraison 2me, page 9, plate 326 of class ix.

A very large species, from 28 to 30 'millimètres' in length. It is black above, tinted with green on the margins of the *thorax* and *elytra*. Inhabits Cordova.

These are all the species of *Odontoscelis* which I can find described; in the collection of Mr. Darwin there are four others, the characters of which I shall proceed to point out.

Sp. 4. *Odon. Darwinii*. Suppl. Plate xix. fig. 1.

Odon. latus, supra laevis, nitidè viridis; pedibus corporeque subtis violaceo-nigris; antennis, mandibulis, palpis, tarsisque pieco colore obscurè tinctis.

This species is from 10½ to 11½ lines in length, and from 4½ to 4 lines in width. The upper parts of head, *thorax*, and *abdomen* are of a brilliant blue-green colour, the under parts are black, and the legs, *antennae*, mandibles and *palpi* are pitchy black; a slight bluish tint is observable in certain lights on the under parts of the body, and on the under side of the *prothorax* there is a faint green hue: a few long

hairs spring from the sides of the *thorax* and *elytra*, and also from the fore part of the head and above the eyes. The *thorax* is rather narrower than the *elytra*; its upper surface is convex, the sides are rounded, and so are the posterior angles, the hinder margin is slightly indented in the middle and near the posterior angles: the breadth of the *thorax* is about one third greater than its length; the dorsal channel is very indistinct, and there is a faint, posterior, transverse depression; along the outer margins are seven or eight large punctures. The *scutellum* is large and almost semicircular. The *elytra* are very convex and almost smooth; their length is less than one third greater than their breadth; on each *elytron* is a row of punctures, which commences at the shoulder, and ends nearly at the apex of the *elytra*; excepting near the shoulder (where the punctures are close to the outer margin) this row runs parallel with and at a short distance from the outer margin of the *elytron*, and on the margin itself a second row of punctures is observable; these are rather widely separated, and each puncture gives root to a long hair; a few punctures, also giving root to long hairs, are also observable on the shoulder, and again towards the apex of the *elytra*; these are situated above the first-described row.—There are no *striae* on the *elytra*. On each of the abdominal segments is a transverse row of punctures, each having a hair like those on the outer margins of the *elytra*. The legs are rather densely clothed with short bristly hairs, especially on the *tibiae* of the posterior and middle pair: on the outer margin of the anterior *tibiae* there are no hairs; these *tibiae* are much dilated at the apex, and the outer portion is produced and pointed; in the male it terminates nearly in a line with the apex of the basal joint of the *tarsus*, whilst in the female, where it is larger, it terminates opposite (or nearly so) to the base of the fourth joint of the *tarsus*: a row of punctures is observable on the under side of all the *femora*. Length of *thorax* in the female very nearly 3 lines; width of ditto $4\frac{1}{2}$ lines: length of *elytra* $6\frac{1}{2}$ lines; width of ditto $4\frac{1}{2}$ lines in the female.

This species was obtained by Mr. Darwin at Bahia Blanca, North Patagonia.

Sp. 5. *Odon. Curtinii*.

Odon. latissimus, supra levis, niger; subtis violaceo-niger; antennis, mandibulis, palpis, pedibusque piceo-nigris; thorace elytrisque apud marginem submetallico reticentibus, illo subviridi, his colore purpurascens.

This species is about equal in size to the last; and, like that, has a row of widely separated punctures near the lateral

margins of the *thorax*: the punctures on the sides of the *elytra*, segments of the *abdomen* and *femora*, are the same; it differs however in being rather shorter, broader, rather less convex, and in having the upper parts of the body black and almost destitute of gloss. The *thorax* is rather convex, much broader than long, and equal in width to the *elytra*, or very nearly so; the sides and posterior angles are rounded, and the dorsal channel very indistinct; behind is a slight transverse indentation on either side, and extending nearly to the mesial line. *Elytra* rather convex, about one fourth longer than broad; smooth. Legs pitch-coloured; *antennæ*, *palpi*, and *tarsi* pitchy red. In one female there is a transverse row of punctures on the apical portion of the last segment of the *abdomen*; in a second about four oblong indentations are observable. A very indistinct greenish tint is observable near the margins of the *thorax* and outer margin of the *elytra*, and there is a faint blue tint on the under parts of the insect.—Total length, 11 lines; length of *thorax* 3 lines; width of ditto $4\frac{1}{2}$ lines; length of *elytra* $6\frac{1}{2}$ lines; width of ditto $4\frac{1}{2}$ lines. The specimens described are females.

Brought from Port Desire, Patagonia, by Mr. Darwin.

Sp. 6. *Odon. striatus*.

Odon. mediocriter latus, niger, subtus leviter caruleo-viridi tinctus; elytris distinctè striatis; stris hæc punctatis, interspatiis penulium convexis; elytris ad marginem externum aliquantò violaceis.

Much less than either of the preceding, but larger than *Zabrus obsesus*. General colour black, the under parts of the body (especially the *thorax*) tinted with greenish; sides of *elytra* and *thorax* tinted with purple or greenish. *Thorax* convex, about equal in width to the *elytra*, broader than long; the sides and posterior angles much rounded, the anterior portion emarginated; dorsal channel indistinct; posterior transverse depression scarcely visible. *Elytra* convex, their breadth about equal to two thirds of their length; distinctly striated, the *stris* impunctate, and the interspaces convex. On the lateral margins of the *thorax* are six or seven large punctures, and close to the outer margin of the *elytra* is a longitudinal series of punctures; besides these there are two or three larger punctures near the apex of the *elytra*: a few large punctures are observable on the under side of the *prothorax*, and on each of the abdominal segments is a transverse row of punctures; these punctures however are not found on and near the mesial line: at the apex of the last segment there are from two to four punctures, on either side, and placed in a line: numerous hairs, springing from the

punctures, are observable on the sides of the *thorax* and *elytra*. Length, $8\frac{1}{2}$ lines; width, $3\frac{1}{2}$ lines.

In one of Mr. Darwin's specimens the *striae* of the *elytra* are rather less distinct than in two others from which the above description is drawn up, and the interstices are flat on the fore portion of the *elytra*; — it is moreover of a smaller size, being only $7\frac{1}{2}$ lines in length.

Mr. Darwin found this species on a sandy plain at Bahia Blanca, N. Patagonia.

Sp. 7. *Odon. substriatus*.

Odon. ater, corpore breviusculo, convexo; elytris substriatis, stria indistinctis, interspatiis leviter convexis.

Thorax rather narrower than the *elytra*, convex; the sides rounded, posterior angles also rounded, but very slightly prominent; dorsal channel indistinct; scarcely any trace of posterior transverse impression; *elytra* convex, their width equal to more than two thirds of the length; faintly striated, the interspaces slightly concave. Colour dull black; under parts with a bluish tint. The puncturing on the sides of the *thorax*, *elytra*, segments of *abdomen*, and *femora*, as usual. The hairs on the sides of *thorax* and *elytra* numerous. — Length from $6\frac{3}{4}$ to $7\frac{1}{2}$ lines; width from $2\frac{3}{4}$ to 3 lines.

This species is considerably smaller than either of the preceding; it is proportionately shorter than *Odon. Tentyrioides*, there is less space between the *thorax* and *abdomen*, and it is moreover distinguished by its striated *elytra*. *Odon. Tentyrioides* is smooth, or very nearly so; *Odon. substriatus* is rather delicately striated, and *Odon. striatus* is distinctly striated. *Odon. substriatus* is also intermediate in form between the other two species mentioned, being shorter and rather more convex than the first, and less convex than the last, from which it moreover differs in being narrower.

GENUS. — *CARDIOPHTHALMUS*, Curtis.

Closely allied, as it appears to me, to *Odontoscelis*, is the genus above named, — a genus (with too long a name) established by Mr. Curtis, upon an insect brought from Port Famine by Capt. King.¹ I had long since determined to found a genus upon two species of *Carabidae* forming part of a collection placed in my hands for description by Mr. Darwin; but upon studying Mr. Curtis's paper, I found that they pos-

¹ Linn. Trans. xiii. part 2, page 184.

essed all the essential characters of his genus *Cardiophthalma*. The chief differences between the insects of this genus and those of *Odentoscelis*, consist in the central tooth of the *mentum* being bifid; the legs and *antennæ* much longer; the great length of the spines with which all the *tibiæ* are furnished at their apex, and the proportionately narrower *thorax*, combined with the short, ovate and convex form of the body.—The anterior *tibiæ* are somewhat suddenly dilated at the apex (in the two species before me), and the external portion is slightly produced. The anterior *femora* in the species described by Mr. Curtis, is furnished with three or four small angular projections on the under side and near the base. I find the same character in one of the specimens before me, but in two other specimens (one of which is decidedly the same species as the first) there is merely a slight unevenness on that part of the *femur*,—possibly therefore it may be a sexual character: in the structure of the anterior *tarsi* there is no difference—they are all slender, and destitute of velvet-like pads or membranous appendages beneath.

Sp. 1. *Card. Clivinoïdes*, Curtis, Linn. Trans. xviii. part 2 page 185, plate xv. fig. C.

Sp. 2. *Card. longitarsis*. Suppl. Plate xix. fig. 2.

Card. nitidè niger, obscurè viridi tinctus; thorace, elytrisque convexis: elytris levissimè striatis.

Thorax elytris angustior, lateribus rotundatis sic et marginalibus, ac leviter, posticè aliquantò attenuatus; sulco dorsali obscurissimo et post hunc notà transversà inculptus. Elytra ad marginem externum seriatim punctis, necnon segmentum abdominis ultimum, ad marginem posticum, notata.

Length, 11 lines; length of *thorax* 3 lines; width of ditto, $3\frac{1}{2}$ lines: length of *elytra* $6\frac{1}{2}$ lines; width of ditto, $4\frac{1}{2}$ lines: posterior *tarsus* very nearly $3\frac{1}{2}$ lines. Head about one third narrower than the *thorax*, the eyes but slightly prominent.—*Thorax* considerably narrower than the *elytra*, convex, the sides and posterior angles rounded; the dorsal channel indistinct; a distinct transverse impression near the hinder margin. The *thorax* is rather attenuated behind, and its broadest part is in the middle, or rather anterior to the middle. *Elytra* very convex, ovate, rounded at the apex; very faintly striated, the *strix* impunctate. General colour black, with a very indistinct metallic gloss; *antennæ* pitchy red; *palpi* pitch-coloured. On the third, fifth, and seventh interspaces between the *strix* of the *elytra* a few widely separated

punctures are observable, but these are confined to the apical portion of the *elytra*; moreover, with a tolerably strong lens some indistinct punctures may be perceived in the *striae*: a series of rather widely separated punctures runs along the outer margins of the *elytra*, and on the apical portion are many subconfluent punctures. On the under side of each of the *femora* is a row of punctures; the terminal segment of the *abdomen* is margined with punctures, and there are two punctures on each of the abdominal segments, one on either side of, and at some little distance from, the mesial line. The posterior *tarsi* are considerably longer than the *tibiae*; each of the *tibiae* is furnished at the apex with two very long spines. The *antennae* are slender, and, if extended backwards, would reach beyond the hinder margin of the *thorax*.

This species is considerably larger than the *Card. Clivinsoides*; it is of a broader form, and its legs and *antennae* are longer, as well as the spines with which the former are furnished.

Sp. 2. *Card. Stephensii*.

Card. nide violaceo-niger; thorax convexo, attenuato, et posticè transversim insculpto; corpore brevi, valdè convexo; elytris levissimè striatis, stilis vix apparentèr punctatis; interspatiis aliquantò convexis.

This species is much smaller than the last, and may moreover be distinguished from that and Mr. Curtis's species by the very convex, short, and almost rounded form of the body: its legs are shorter than in *Card. longitarsis*, and the posterior *tarsi* and *tibiae* are equal in length. The *thorax* is short, convex, attenuated behind, and has the sides and posterior angles rounded; the dorsal channel is very indistinct; and there is a transverse depression near the posterior margin: the *elytra* are very convex, ovate, faintly striated, and the interspaces are slightly convex: the *striae* are indistinctly punctured, excepting on the apical portion of the *elytra*, where the punctures are distinct: some punctures are observable on the outer margin of each *elytron* and on the posterior margin of the apical segment of the *abdomen*; there are also two punctures on each of the other segments of the *abdomen*, as in *Card. longitarsis*.

Total length, $8\frac{1}{2}$ lines; length of *thorax* $2\frac{1}{2}$ lines; width of ditto, $2\frac{1}{2}$ lines; length of *elytra*, 5 lines; width of ditto, $3\frac{1}{2}$ lines.

I have named this species in honour of the author of 'Illustrations of British Entomology,' to whom I am indebted for much information and kindness.



1.



2.



2.a



2.c



2.b



2.d



2.e

1. *Odonotarsus Parvianii*
2. *Cardiophthalmus longitorus*