Norman

Lord Bishop of
Madeira

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The Land Isopoda of Madeira.

By Canon A. M. NORMAN, M.A., D.C.L., LL.D., F.R.S., &c.

[Plate VI. figs. 1–4.]

DURING a visit to Madeira last year I collected a few Crustacea Isopoda Terrestria. M. A. Dollfus has kindly examined for me some which I was unable to determine, and among them he found one species which he regards as "new." As

this species must be described, I propose along with that description to give a list of the other species as yet known to inhabit Madeira.

Ligia italica, Aud. & Sav.

Among rocks about high-water mark; common.

Armadilloniscus tuberculatus, A. Dollfus.

1889. *Armadilloniscus tuberculatus*, A. Dollfus, "Liste supplémentaire d'Isopodes des Açores," Revue Biol. du France, p. 392.

Two specimens of this species recently described from types procured by Lieut. Chaves in the Azores were found by me among stones below high-water mark at Gorgulho, near Funchal.

Lucasius scitus, Budde-Lund (=*Porcellio scitus*, Budde-Lund).

Two specimens from Madeira are in Uljanin's collection (*fide* Budde-Lund).

Lucasius Normani, A. Dollfus, sp. n. (Pl. VI. figs. 1–4.)

This new species has been submitted to M. A. Dollfus, who has decided that it is not described, and has sent me the following description, together with the figures which illustrate it:—

"Body oblong, not broad, moderately convex, covered with granulations, especially on the earlier segments; dorsal surface finely setiferous throughout. Cephalon having the lateral frontal lobes rounded; central lobe well developed, triangular, rounded, the summit blunt. Epistome a little convex, but without any true median tubercle. Eyes with fourteen ocelli. Exterior antennæ equalling the length of half the body; the flagellum almost as long as the preceding joint, its first articulation half as long as the terminal. Posterior margin of the peræon having a slight lateral sinuosity at the sides. Pleon with the lateral processes well developed; the first pleopods in the male with the exopodite broader than long and somewhat obtuse. Pleotelson much longer than broad, with the sides slightly incurved and the extremity subobtuse. Uropods having the basal joint one third shorter than the pleotelson; exopodite lanceolate, short; endopodite reaching to or very slightly extending beyond the end of the pleotelson.

"Colour pale, with two longitudinal brown bands passing down the middle and two other bands on each side; uropods light red.

"Length 6 millim., breadth 2·8 millim.

"The form of the pleotelson and the absence of any true tubercle on the epistome lead us to regard this little species as a *Lucasius*, notwithstanding that the relative length of the antennæ shows more approach to *Porcellio* (sensu stricto). It differs from *Lucanius scitus*, B.-L., which is also found at Madeira, in the longer antennæ, the greater development of the median frontal lobe, the form of the pleotelson, and the general coloration, which is particularly characteristic."

The locality in which this species occurred was the Ilheo dos Embarcadouros, the islet at the eastern extremity of Madeira. This rocky islet has a most remarkable vegetation, being the home of a large number of pretty-flowered crassifolious plants. It is, moreover, the only known locality for three interesting varieties of land-mollusca—*Helix erubescens*, Lowe, var. *advenoides*, Paiva, *Helix polymorpha*, Lowe, var. *irrasa*, Lowe, and the recently described *Helix Watsoni*, J. Y. Johnson *. This last beautifully sculptured *Helix* belongs to the group which includes *Helix tiarella*, Webbe, once living in most extraordinary profusion in Madeira, as evidenced in the fossil deposit at Caniçal, but now rare. It is a question whether this and other allies should not be united under the name *H. tiarella*, for although they do not intermingle either in locality or form, the remarkable sculpture is nearly alike in all. By a parity of reasoning to that which led Wollaston to unite a number of local forms as varieties under the name *H. polymorpha*, the species to which I refer might be aggregated under *H. tiarella*. I rediscovered the shell now named *H. Watsoni* in an extremely limited area of a few square yards only. Not being able to name the form, I showed it to my friend Mr. J. Y. Johnson, the eminent naturalist on the island. He recognized it, and brought out from his stores two or three specimens which had been found by Signor Moniz on the Ilheo dos Embarcadouros many years before. Mr. Johnson told me that Signor Moniz had no recollection of the exact spot on which he had taken it, and although it had been subsequently sought for by Signor Moniz and other friends of Mr. Johnson, it had not been again found. It was my good fortune during the two hours I spent on the islet not only to procure in plenty the species I had gone there to seek, and which are

* "Description of *Helix Watsoni*, n. sp., from Madeira," by J. Y. Johnson, Journal of Conchology, vol. viii. 1897, p. 429.

in abundance, but also to meet with this little *Helix* and the *Lucasius* which is here described. My rediscovery of the *H. tiarella* ally led to its description by Mr. Johnson under the name *Helix Watsoni*.

Metoponorthus sexfasciatus, Budde-Lund.

I procured two specimens, which Dollfus, from their imperfect condition, doubtfully refers to this species, which had been previously found in Madeira by Dr. H. Brönniche.

Porcellio maculipes, Budde-Lund.

This has been taken twice in Madeira, and is unknown elsewhere. I did not meet with it.

Porcellio lævis, Latreille.

Very abundant in the neighbourhood of Funchal, especially in gardens and among bananas.

Porcellio dilatatus, Brandt.

Specimens are in Dollfus's collection which were found by Dr. Nodier.

Eluma purpurascens, Budde-Lund.

This species is remarkable on account of its simple eye-lenses. I met with it up to heights of between 2000 and 3000 feet. Its range extends throughout the Madeiran province, it having been found both in the Canaries and Azores. It has also been met with in Portugal and Spain, and at Charente, France; but of this last locality Dollfus writes:—"où il a été certainement introduit."

Armadillidium vulgare, Latreille.

Very abundant round Funchal.

Armadillidium tigris, Budde-Lund.

Taken by Metschnikoff in Madeira and not known elsewhere (*Budde-Lund*).

Armadillidium granulatum, Brandt.

A specimen taken by Dr. H. Brönniche (*Budde-Lund*).

We thus have twelve Land Isopoda as known in Madeira. Such a list must be far from complete; and I trust that this short notice may lead others to investigate this portion of the Madeiran fauna. The Madeiran group is rich to a most remarkable degree in Land Mollusca, and it may prove to be so in Land Isopoda. With the exception of *Lucasius Normani* all the species I myself met with were collected close to Funchal. The whole of the rest of Madeira remains to be explored, and I am not aware that any carcinologist has even so much as set foot upon the islands of the Desertas and Porto Santo, which are so rich in Mollusca peculiar to them.

There are two remarkable features with respect to the Land Mollusca of the Madeiran Islands—first, that, as a rule, each form has a peculiarly restricted range in the islands, and, secondly, that out of 176 species, as recorded by Wollaston, only 25 occur in Europe.

The first of these features may be found to be paralleled hereafter among the Isopoda; but as regards the second, out of the twelve Isopoda in the preceding list, seven are European and only five are not so. However, it must be remembered that the species hitherto found have been mostly met with in the immediate neighbourhood of the seaport and from the most likely part of the island to contain introduced species. Of the five which are not European, *Armadilloniscus tuberculatus* inhabits the Azores, while *Armadillidium tigris*, *Porcellio maculipes*, *Lucasius scitus*, and *Lucasius Normani* are, as far as is yet known, peculiar to Madeira.

The Land Isopoda have been more sought for in the Azores and Canaries than in Madeira, and thus from the former group of islands twenty species are known and from the latter nineteen.

EXPLANATION OF PLATE VI. FIGS. 1–4.

Fig. 1. *Lucasius Normani*, A. Dollfus, sp. n. Head and first segment of peræon.
Fig. 2. Ditto. Head seen from below.
Fig. 3. Ditto. Fifth segment of pleon, pleotelson, and uropods.
Fig. 4. Ditto. First pleopod of the male.

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British Land Isopoda.

By Canon A. M. NORMAN, M.A., D.C.L., LL.D., F.R.S., &c.

[Plate VI. figs. 5–12.]

SINCE the publication of Bate and Westwood's 'History of British Sessile-eyed Crustacea,' 1869 *, the following papers

* Dated 1868, but the last part, which included the Land Isopoda, was not published until 1869.

have been published in which reference is made to the Land Isopoda:—

(1) Stebbing (Rev. T. R. R.).—"On a Crustacean of the Genus *Zia*," Ann. & Mag. Nat. Hist. ser. 4, vol. xi. (1873).
(2) Norman (Rev. A. M.).—"Note on the Discovery of *Ligidium agile*, Persoon, in Great Britain," Ann. & Mag. Nat. Hist. ser. 4, vol. xi. (1873).
(3) Parfitt (E.).—"The Fauna of Devon.—Part IX. Sessile-eyed Crustacea," Trans. Devon. Assoc. Sci. Liter. & Art, 1873.
(4) Robertson (David).—"Cat. Amphipoda and Isopoda of the Firth of Clyde," Trans. Nat. Hist. Soc. Glasgow, vol. ii. 1888, pp. 9–99.
(5) Scott (Thomas).—"The Land and Freshwater Crustacea of the District around Edinburgh," Proc. R. S. E. vol. xi. 1890–91, p. 75.
(6) Scharff (R. F.).—"The Irish Wood-lice," Irish Naturalist, vol. iii. 1894, pp. 4–7 & 25–29.
(7) Stebbing (Rev. T. R. R.).—"Notes on Crustacea," Ann. & Mag. Nat. Hist. ser. 6, vol. xv. 1895, p. 22.

The most important publications on the Continent, as bearing on our fauna, which have been published since Bate and Westwood, and which should be consulted by a naturalist taking up the study of the Land Isopoda, are:—

(8) Budde-Lund (G.).—'Crustacea Isopoda Terrestria.' Copenhagen, 1885.
(9) Dollfus (A.).—"Tableaux synoptiques de la Faune Française.—Le Genre *Armadillidium*," Feuille des Jeunes Naturalistes, sér. iii. 1892 (separate copy).
(10) Dollfus (A.).—"Tableau Iconographique des *Philoscia* d'Europe," Feuille des Jeunes Naturalistes, sér. iii. 1897.
(11) Sars (G. O.).—'Account of the Crustacea of Norway.' Vol. ii. Isopoda. Bergen, 1896–99.

The publications of M. A. Dollfus are very numerous; I have referred only to those which are most likely to be useful in determining species which may be found new to the British fauna. Sars, in his truly beautiful and invaluable work, fully illustrates the species of Norway, including eight species which have not yet been met with in our islands.

My object in this short paper is to draw attention to the Land Isopoda in the hope that naturalists may be induced to

look after the much neglected woodlice. Only one naturalist in our islands has ever worked at them, and that was the late Professor Kinahan, of Dublin, and in his case death prematurely cut him off when he had only for a short time investigated this group.

Dr. Scharff (6) has lately published a list of the Irish, and, indeed, of all British species known to him; but Mr. Stebbing is the only naturalist who has increased Kinahan's record. He has added three species; in the following notes I include a fourth.

I only repeat here in exceptional cases localities which are given by Kinahan or Bate and Westwood.

Ligia oceanica, Linné.

I have found this species to be generally distributed round our coasts from Shetland to Cornwall.

Ligidium hypnorum, Cuvier.

1792. *Oniscus hypnorum*, Cuvier, Journ. d'Hist. nat. ii. 19, i. tt. 28. 5 (sic fide Budde-Lund).
1793. *Oniscus agilis*, Persoon, Panzer, German Faun. ix. 24.
1833. *Ligidium Persoonii*, Brandt (F. A.), Conspec. Mon. Crust. Oniscod. p. 12, pl. iv. figs. 6, 12.
1841. *Zia agilis*, Koch, Deutschlands Crust. Heft xxxi. pls. xxii., xxiii.
1853. *Ligidum Personii*, Lereboullet, Mém. Crust. Cloport. de Strasbourg, p. 14, pl. i. fig. 1, pl. ii. figs. 20–31.
1859. *Ligidium Personi*, Kinahan, "Analysis of certain Genera of Terrest. Isop.," Nat. Hist. Review, vol. iv. p. 275, pl. xxi. fig. 14, pl. xxii. fig. 9.
1873. *Zia Saundersii*, Stebbing, Ann. & Mag. Nat. Hist. ser. 4, vol. xi. p. 286.
1873. *Ligidium agile*, Norman, ibid. p. 419.
1885. *Ligidium hypnorum*, Budde-Lund, (8) p. 254.
1898. *Ligidium hypnorum*, G. O. Sars, (11) p. 158, pl. lxxi.

Ligidium must be sought for in damp places. Rev. T. R. R. Stebbing has found it near Copthorn Common, Surrey.

Genus HAPLOPHTHALMUS, Schöbl, 1861.

Haplophthalmus danicus, Budde-Lund.

1871. *Haplophthalmus elegans*, Budde-Lund, Danmarks isopode Landskrebsdyr, Naturhist. Tidssk. 3 Række, vol. vii. p. 228 (not *H. elegans*, Schöbl).
1879. *Haplophthalmus danicus*, Budde-Lund, Prospect. generum specierumque Crust. Isop. terrest. p. 9.
1881. *Haplophthalmus Mengii*, Weber, Einige neue Isopoden Niederländschen Fauna, Tijdschr. d. Ned. Dierk. Vereen. vol. v. p. 192, pl. v. figs. 7–9 (not *Itea Mengii*, Zaddach).
1885. *Haplophthalmus danicus*, Budde-Lund, (8) p. 250.
1898. *Haplophthalmus danicus*, G. O. Sars, (11) p. 168, pl. lxxiv. fig. 2.

I have found this pretty little species in my garden here (the Red House, Berkhamsted, Herts). It occurs in company with *Trichoniscus roseus* in a cool greenhouse. The genus is allied to *Trichoniscus*. The species may be recognized by its simple eyes and the longitudinal series of tubercles which pass down the body.

Other specimens in my collection are from Denmark (*Copenhagen Mus.*). It has also been found in Norway, Holland, and France.

A near ally, *H. Mengii*, Zaddach, which is known to have a wider distribution, may be found in Great Britain. It is distinguished from its ally by having six longitudinal finely crenulated ribs passing down the body, instead of the rows of tubercles, and by the peculiarity of having two very prominent ribs on the back of the third segment of the pleon.

These species are admirably figured in Sars's beautiful work now in course of publication—a work which no carcinologist studying the Isopoda can do without.

Trichoniscus pusillus, Brandt.

Philourgria celer and *P. riparia* of Kinahan are synonyms. This little species appears to be widely distributed in our islands. My specimens are from the counties of Durham, Northumberland, and Herts, and from Connemara, Ireland. I also have it from Denmark (*Copenhagen Mus.*). Mr. T. Scott (5) finds it about Edinburgh. Exeter (*Parfitt*); Cumbrae, Scotland (*D. Robertson*).

Trichoniscus vividus, Koch.

This is *Philourgria vivida*, B. & W. Taken by Kinahan under stones and moss on hills at Portland, co. Waterford. I am not aware that it has since been found in our islands.

Trichoniscus roseus, Koch.

This is the *Philourgria rosea* of Kinahan. I have found it near Torquay and in my garden here. Mr. T. Scott records it from Tarbert on Loch Fyne, and Dr. Scharff has taken it at Dublin and received it from Ballyfinder, co. Down.

Oniscus asellus, Linné.

This is also *O. fossor*, B. & W. It is found everywhere.

Philoscia muscorum, Scopoli.

Widely distributed.

Philoscia Couchii, Kinahan.

1885. *Ligidium Couchii*, Budde-Lund, (8) p. 257.
1885. *Philoscia longicornis*, Budde-Lunde, (8) p. 221.
1897. *Philoscia Couchii*, Dollfus, (10) p. 5 (separate copy), pl. i. fig. 1 *a–c*.

This species would seem to be entirely confined to the immediate neighbourhood of the sea. Salcombe, Devon (*A. M. N.*); Meadfoot, Torquay (*Stebbing*).

Its distribution has been found to be very extensive, ranging southwards along the continent of Europe, in the Mediterranean both on northern and southern coasts, in the Black Sea at Sebastopol, in the Azores and Canaries.

Platyarthrus Hoffmannseggii, Brandt.

Salcombe, Devon; Cheddar Cliffs, Somerset; garden, Red House, Berkhamsted, Herts (*A. M. N.*); Ide, near Exeter (*Parfitt*); Torquay (*Stebbing*). Leixlip, co. Dublin, Lismore, co. Waterford, and Glengarriff, co. Cork (*Scharff*). Banff, Scotland (*Thomas Edward*, see 5).

Metoponorthus pruinosus, Brandt.

Burnmoor, co. Durham; Berkhamsted, Herts (*A. M. N.*); Exeter (*Parfitt*); Banff, Scotland (*Thos. Edward*).

Budde-Lund unites with it *Porcellio maculicornis*, Koch, *P. frontalis*, Lereb., *Porcellionides flavo-vittatus*, Miers, and with ? before them *Porcellio truncatus*, M.-Edw., *P. zealandicus*, White, *P. immaculatus*, Fitch, and *Porcellionides Jelskii*, Miers; and to this long list of synonyms is added *P. Swammerdamii*, Aud. & Sav. It is very widely distributed, extending to Palestine, Madagascar, Sicily, North Africa, and the Canary Islands.

Metoponorthus cingendus, Kinahan.

This is *Porcellio cingendus* Kinahan. Salcombe, Devon (*A. M. N.*). Mr. Stebbing has also found it in South Devon. Dr. Scharff says:—"In the mountainous districts of Dublin, Wicklow, and Cork, and also on the coast of Kerry, and on the Arran Islands it is common." Dollfus records it from France and Spain.

Porcellio scaber, Latreille.

Abundant everywhere.

Porcellio lævis, Latreille.

I am not aware that this species has been taken in our islands by anyone since Kinahan procured it in Kent and at Dublin, and writes "common everywhere in moist places, especially in stables and litter, among grass at bottom of walls"; but Scharff nevertheless speaks of it as a rare species in Ireland, only found as yet in Kinahan's habitat.

Porcellio pictus, J. F. Brandt.

Cooper's Hill, near Cheltenham (*A. M. N.*); near Exeter (*Parfitt*). Between Leith and Portobello (*T. Scott*); Ayrshire (*D. A. Boyd*); Banff (*T. Edward*). This species may at once be recognized by its mottled body and *black head*.

Porcellio dilatatus, J. F. Brandt.

Headley, Surrey, and Ventnor, Isle of Wight (*Stebbing*).

Cylisticus convexus, De Geer.

1778. *Oniscus convexus*, De Geer, Mém. Ins. vol. vii. p. 553, pl. xxxv. fig. 11.
1853. *Porcellio armadilloides*, Lereboullet, Mém. Crust. Cloport. de Strasbourg, p. 65, pl. i. fig. 18, pl. iii. figs. 88–94.
1869. *Porcellio armadilloides*, Bate and Westwood, vol. ii. p. 485.

Portland, Dorset; Berkhamsted, Herts (*A. M. N.*). Salisbury Craggs, Edinburgh; Lanarkshire; Rothesay (*T. Scott*, 5). Under stones in a disused quarry at Leixlip, co. Dublin (*Scharff*, 6). Kilwinning, Scotland (*John Smith*, fide *Robertson*, 4).

Armadillidium vulgare, Latreille.

Probably occurring throughout the British Islands, but more abundant in the south. Dr. Scharff states that it has not yet been found in the west of Ireland.

Porcellidium nasatum, Budde-Lund. (Pl. VI. figs. 5–8.)

1885. *Porcellidium nasatum*, Budde-Lund, (8) p. 51.
1892. *Porcellidium nasatum*, Dollfus, (9) p. 10, fig. 12.
1895. *Porcellidium nasatum*, Stebbing, (7) p. 23.

Body shining, densely and finely punctated, smooth centrally; sides with series of depressed, wavy, elongated tubercles, more clearly seen in adult specimens, but may be

traced in the young *. Head with depressed region of the prosepistome not large, but its central process greatly projecting in the form of a conspicuous quadrangular lobe, bent upwards distally, and extending forwards far beyond the lateral lobes. Antennæ with the joints of the flagellum subequal in length. Telson or pleotelson much longer than wide, tapering with concave sides to an obtusely rounded extremity. Uropods having the exopodite much longer than broad; endopodite slender and straight, not so long as the exopodite. Colour grey or somewhat plum-coloured, marked on each segment with three or five pale spots; more rarely uniformly grey.

Length 15 millim., breadth 7 millim.

The Rev. T. R. R. Stebbing has recorded this species from Leigh Woods, near Clifton, and Tunbridge Wells. I myself took it at Cheddar Cliffs, Somerset. Other specimens in my collection are from Bayonne (*A. M. N.* 1880), Biarritz (*A. Dollfus*), Rome (*Copenhayen Mus.*).

Armadillidium depressum, J. F. Brandt. (Pl. VI. figs. 9–12.)

1830. *Armadillidium depressum*, Brandt, in Brandt and Ratzeburg, Arznei: Thiere, vol. ii. p. 82, pl. xiii. figs. 4, 5, 6, C, D.
1833. *Armadillidium depressum*, Brandt, Conspec. Monog. Crust. Oniscod. p. 24.
1885. *Armadillidium depressum*, Budde-Lund, (8) p. 63.
1892. *Armadillidium depressum*, A. Dollfus, (9) p. 17, fig. 25.
1895. *Armadillidium depressum*, Stebbing, (7) p. 22.

Body shining, densely punctated; a series of depressed, elongated, wavy, obliquely placed tubercles are on each side of the segments at some distance from the centre; these tubercles are often obscure, and always most evident on the earlier segments; between these rows of obscure tubercles the centre of the segments is usually smooth, but below them the sides bear scattered granules. Head with the depressed region of the prosepistome extended considerably forwards in the central portion, forming a wide and conspicuous upturned lobe, the sides of which are oblique and form a sharp angle at their union with the upward sweep of the lateral processes, which do not reach nearly so far forward as the central lobe. First segment of the peræon expanded in front and extending beyond the head. Flagellum of the antennæ with the two joints of equal length. Pleotelson slightly longer than wide,

* These tubercles are similar in character to those of *A. depressum*; but whereas in that species the flattened tubercles are more pronounced than in this, especially on the first two segments, in *A. nasatum* they are less pronounced, but more equal on all the more posterior segments.

the sides scarcely incurved, the extremity truncated. Uropods having the exopodite as broad as long; the endopodite rather shorter. Colour uniformly greyish-lead or marked with spots or dashes of sulphur-yellow.

Length 17 millim., breadth 9 millim.

The Rev. T. R. R. Stebbing has found this species at Shirehampton, near Bristol, and M. A. Dollfus has specimens which were collected by Mr. Miers at Clifton.

Specimens in my collection are from Italy (*Copenhagen Mus.*) and Cap d'Antibes, Riviera (*A. Dollfus*).

The occurrence of this species in our islands is of much interest, as it was before only known in the south of Europe. *A. nasatum* is found in France; in that country it occurs abundantly in dry and sandy places in the south, but becomes scarce northwards. It has also quite recently been met with near Hamburg by Michaelsen. There is a possibility that *A. depressum* may have been introduced, since as yet it has only occurred within a few miles of the seaport of Bristol; but this cannot have been the case with *A. nasatum*, for it has been found in three distant localities, and no more unlikely place for an introduced species could be found than tufts of vegetation growing in the chinks of the great wild rocks which form the magnificent scenery of Cheddar Cliffs.

As my friend M. A. Dollfus's admirable paper on the *Armadillidia* of France is not easily accessible to English students, I have ventured to reproduce here his figures illustrative of two of the recent additions to our fauna. *Haplophthalmus danicus* will be found figured in Sars's work.

In order to show the distribution of our known species in Northern Europe, and also to indicate others which may possibly hereafter be added to our fauna, I give the following Table of Distribution (p. 78).

In the first six columns all species are recorded which are known in those countries; columns seven and eight are only given for the purpose of showing a partial extension of range of the species in the preceding columns. The Land Isopoda rapidly increase in numbers towards the south of Europe. M. A. Dollfus has recorded no less than seventy-eight species as inhabiting France and sixty-nine as found in Spain.

All the species under Norway are fully and admirably figured in Sars's beautiful work already referred to, as are also some species which he has reason to hope may yet be found in Norway—*Ligidium hypnorum*, *Trichoniscus roseus*, *Platyarthrus Hoffmannseggii*, *Porcellio lævis*, and *Armadillidium opacum*.

Distribution in Northern Europe of Crustacea Isopoda Terrestria.

	Britain.	Norway.	Sweden.	Denmark.	Holland.	Belgium.	Germany.	France.
Ligia oceanica, *Linn.*	*	*	*	*	*	*	*	*
Ligidium hypnorum, *Cuvier*	*	..	*	*	..	*	*	*
Haplophthalmus Mengii, *Zaddach*	..	*	..	..	..	..	*	*
—— danicus, *B.-Lund*	*	..	..	*	*	..	*	*
Trichoniscoides albidus, *B.-Lund*	..	*	..	*	*	..	..	*
Trichoniscus pusillus, *Brandt*	*	*	*	*	..	*	*	*
—— vividus, *Koch*	*	..	..	..	..	..	..	*
—— roseus, *Koch*	*	..	..	*	*	..	*	*
—— pygmæus, *G. O. Sars*	..	*						
Philoscia muscorum, *Scop.*	*	*	?	*	*	*	*	*
—— Couchii, *Kinahan*	*	..	..	..	..	..	..	*
Oniscus asellus, *Linné*	*	*	*	*	*	*	*	*
Platyarthrus Hoffmannseggii, *Brandt*	*	*	..	*	*	*	*	*
Metoponorthus pruinosus, *Brandt*	*	..	*	*	..	*	*	*
—— cingendus, *Kinahan*	*	..	..	..	..	..	..	*
Porcellio Ratzeburgi, *Brandt*	..	*	..	..	..	..	*	*
—— Rathkei, *Brandt*	..	*	*	*	..	*	*	*
—— dilatatus, *Brandt*	*	*	..	*	*	*	*	*
—— pictus, *Brandt*	*	*	*	*	..	*	*	*
—— scaber, *Linné*	*	*	*	*	*	*	*	*
—— lævis, *Latreille*	*	..	*	*	..	*	*	*
Cylisticus convexus, *Hartmann*	*	*	*	*	*	*	*	*
Armadillidium vulgare	*	*	*	*	*	*	*	*
—— nasatum, *B.-Lund*	*	..	..	..	..	..	*	*
—— pictum, *Brandt*	..	*	*	*	..	*	*	*
—— pulchellum, *Zencker*	..	*	*	*	..	*	*	
—— opacum, *Koch*	..	..	..	*	..	..	*	*
—— depressum, *Brandt*	*	..	..	..	..	..	..	*
—— sulcatum, *M.-Edw.*	..	..	..	..	..	*		
	20	17	13	20	11	17	22	26

EXPLANATION OF PLATE VI. FIGS. 5–12.

Fig. 5. *Armadillidium nasatum*, Budde-Lund. · Anterior margin of head.
Fig. 6. Ditto. Last segment of pleon, pleotelson, and uropods.
Fig. 7. Ditto. Uropod.
Fig. 8. Ditto. Endopodite of first pleopod of male.
Fig. 9. *Armadillidium depressum*, Brandt. Anterior margin of head.
Fig. 10. Ditto. Last segment of pleon, pleotelson, and uropods.
Fig. 11. Ditto. Uropod.
Fig. 12. Ditto. Endopodite of first pleopod of male.