

- Parmelia Fahlunensis*. Not unfrequent on Glyder, but in fruit only on Cader Idris.
- *encausta*. Glyder.
- *sinuosa*. Rather plentiful on a wall behind a small inn at the foot of Snowdon, between Carnarvon and Beddgelert.
- *incurva*. Not uncommon upon the walls about the foot of Snowdon.
- Collema fasciculare*. Below Aber waterfall near Bangor.
- *muscolola*. In fruit at Cwm Idwal (in company with Mr. Borrer) and at Machynlleth.
- Peltidea aphthosa*. In fruit on the Brecon Beacon in South Wales.
- Nephroma parilis* (*resupinata*, β *papyracea*). More abundant than *resupinata* on a wall by the road one mile from Dolgelley to Bala.
- Cetraria sepincola*. On the largest of the stones called the Giant's Pebbles by a small pool on the road from Dolgelley to Tal-y-llyn.
- Cornicularia bicolor*. Ditto.

XXXIV.—*A List of the species of Myriapoda, Order Chilognatha, contained in the Cabinets of the British Museum, with descriptions of a new Genus and thirty-two new Species.* By GEORGE NEWPORT, F.R.C.S., Pres. Ent. Soc. &c.

THIS list of *Myriapoda* completes the enumeration and description of species in the cabinets of the British Museum, and includes the whole of the vegetable feeders, as my former list did the carnivorous and mixed feeders.

The *Chilognatha* have usually been regarded by naturalists as the first order of *Myriapoda*, partly in consequence of the more compact form of the head, and its similarity to that of the larva state of hexapod insects, and partly from the general form of their bodies being similar to that of those larvæ. This was the view taken of these animals by Latreille, Leach, Gervais, and some others, and very recently even by Lucas. But a different, and, as I believe, more correct view and arrangement have been followed by Professor Brandt, who regards the *Chilopoda* as the first, and the *Chilognatha* as the second division of the class. Although I cannot entirely agree with Brandt in his division of the *Chilognatha* into masticating and sucking species, because, as Lucas has recently remarked, there are species, even among the *Chilopoda*, which have the external organs of nutrition fitted only for taking liquid food, as in the little *Scolopendrella*, I fully agree with him in the superiority of the *Chilopoda*, as an order, over the *Chilognatha*, notwithstanding the less compact structure of the head in the former. The general characters of the *Chilopoda* certainly point them out as the most perfect animals of this osculant class of Articulata. The more compact form of body, the reduced number of the organs of locomotion, the greater activity,

and the predaceous habits of the higher species, approximate the *Chilopoda* to the predaceous insects on the one hand, and to the *Arachnida* on the other. The form of the head, in the two divisions of *Myriapoda*, seems to have reference chiefly to the particular habits of the species. Thus, in those which seize their prey, and subsist, like the Arachnidans, on living objects, those segments which in reality compose the whole head are not all anchylosed together, but are in part freely moveable on each other, and thus allow of a more prehensile function to the large forcipated foot-jaws, the true mandibles of the Articulata. Some naturalists have believed that these foot-jaws in the *Chilopoda* are not the true analogues of the mandibles of insects and of *Chilognatha*; but I am satisfied by recent examinations that this is really the case. In the *Chilognatha* the foot-jaws have the form of true mandibles, because the habits of the species require that compact form of the organ which alone can be subservient, not to the seizing and piercing of living prey, but to the grinding or comminuting of more or less solid vegetable matter, on which most of the genera of *Chilognatha* entirely subsist. In all other respects, both in their internal as well as their external anatomy, and in their physiology and mode of growth, the *Chilognatha* are decidedly inferior to the *Chilopoda*. They seem to conduct us down to the Annelida from the vegetable-feeding Crustacea, as the *Chilopoda* do from the Arachnidans to the same class.

Class MYRIAPODA.

Order II. CHILOGNATHA.

Genus GLOMERIS, Latr.

1. *G. limbata*, Latr.; *G. marginata*, Leach. England.
2. — *annulata*, Brandt; *G. marginata*, Gervais. Spain.
3. — *transalpina*, Koch. Sicily.
4. — *pustulata*, Fabr. (sp.); var. *b. G. microstemma*, Brandt. Spain.

This is a very distinct species, but is subject to great variety. There are several specimens from Portugal in Mr. Hope's collection, which most decidedly mark the varieties pointed out by Brandt in his recent revision of this genus.

Genus ZEPHRONIA, Gray; SPHÆROPÆUS, Brandt.

Antennæ six-jointed, clavate, truncated.

1. *Z. ovalis*, Gray. Java. *Sphæropæus insignis*, Brandt.
2. — *glabrata*, mihi. Whitish ash-colour, polished, with the front of the head deeply and thickly punctured; the anterior margin of the first dorsal ring with a free elevated border. Length 4 lines. Philippine Islands.

3. *Z. castanea*, mihi. Dark chestnut-coloured, roughened. Length 1 inch. Philippine Islands.
4. — *innominata*, mihi.
5. — *heterostictica*, mihi. Dull fuscous, with the rings mottled irregularly with small and large blackish confluent spots; head and collar polished, brown; labial margin blackish, deeply punctured; antennæ black. Length $1\frac{1}{2}$ inch. India.

I have adopted the name *Zephronia* for this genus on the authority of the figure of *Z. ovalis* by Mr. Gray in Griffith's 'Animal Kingdom' (1832), where the characters of the genus, the form of the eyes, and the form and number of joints to the antennæ are delineated, although no letter-press description of the genus or species was then given. Professor Brandt claims to have first described this genus by the name of *Sphæropæus*, in a paper read to the Academy at St. Petersburg in August 1831; but no abstract of this paper was published till 1833. While, therefore, I would not pretend to decide on the priority of these two naturalists, I have restricted the genus *Zephronia* to those species which have but six joints to the antennæ, and regard those with seven joints to the antennæ as constituting Brandt's genus *Sphærotherium*.

GENUS POLLYXENUS, Latr., Leach.

1. *P. lagurus*, Linn., Fabr. (sp.)

GENUS FONTARIA, Gray.

1. *F. virginiensis*, Drury, (sp.)
2. — _____?
3. — *dilatata*, Brandt. (sp.)

GENUS POLYDESMUS, Latr., Leach.

1. *P. complanatus*, Linn (sp.)
2. — *canadensis*, mihi. Light chestnut-coloured, polished; with two rows of broad, scutiform, very slightly raised tubercles on the posterior half of each dorsal plate, four in the anterior and six in the posterior row; posterior border of each plate slightly waved. Albany river, Canada.

This species very closely approaches the common *P. complanatus* of this country, but differs from it in colour, and in the anterior half of each dorsal plate being smooth and entirely destitute of tubercles; and also in the number of tubercles on the posterior half.

3. *P. acutangulus*, mihi. The posterior angles of all the dorsal plates elongated and very acute; antennæ pubescent, with the head and

body jet-black, polished; lateral plates bright yellow; legs brown. Length $1\frac{1}{2}$ inch. Philippine Islands.

4. *P. elegans*, Gray.
5. — *bifasciatus*, mihi. Dark olive, with the antennæ, margins of the lateral plates, and two longitudinal dorsal lines, yellow; antennæ short, lateral plates declined. Length 2 inches. Philippine Islands.
6. — *Afer*, Gray. Body depressed, reddish brown, legs yellowish; dorsal plates with three transverse rows of minute tubercles; lateral plates elongated, tetragonal, with an elevated curved marginal line. Length $2\frac{1}{2}$ inches. Africa.
7. — *Leachii*, Gray. North America.
8. — *Grayii*, mihi. Body smooth, depressed, brown, with the lateral plates subtetragonal, rounded, with an elevated marginal line, which on each alternate plate is waved and thickened. Length $2\frac{3}{4}$ inches. Sierra Leone.
9. — *Drurii*, Gray. Brownish ash-coloured; dorsal surface of the body convex, thickly covered with minute rough granulations; lateral plates subtetragonal, with the posterior angles acute; antennæ short, joints roughened, obconic. Length $2\frac{3}{4}$ inches. Demerara.
10. — *margaritiferus*, Gervais. Philippine Islands.

Genus STRONGYLOSOMA, Brandt.

1. *S. monilis*, (sp.) Bonelli.
2. — *trilineata*, mihi. Body convex, polished, yellowish gray, with the legs, antennæ, and two broad lateral longitudinal fasciæ and one narrow median fascia, brown; legs elongated. Length $1\frac{1}{2}$ inch. New Holland.

Genus CAMBALA, Gray.

Eyes disposed in a single, semilunar, transverse row on each side of the head; antennæ short, subclavate, joints equal; lateral plates very short, spheroidal, reaching only half way along each segment, and terminating posteriorly in a simple raised line.

1. *C. lactaria*, Say, (sp.) North America.

I have derived the characters of this genus from the specimens originally sent by Say to Dr. Leach. The only characters given by Mr. Gray, in Griffith's 'Animal Kingdom,' are in the description of the plates, vol. ii. Insecta, page 784: "135. 2. *Cambala lactaria*, 142. Brown, with the front edge of the rings dotted. Allied to *Tulis* (*Iulus*?), but the head is furnished with a row of minute ocelli (ocelli) on each side." There is also an indistinct representation of these ocelli on the plate.

Genus PLATOPS? mihi.

Head short, very small, and truncated on the frontal surface; flattened or slightly excavated; eyes subtriangular; antennæ elon-

gated, slender, with the sixth joint clavated; body both anteriorly and posteriorly very much attenuated, the second, third and fourth segments narrower than the head; legs slender.

1. *P. rugulosa*, Gray (sp.). Body dark brown, with a single median light-coloured line; head, eyes, and distal portion of each joint of the antennæ, black; segments with numerous elevated longitudinal striæ terminating in acute points; segments sixty-one. Length $1\frac{1}{2}$ inch.
2. — *lineata*, Gray (sp.). Dark brown, with a single median red line, and one lateral one on each side; posterior half of each segment short, with longitudinal elevated striæ; prothorax small, with the anterior half smooth and the posterior marked with elevated striæ; segments sixty-one. Length $1\frac{5}{10}$ inch. North America.
3. — *Richii*, Gray (sp.). Yellowish brown; antennæ pubescent, with the third joint elongated; the posterior half of each segment with numerous elevated longitudinal lines; those on the side united into an arch, including the *foramina repugnatoria*; segments forty-eight. Length 2 inches. Malta.
4. — *Xanthina*, mihi. Body polished, ochraceous, slightly compressed, with the posterior half of each segment with numerous slightly raised lines; antennæ very long, with the third basilar joint longer than the second; occipital portion of the head excavated, front flattened; legs elongated; segments forty-eight. Length 5 inches. Valley of the Xanthus, Asia Minor.
5. — *Hardwickei*, Gray (sp.). Ash-coloured, polished; segments sixty-one, smooth, with the posterior half bordered with little triangular-shaped plates; head with the occipital surface excavated, and the front with a broad cup-shaped surface; eyes subtetragonal, elongated, with the internal angle acute and formed of five rows of ocelli; legs elongated; segments sixty-one. Length $1\frac{3}{4}$ inch.

This genus reminds us strongly of the characters given by Risso of his genus *Callipus*, with which indeed it agrees in the form and length of the antennæ and legs. But the characters given by Risso apply equally well to many species of the true *Iuli*, while no notice is taken by him of the very marked structure on which I propose to found this new genus, *Platops*, the short and flattened frontal surface of the head, and the narrowness of the anterior segments. I am not acquainted with Risso's species, and until then I shall propose to consider the two genera as distinct.

Genus IULUS, Linn.

1. *I. terrestris*, Linn.
2. — *pilosus*; segments fifty-six, hairy, Newp. Hampstead.
3. — *niger*, Leach.
4. — *sabulosus*, Linn.
5. — *canadensis*, mihi. Reddish flesh-coloured, with black lateral spots beneath a longitudinal series of whitish patches; segments fifty-three, smooth, polished, without striæ on the dorsal surface;

- penultimate segment with a strong, curved, acute mucro. Length $1\frac{1}{2}$ inch. Canada.
6. *I. parvipes*, mihi. Bluish black, polished; segments sixty-six?, with the posterior half of each with very faint longitudinal striæ; legs very short and slightly hairy; penultimate segment with a straight, elongated, acute point; lateral anal plates with deep hairy punctures. Length 2 to $2\frac{1}{4}$ inches. Valley of the Xanthus, Asia Minor.
 7. — *londinensis*, Leach.
 8. — *pilipes*, mihi. Colour of dried specimen white; segments sixty-three, longitudinally striated, with the posterior margin black, or reddish; legs rather short, fuscous, densely ciliated, penultimate segment with a very short, acute apex; the *foramina repugnatoria* minute, black. Length $3\frac{1}{2}$ inches. Country — ?
 9. — *punctatus*, Leach.
 10. — *pusillus*, Leach.
 11. — *Sayii*, mihi; *I. pusillus*, Say. Flesh-coloured, with a black patch at the side of each segment; eyes black, arranged in a transverse arched line, with the concavity forwards; antennæ short, clavate; segments smooth, without striæ, the penultimate one with the apex rounded. Length 6 lines. North America.

This description is taken from Say's original specimen, which, however, is not an adult. It has but forty-five segments, the three antepenultimate of which are apodal.

Genus BLANIULUS? *Gervais*.

1. *B. pulchellus*, Leach, (sp.)

Although I have placed this species in a separate genus, according to Gervais, it yet seems doubtful whether it ought not rather to form only a section of the *Iuli*, with which it agrees in every respect except in the absence of eyes.

Genus SPIROBOLUS, *Brandt*.

1. *S. olivaceus*, mihi. (Div. 1. Subdiv. 1, *a*, Brandt) Body short, thick, dark olive, with the prothorax subferruginous; legs dark chocolate; front convex, smooth, with a median labial sulcus; segments forty-four, smooth, with the posterior half of each very short and distinct, with obsolete striæ; preanal scale triangular, with the apex acute, with a deep transverse depression at its base. Length 8 inches. Oajaca, Mexico.

This species ought perhaps to form the type of a distinct subgenus, since the second, third, fourth, fifth, six and penultimate segments each bear only one pair of legs.

2. *S. pulvillatus* ♂, mihi. Front of the head flattened, with the labial margin dilated and acute at its angles, with a median sulcus; segments fifty-seven, smooth, the posterior half of each without striæ; legs strong, with the distal or third joint of the tarsi more

- than three times as long as the second, with a soft pulvus on its under surface. Length $6\frac{3}{4}$ inches. Cape Coast Castle, Africa.
3. *S. simillimus* ♀, mihi. Segments fifty-eight; front subconvex, smooth, without punctures on the labial margin, subquadrate, with the external angles rounded; sides of the prothorax triangular, very acute; legs very short, slender, with the joints of the tarsi equal, without pulvilli. Length $6\frac{1}{2}$ inches. Fantee, Africa.
 4. — *nigerrimus*, mihi. (Div. 1, *b*, Br.) Jet-black, shining, front convex, labial margin deeply notched; prothorax smooth, with the sides triangular, rounded; segments smooth. Length 2 inches.
 5. — *ruficollis*, mihi. (Div. 1, *b*, Br.) Black, with the head, prothorax, penultimate and anal segments and a broad median dorsal line bright red; legs castaneous; segments fifty-two, smooth, with the posterior half of each short and elevated. Length $1\frac{3}{4}$ inch. New Holland.
 6. — *caudatus*, mihi. (Div. 1, *b*, Br.) Dark olive, with the antennæ and legs chestnut-coloured; front mottled, with a median sulcus; segments forty-two, polished, without striæ, the penultimate segment with a long, acute, recurved mucro; body short and thick. Length 3 inches. Demerara.
 7. — *marginatus*, Say, sp. (Div. 2, *b*, Br.) North America.
 8. — *annulatus*, Say, sp. (Div. 2, *a*, Br.) North America.

GENUS SPIROSTREPTUS, Brandt.

1. *S. gracilipes*, mihi. (Div. 1. Subdiv. 2, *c*, Br.) Chestnut-coloured; legs naked, slender; front convex, with the labial border deeply emarginated, with a triangular elevated line; prothorax smooth, with the sides narrowed and rounded anteriorly, with a single elevated marginal line; segments sixty-four, with the posterior half of each substriated; anal mucro short. Length $4\frac{1}{2}$ inches. Philippine Islands.
2. — *curvicaudatus*, mihi. (Div. 1. Subdiv. 2, *b*, Br.) Colour of dried specimen fuscous; segments sixty-one, with the posterior half of each smooth, with the margin reddish; penultimate segment with a recurved, acute mucro; labial margin of the front nearly straight; prothorax with the sides tetragonal, with the anterior angle subacute, and the posterior surface with faint striæ. Length $4\frac{1}{2}$ inches.
3. — *nigrolabiatus*, mihi. (Div. 1. Subdiv. 2, *d*, Br.) Fuscous brown; front of the head ferruginous, convex, with the labial border blackened, emarginated, and armed with three distinct teeth; legs yellowish; sides of the prothorax very much narrowed, with an elevated border, but not striated or plicated; segments fifty-nine, smooth, polished, penultimate segment with a short, acute, recurved mucro. Length 4 inches. East Indies.
4. — *vittatus*, mihi. (Div. 1. Subdiv. 2, *a*, Br.) Dark brown, with the head, first seven segments of the body, and a ring around the posterior half of each segment, red; legs annulated, with the three tarsal joints pulvillated; the superior and posterior part of the head with a partially concealed elevated transverse band of closely arranged longitudinal striæ; prothorax with a broad, flattened,

falcated margin; segments eighty-one; mucro of the penultimate segment short. Length 9 inches. China?

- ✓ 5. *S. maculatus*, mihi. (Div. 1. Subdiv. 2, a, Br.) Reddish orange; head, prothorax and antennæ chestnut; segments sixty-nine, with a black spot on each side; prothorax with its anterior margin falcated, and its posterior angle produced and acute. Length 8 inches. Calcutta.
- ✓ 6. — *fasciatus*, mihi. (Div. 1. Subdiv. 2, a, Br.) Dark chocolate, with the front of the head mottled with black, and a black transverse fascia around the posterior half of each segment; anal mucro short, black; legs orange. Length 10 inches. China?
- ✓ 7. — *cinctatus*, mihi. (Div. 1. Subdiv. 2, b, Br.) Ferruginous, with a narrow black ring around the middle of each segment; legs fuscous, with a broad black annulus around the middle of each joint; segments seventy-five. Length 9 inches. India.
- ✓ 8. — *rubripes*, mihi. (Div. 1. Subdiv. 2, b, Br.) Colour of dried specimen whitish, with the posterior border of each segment black; head and legs red; segments fifty-nine, smooth, polished. Length $3\frac{1}{2}$ inches. Country —?
- ✓ 9. — *quadricollis*, mihi. (Div. 1. Subdiv. 1, b, Br.) Chestnut-coloured; front very convex, with the labial border red; segments sixty-three to sixty-five, smooth, with the posterior half of each very short, with the margin elevated; sides of the prothorax broad, quadrate, with a deep fossa on the anterior portion, and the posterior angle acute and elongated. Length 8 inches. ? Fantee, Africa.
- ✓ 10. — *punctilabium*, mihi. (Div. 1. Subdiv. 2, c, Br.) Colour of dried specimen grayish, the posterior border of each ring chestnut; front convex, smooth, with the labial portion deeply emarginated with a series of deep and closely arranged punctures; segments fifty-nine, with very faint obsolete striæ; anal mucro short. Length —? Philippine Islands.
11. — *microsticticus*, mihi. (Div. 1. Subdiv. 2, c, Br.) Orange-yellow; segments sixty-six, the posterior margin of each irregularly marked with numerous minute black points; front convex, smooth, with the labial margin dark chestnut; legs with the basilar joints compressed at their upper surface, and the inferior surface of the tarsal joints armed with stiff hairs. Length $6\frac{1}{2}$ inches. Cape Coast Castle.
- ✓ 12. — *annulatipes*, mihi. (Div. 1. Subdiv. 2, c, Br.) Fuscous, with the posterior margin of the rings dark chestnut; segments sixty-eight, the anterior portion of each segment with numerous delicate transverse plicæ, the posterior half smooth; legs with broad flesh-coloured annuli. Length $7\frac{1}{2}$ inches. Fantee, Africa.
- ✓ 13. — *obtusus*, mihi. (Div. 1. Subdiv. 2, c, Br.) Chestnut-coloured; body short, very thick and obtuse, becoming suddenly enlarged posterior to the tenth segment; legs very short and slender, compressed and hairy; segments sixty. Length 6 inches. Congo, W. Africa.
14. — *flavotaniatus*, Brandt.
15. — *antipodarum*, Newp.