

XLVII.—*A Revision of the Genera of the ARANEÆ or Spiders, with Reference to their Type Species.* By FREDK. PICKARD-CAMBRIDGE, B.A., F.Z.S.

THIS sixth instalment of the series commenced in the Ann. & Mag. Nat. Hist. ser. 7, vol. vii., for Jan. 1901, includes all the genera founded by Walckenaer in the 'Tableau des Aranéides,' published in 1805, and in addition three other genera published by Latreille in 1806 and 1809, Gen. Crust. Ins. i. p. 109, and *op. cit.* iv. p. 371, the two in the latter volume being here attributed to Walckenaer on the grounds that Latreille was merely publishing Walckenaer's "Manuscrit communiqué," according to the former's express statement.

Corrigenda.

1. *ATYPUS.*

In Ann. & Mag. Nat. Hist., Jan. 1901, p. 57, under *Atypus*, the words "which Latreille identified by mistake as belonging to this genus" should be deleted. The facts are more correctly stated thus:—Rømer fancied, though erroneously, that his species was congeneric with *Aranea aquatica*, Fabr. But there is no possible doubt that his figure represents an adult male of some species of *Atypus*. It is, however, impossible to say now which of the three European forms is represented by the name *subterranea*, or indeed by any of the earlier names, *piceus*, *difforme*, or *Sulzeri*.

The type of *Atypus* would, however, be more correctly quoted as *Atypus subterraneus* (Rømer).

2. *CERATINELLA.*

In Ann. & Mag. Nat. Hist. (7) vol. xi., Jan. 1903, p. 44, the type of *Ceratinella*, Emerton, is there given by a slip of the pen as *C. brevis* (Wider). This is, of course, incorrect, since this species was not originally included in Emerton's group, and cannot serve as the type. I therefore here select *Ceratinella Emertoni* (O. P.-Cambr.) as the type of the genus *Ceratinella*.

List of Genera referred to.

Lycosa, Latreille, p. 483.
Gnaphosa, Latreille, p. 485.
Micromata, Latreille, p. 486.
Olcera, Walckenaer, p. 488.
Missulena, Walckenaer, p. 488.
Ctenus, Walckenaer, p. 488.
Sphasus, Walckenaer, p. 488.
Eresus, Walckenaer, p. 489.
Attus, Walckenaer, p. 489.
Thomisus, Walckenaer, p. 491.
Sparassus, Walckenaer, p. 492.

Drassus, Walckenaer, p. 492.
Agelena, Walckenaer, p. 493.
Nyssus, Walckenaer, p. 493.
Epeira, Walckenaer, p. 493.
Theridion, Walckenaer, p. 494.
Pholcus, Walckenaer, p. 494.
Latrodectus, Walckenaer, p. 495.
Storena, Walckenaer, p. 495.
Uloborus, Latreille, p. 495.
Clotho, Walckenaer, p. 495.
Episinus, Walckenaer, p. 495.

I must first of all write a few lines in reply to Dr. Dahl, who challenged the types referred to certain genera immediately on the publication of my first paper dealing with the genera of Latreille, *Nouv. Dict. Hist. Nat.* xxiv. (1804), namely *Gnaphosa*, *Micromata*, and *Lycosa*. It need scarcely be said that all criticisms are welcome in an undertaking of this kind, because it is almost impossible for a single author not to pass over some important detail here and there throughout the whole literature, and one is glad to have his attention called to the fact.

Dahl was good enough to point out that I had not read Latreille's works, or if I had, that I did not understand the meaning of what was written. Without laying claim to omniscience in any matter, I may, however, explain that I am perfectly well acquainted with the various works and passages contained in them to which Dr. Dahl refers, although I must confess that I cannot venture to interpret some of the latter with the same confidence as to their meaning that he himself manifests; nor am I at all sanguine that anyone else would agree with me if I did.

In connection, for instance, with Latreille's work mentioned above, I cannot agree that it is at all clear what that author did or did not mean when he quoted Walckenaer's "*denominations*" in immediate relation to his newly-founded genera. For he himself says explicitly that he wishes to preserve his own divisions and names because he prefers them to those of Walckenaer.

But why, then, did he not *quote his own denominations*, "*Vagabondes*" Div.* &c., &c., when he founded his genera? He cannot be quoting Walckenaer's denominations for the sake of the names themselves, some of which he declares to be absurd, so that we are left to conclude that he does so with respect to the species involved. And if he does not, then are many of his generic names "*nomina nuda*," connected with diagnoses but unaccompanied by species quoted by name or definitely referred to without possibility of mistake.

If he does mean to include the species understood by Walckenaer's "*denominations*," the question is, how many and which of them? We may refer, as a guide to our decision, to Latreille's table, *Hist. Nat. Crust. Ins.* vol. iii. p. 60, where, referring to these same "*denominations*" of Walckenaer, he says: "*elles répondent à mes Vagabondes Div.*, &c., &c.*"

But what does *répondent* mean in this connection? One cannot agree that when he says, *e. g.*: "*Chasseuses répondent à mes Vagabondes, Div.*,*" that he means to *exclude* all the

species under *Chasseuses* except the two mentioned under this Div.* on page 48, of which, by the way, *one* does not occur under *Les Chasseuses* at all. Nor can one be certain that he means to include all those under *Les Chasseuses* as well.

The fact is that it is *impossible* now to determine what Latreille did or did not mean, so that, failing to understand what was intended, in my first publication dealing with these genera I simply took the printed fact as it stood, the "*denomination*" quoted, with all the species originally included in it, as the best way out of the difficulty.

I have no wish to advocate any particular theory as to what Latreille meant, but am determined, if possible, to settle the matter for the time being in the manner least likely to leave room for disputation.

The same remarks apply also to the case of the other genera, besides *Lycosa*, namely *Micromata* and *Gnaphosa*, whose particular problems are dealt with in detail below.

LYCOSA, Latreille, 1804.

Latreille, when he founded the genus, writes as follows:—"B —" (diagnosis)—"*(Lycosa)*—*Les Chasseuses* de Walck."

In his Hist. Nat. Crust. Ins. vol. iii. p. 60, published before 1804, he says of *Les Chasseuses*: "*elles répondent à mes—Vagabondes Div.**"; but when he founds the genus *Lycosa*, instead of quoting his own denomination, "*Vagabondes Div.**," he definitely connects his generic name with Walckenaer's denomination alone, without offering any modification.

The question is, what did Latreille mean? There are three alternatives open to us, depending upon the attitude we take up as to what Latreille meant when he quoted *Les Chasseuses*, and what he intended to be understood by "*répondent*."

It is a perfectly justifiable conclusion that whatever he wrote before as to the relation of *Les Chasseuses* to his own *Vagabondes*, the fact that he quotes the former in connexion with his generic name proves clearly that he has changed his mind.

When I wrote on the type of this genus in Jan. 1901, I took up the position that, whatever he said or wrote before or after the founding of the genus *Lycosa*, when he did actually bestow the name, he did so solely in connexion with *Les Chasseuses*; and I considered that by confining our attention simply to the species directly referred to we were

following the safest course for the avoidance of disputation as to the meaning of words and phrases. No one can ever dispute the fact that immediately after *Lycosa* Latreille wrote *Les Chasseuses* de Walck., and this is the only point that is not open to dispute. He did not write "*Vagabondes* Div.*," though he possibly intended to do so. We cannot, however, concern ourselves with possibilities, but simply with the species included under the denomination which he did write after his generic name. This, at least, is my own position in the matter, acting in strict accordance with the rules I am following.

(1) Including only the species under *Les Chasseuses*, we have left in, under *Lycosæ propriæ*, by Sundevall (Vet.-Akad. Handl. 1832, p. 173), when he made his new genera *Tarentula* and *Pirata*, two only of the original species, *L. sylvicola* (= *lugubris*) and *L. amentata* (= *saccata*). In 1848 C. L. Koch refers *amentata* (under the name *paludicola*) to his new genus *Leimonia*; while he refers *lugubris* (under the name *alacris*) to his new genus *Pardosa*, but on a later page of the same work. This species, being the last left in, remains as the type of the genus *Lycosa*.

(2) If we take into consideration *Les Chasseuses*, plus *Ar. tarentula* and *Ar. saccata*, Latreille's *Vagabondes* Div.*, then we shall find the type to be *Ar. tarentula*, since this author cited it himself in 1810. Simon is perfectly correct in his conclusion as to the type, and in his 'Arachnides de France' shows that he too respects a selected type, for he says: "*Les Lycosa tarentula* on été choisies par Latreille comme types du genre *Lycosa*."

Type, *L. tarentula*.

(3) If we ignore, as does Dahl, Latreille's citations in 1810, then we have to pass on to consider Sundevall's action in 1832 when he founded the genus *Tarentula*. Sundevall does not mention the species *L. tarentula* by name, and it cannot therefore be taken into consideration.

Dr. Dahl says: "According to the definition of the subgenera, this species must be included in the subgenus *Tarentula*." Now this action is absolutely inadmissible, because according to our rules we cannot admit into any generic group a species not actually included by name, or directly referred to, at the time when the genus is founded.

Lycosa tarentula cannot be the type of *Tarentula*, Sund.

We have, then, two courses open to us. If we include *Ar. tarentula* at all in the original group under *Lycosa*, then this species is its type. If we do not include this species,

nor *L. saccata*, then *L. lugubris*, Walck., is the type, since this was the last species left in by C. L. Koch in 1848.

If the question be settled by reference to the first authority who came to some definite conclusion on the point—since we are confronted by three authors, Thorell, Simon, and Dahl, each of whom furnishes us with a different type species—we must naturally take Thorell's decision made in 1869–70, when he gives *Lycosa lugubris*, Walck., as the type.

Personally I adhere to my own conclusion (Ann. & Mag. Nat. Hist. (7) vii., Jan. 1901), reached by a rigid application of rules, see Case 1 above, which leaves us with *L. lugubris* as the type.

Type, *Lycosa lugubris* (Walck.), 1802.

GNAPHOSA, Latreille, 1804, Nouv. Dict. xxiv. p. 134.

Latreille writes thus: "D. A. (diagnosis)—(*Gnaphosa*)—*Les Celluliformes* de Walck."

In the note below he adds: "la subdivision a de coupe D une partie des araignées tisserands à pattes moyennes."

In his table in Hist. Nat. Crust. Ins. vol. iii. p. 60, Latreille says: "Les Celluliformes—répondent à mes tapisnières Div. 4***."

On page 54 of the same work we find under Tapisnières Div. 4***, *Ar. relucens*, Latr., and this division is a part of the "*octonoculées tisserands à pattes moyennes*."

Now the *Celluliformes* de Walck. comprise *nocturna*, *lucifuga*, *lapidosa*, and *fulgens*, Wlk.

If we turn to Hist. Crust. Ins. vol. vii. p. 125, we find the same four species included, all of them forming a part of the "*tisserands à pattes moyennes*," with the addition of *Ar. melanogaster*, Latr., and six other species. One cannot, however, admit this later addition to the species originally included in the genus (for, see 'Index Animalium,' Davies Sherborn, MS., this volume appeared *after* Nouv. Dict. xxiv.), and vol. vii. simply proves that the four species mentioned above constitute "une partie des araignées tisserands à pattes moyennes."

There are three courses open to us:—

(1) If we take the species mentioned on page 54, Hist. Nat. Crust. Ins. vol. iii., only, under Div. 4***, then *Ar. relucens*, Latr. (= *fulgens*, Wlk.), is the type of the genus.

(2) If we include those under *Les Celluliformes* and the one quoted on page 54, we have the same four species, for *relucens* = *fulgens*, Wlk.

(3) So too, of course, if we include *Les Celluliformes* alone.

In the last two cases my original decision, published in *Ann. & Mag. Nat. Hist.* (7) vii., Jan. 1901, p. 58, holds good. Walckenaer removed all the species except *lapidosa* to his new genus *Drassus* ('Tableau,' p. 45), as he had a perfect right to do, and left in *lapidosa*, which thus remains as the type. This is a plain straightforward case of elimination. I do not see how it is possible to get away from these facts.

Dahl remarks with regard to the type of this genus ('Archiv für Naturgeschichte,' 1901, p. 55):—"We reach the same type if, with F. O. P.-Cambridge, we entirely ignore Latreille's text and hold to the names alone"—namely, *Ar. melanogaster*, Latr. On the contrary, this is precisely what we do not do.

Personally I still adhere to the position represented in Case 3 above, which gives us *lapidosa* as the type and not *melanogaster*. I would certainly much prefer to retain the old signification of *Gnaphosa*, as it has been known to me for more than thirty years; but if an author followed his personal inclinations in every case, he would not be consistent for two genera in succession.

Type, *Gnaphosa lapidosa* (Walck.).

MICROMATA, Latreille, *Nouv. Dict.* vol. xxiv. p. 135.

Here are the facts printed in connexion with the bestowal of this generic name by Latreille:—

"4. Ar. Crabes *.

A.—(Diagnosis).

A.—(Diagnosis)—(HETEROPODA) Les Cordiformes de Walck.

a. *Ar. venatoria*, Linn.

b. Espèce de la Nouv. Holl.

B.—(Diagnosis)—(MISUMENA) *Aranea citrea*, De Geer.

C.—(Diagnosis)—(MICROMATA) Les Grottiiformes de Walck.

Placez auprès de cette coupe la première sect. des Cordiformes de Walck."

Twenty species were included under "Les Cordiformes de Walck." Of these, *Ar. citrea* is referred to *Misumena* by Latreille himself three lines further down below *Heteropoda*; three others, *Ar. oblonga*, *Ar. argentata*, and *Ar. rhomboica*, being those included in "La première sect. des Cordiformes de Walck.," were apparently intended to be included with Les Grottiiformes under *Micromata*.

I must confess that, being unable to understand what Latreille's intentions were with regard to this first section of Cordiformes, I considered it better to ignore the note altogether.

If, however, we take full cognizance of it, then, whatever Latreille may or may not have intended, the quotation above

represents precisely what he did and published when he founded these genera. With regard to the *Cordiformes*, he has simply himself broken up his own genus *Heteropoda*, and withdrawn one species under *Misumena*, and three more (la première sect.) under *Micromata*. The genus *Heteropoda* was next broken up by Walckenaer, who removed all the rest of the *Cordiformes*, except *emarginata* and *venatoria*, to *Thomisus* ('Tableau,' p. 28, 1805).

In 1869-70 Thorell cited the latter of these two species as the type of *Heteropoda*. My statement of the case in connexion with *Ar. emarginata* (Ann. & Mag. Nat. Hist. (7) vii., Jan. 1901, p. 62) is not adequate; for the withdrawal by Walckenaer in 1820 is not a valid removal of *emarginata* according to our rules, though the result remains the same.

Of *Misumena*, the type is, of course, *Ar. citrea*.

The case of *Micromata* is more involved. The species falling under the genus are those included under *Les Grottiformes*—*Ar. smaragdula*, Fabr., *Ar. ornata*, Walck., *Ar. rosea*, Walck., and *Ar. accentuata*, Walck.; and if we take cognizance of the note we shall include also those of the first section of the *Cordiformes*, namely *Ar. oblonga*, Walck., *Ar. argentata*, Walck., and *Ar. rhomboica*, Walck.

Thorell himself (1869-70) took no notice of this note following *Micromata*; but it makes no difference whether we include the first section of *Cordiformes* or not, for all these species were referred by Walckenaer to his new genus *Thomisus* in 1805 ('Tableau,' p. 28).

We are thus left with the four "*Grottiformes*"—*smaragdula*, *ornata*, *rosea*, and *accentuata*—the last of these being stated by Thorell to have been "placed there by mistake."

Now in a later work (Hist. Nat. Crust. Ins. vol. vii. p. 226), Latreille has a note to this effect: "*On placera dans cette division l'araignée accentuée de Walckenaer,*" i. e. under the "*Tisserands à pattes moyennes.*"

The question is, how far are we justified in entertaining subsequent modifications of generic groups, so far as these relate to the species originally referred to them?

For myself I hold, as I held when my first paper dealing with this genus was written, that if we are to maintain any consistency of treatment, such modifications must be ignored. This course leaves us with *Ar. accentuata* as the type, since the first three species were removed by Walckenaer to his new genus *Sparassus* in 1805 ('Tableau,' p. 39); and it involves the substitution of *Micromata* for *Anyphæna*.

In this case, again, I do not see how we are to get away from the facts, and must still regard as the type of *Micro-*

mata, *M. accentuata*, Walck. The only other course open is to adopt the usual attitude and sacrifice consistency in any case where an adherence to it involves some inconvenience. It is precisely this attitude which in nearly every branch of systematic zoology has led to the present chaos in nomenclature.

As to whether Walckenaer, according to Dahl's contention, would have divided *Micromata* into three parts if he had not meant to exclude *accentuata* from it, does not influence the position at all. It was not for Walckenaer to decide what should or should not be included in Latreille's original generic group; that was already irrevocably settled. What he did do was to remove three species and leave in one, which happened to be *accentuata*.

Type, *M. accentuata*, Walck.

*Walckenaer's Genera founded in the 'Tableau
des Aranéïdes,' 1805.*

OLETERA, Walckenaer, Tableau, p. 7 (1805).

A single species only, with synonyms, is referred to this genus, namely *O. difforme* (*O. atypus*)—*Ar. picea*, Sulzer, Ab. Gesch. Ins. pl. 30. fig. 2; Røemer, pl. 30. fig. 2, *Ar. subterranea*.

If all these represent one and the same species, then this genus is congeneric with *Atypus*. Since no type has been selected, I here cite *Ar. picea*, Sulzer, as the type.

Type, *Oletera picea* (Sulzer), 1776.—Europe.

MISSULENA, Walckenaer, Tableau, p. 8 (1805).

One species only, *M. occatoria*, New Holland, was originally referred to this genus. This, sec. Simon, is the specimen on which, at that time unnamed, Latreille founded the genus *Eriodon*. *Eriodon* is thus a "nomen nudum," and its place is taken by *Missulena*.

Type, *Missulena occatoria*, Walckenaer, 1805.—New Holland.

CTENUS, Walckenaer, Tableau, p. 18 (1805).

One species only, *Ct. dubius*, is referred to this genus, and therefore serves as its type.

Type, *Ctenus dubius*, Walckenaer, 1805.—Cayenne.

SPHASUS, Walckenaer, Tableau, p. 19 (1805).

Five species were originally referred to this genus: (1) *indicus*, East Indies; (2) *heterophthalmus*, Latr.; (3)

transalpinus, Italy; (4) *fossanus*, Bosc, manuscript, L'araignées de Caroline, pl. 5. fig. i; (5) *timorianus*, Timor.

Of these, *heterophthalmus* had already been referred in 1804 to *Oxyopes* by Latreille, and, being the sole species, remains as its type. Of the rest all are probably congeneric with this and with each other; but *indicus* is here selected as the type of *Sphasus*, none having either been definitely selected or left in by elimination.

Type, *Sphasus indicus*, Walckenaer, 1805.—East Indies.

ERESUS, Walckenaer, Tableau, p. 21 (1805).

Two species were originally included in this genus:—(1) *Er. cinnaberinus*, Olivier, Encycl. Méth. t. iv. p. 221, no. 85; (2) *Er. ater*, Walck.

In 1810 Latreille selected "*Araignée rouge*," Olivier, as the type. This species is *A. cinnaberinus*, Olivier, and was also selected as the type by Thorell in 1869–70.

If, as Simon supposes (Hist. Nat. Ar. (2) i. p. 254), this species be identical with *Aranea nigra*, Petagna (Specim. Ins. ulter. Calabriae, 1787, p. 34), the latter name has priority, and the species was selected under this name as the type by Simon (*loc. cit.*).

Type, *Eresus cinnaberinus* (Olivier), 1789, = ? *Eresus niger* (Patagna), 1787.—Europe.

ATTUS, Walckenaer, Tableau, p. 22 (1805).

There are forty-seven species originally included in the genus, namely:—*morsitans*, *locusta*, *gerbillus*, *galathea*, *annulatus*, *oppositus*, *observans*, *contemplator*, *excubitor*, *fulvatus*, *trilineatus*, *elegans*, *pubescens*, *chalybeius*, *scenicus*, *psyllus*, *cupreus*, *coronatus*, *virgulatus*, *nidicolens*, *frontalis*, *lunulatus*, *bicolor*, *callidus*, *niger*, *tripunctatus*, *litteratus*, *muscorum*, *sanguinolentus*, *quinque-partitus*, *crucigerus*, *auratus*, *splendidus*, *chrysis*, *tardigradus*, *pomatius*, *undatus*, *fossilis*, *formicarius*, *parallelus*, *encarpatus*, *x-notatus*, *pulverulosus*, *nivosus*, *caudefactus*, *variegatus*, *depressus*.

Of these 47 species originally included under this genus, *A. scenicus* was removed in 1810 by Latreille as the type of *Salticus*. In 1833 Sundevall, as Thorell points out, separated the two genera and selected *A. formicarius* as the type of *Salticus*, which he had no power to do at that date. He also gives under *Attus* six sections, quoting one or more species and often selecting the type of a section; but he was not in any sense breaking up the original genus *Attus*, for he made no new genera, nor did he in any sense limit the

genus to the species he quotes, nor can any of the types selected for any of the sections be regarded as a type selected for the genus itself.

C. L. Koch, in *Deutsch. Ins.* 119.3.4, 1833, quotes under *Attus* two species, *A. terebratus*, Clerck, and *A. pubescens* (Aran. F.), and in the same place and at the same time he makes a new genus, *Heliophanus*, 119.1.2, 1833, giving *H. cupreus*, Wlk., as the sole representative. This action must, if we follow our principles of elimination, be regarded as a first breaking up of the genus and limiting it to the two species quoted.

Thorell (*Europ. Spid.* p. 218) says, referring to the 'Uebersicht,' 1837:—"We have accordingly restored the generic name *Attus* to the spiders, which Koch *first* under that name detached from Walckenaer's *Attus*." Thorell's principle is that which is followed here; but 1837 was not the *first* occasion, for, as shown above, the first detachment took place by Koch in 1833.

Koch, however, in the place quoted by Thorell (*Uebersicht*, 1837, p. 32), further limits *Attus* to *pubescens*, adding *arcuatus*, Clerck, which, however, cannot serve as the type, since it does not occur in the *first limitation* of the genus.

A. pubescens is therefore the last species left in, and remains as the type.

Thorell, curiously enough, selects as the type *A. terebratus*, Clerck, a species which is not even mentioned in what he considered to be the *first detachment* from *Attus* by Koch. He does not, however, regard any of these as synonyms, for *arcuatus*, Clerck, *terebra*, Clerck, and *pubescens*, Fabr., are all (*Rem. Syn. Europ. Spid.*) regarded as distinct species.

Samouelle, '*Entomologist's Useful Compendium*,' 1819, p. 129, places *Aranea scenica*, Linn., under *Salticus*, and *Salticus formicarius*, Latr., under *Attus*, p. 130. In this work, however, no new genus is being formed out of the species left under *Attus*, and the act cannot be regarded as one of valid limitation or definite citing of types. The case furnishes a good illustration of the advisability of requiring some criterion as to the real systematic intentions of an author, such as that furnished by the fact of the formation of a new genus. We thus rid ourselves of the inconvenience of having to consult all kinds of trivial papers and works.

The name *Atta* is used by Fabricius for Hymenoptera in 1804, but *Attus* is here retained none the less for the Araneæ.

Type, *Attus pubescens*, Fabricius, 1775.—Europe.

THOMISUS, Walckenaer, Tableau, p. 28 (1805).

Out of the thirty-three species originally included in this genus—*canceridus*, *plagusius*, *rotundatus*, *Diana*, *truncatus*, *secatus*, *citreus*, *calycinus*, *fucatus*, *Dauci*, *delicatulus*, *tricuspidatus*, *litturatus*, *cristatus*, *onustus*, *floricolens*, *violaceus*, *rugosus*, *malacostraceus*, *pigrus*, *bilineatus*, *tigrinus*, *jejunos*, *aureolus*, *cespiticolens*, *grapsus*, *pagurus*, *leucosia*, *pinnotheres*, *dispar*, *oblongus*, *argentatus*, *rhomboicus*—Latreille selected in 1810 ("Araignée citron," De Geer) *Aranea levipes*, Linn., as the type.

This, however, according to our rules, he had no power to do, since he had already referred the same species to *Misumena* as its sole representative in 1804. Neither could Walckenaer include *citreus* under *Thomisus*, since it was the type species of Latreille's earlier genus.

It is difficult to suppose that Latreille quoted *levipes*, Linn., in any other sense than as a synonym of *citreus*, for he would hardly have referred to two species, knowing them to be distinct, in a place where he is, by his own express statement, selecting "l'espèce qui leur sert de type."

A. The genus was first broken up by Walckenaer himself in the 'Faune Française,' August 7th, 1824, p. 86, where he founds his new genus *Philodromus*, including several of the original species, and limits those typical of *Thomisus* to fourteen species—*rotundatus*, *Diana*, *picatus*, *truncatus*, *onustus*, *cristatus*, *calycinus*, *Dauci*, *delicatulus*, *tricuspidatus*, *litturatus*, *floricolens*, *pigrus*, and *bilineatus*.

B. This group is again restricted by Simon in Hist. Nat. Ar. 1864, p. 432, where he withdraws *truncatus* under his new genus *Phlæoides*, and *rotundatus* under *Synema*, n. g. None of the original names are here placed under *Thomisus*.

C. It is again further limited by Simon in 1875 (Ar. Fr. ii. p. 251 &c.), where he withdraws *pigrus* and *bilineatus* under his new genus *Tmarus*, and restricts the genus to a single species of those originally included, namely, *onustus*, Walck., which thus becomes the type.

But Thorell, in 1870, had already selected *abbreviatus*, Walck., 1825, = *onustus*, Walck., 1805, as the type; and Simon, in Hist. Nat. Ar. ii. p. 1023 (1895), selected *albus*, Gmelin, 1788-93, = *onustus*, Walck. (sec. Simon), the former name having priority.

Type, *Thomisus onustus*, Walckenaer, 1805, = *T. albus* (Gmelin), 1788-93.—Europe.

SPARASSUS, Walckenaer, Tableau, p. 39 (1805).

Five species were originally included:—(1) *smaragdulus*, Fabr. & Clerck; (2) *roseus*, Clerck; (3) *ornatus*, Walck.; (4) *argelasius*, Walck.; (5) *pallens*, Fabr.

Of these, *argelasius* is a "nomen nudum," being published without a single line of description (*cf.* Simon, Ann. Soc. Ent. Fr. 1874, p. 261, "pas accompagné d'une seule ligne de description, il perd son droit de priorité"), and thus drops out of consideration for purposes of service as a type.

Of the other species, *smaragdulus* and *roseus* are identical with each other and also with *viridissimus*, De Geer.

We have left in therefore *viridissimus*, De Geer, *ornatus*, Walck., and *pallens*, Fabr.

Neither of these has been definitely cited as the type, for—

- (1) Latreille did not select any type for *Sparassus* in 1810.
- (2) Thorell, in 1870, selected *S. argelasii*, Walck., which was not available, being a "nomen nudum."
- (3) Simon, in 1897 (Hist. Nat. Ar. (2) ii. i. p. 47), selected *S. argelasius*, Latr., 1818, a species not originally referred to the genus.

It appears that one must select either *viridissimus*, *ornatus*, or *pallens*.

On the grounds that *Micromata* is already occupied with *accentuata* as type, I here select *viridissimus*, De Geer, which is congeneric with *ornata*, Walck.

If, however, we maintain the position that *viridissimus* is the type of *Micromata*, then *pallens*, Fabr., remains as the type of *Sparassus*. Having, however, no clue as to what *Ar. pallens*, Fabr. (Ins. Amer.), may be, we shall have to accept the identification by C. L. Koch for the time being as correct (Die Arach. iv. p. 82, fig. 304, 1837).

This species is, so far as one can judge, *Heteropoda venatoria*, Linn. (♂), = *regia*, Fabr., 1793; and since the name *pallens* was published in 1775, if these names indicate the same species, *pallens* will stand, and in this case *Sparassus* becomes a synonym of *Heteropoda*.

Type, *Sparassus viridissimus* (De Geer), 1778.—Europe.

DRASSUS, Walckenaer, Tableau, p. 45 (1805).

There are seven species altogether included originally by Walckenaer under this genus:—

- (1) *D. lucifugus* (Walck.), pl. v. figs. 46 & 47; Faun. Par. t. ii. p. 121. no. 69; Schæffer, Icon. pl. ci. fig. 7.

- (2) *D. nocturnus*, Linn.
- (3) *D. gnaphosus*, Walck. (esp. inédite).
- (4) *D. rubrens*, Walck. (esp. inédite).
- (5) *D. fulgens*, Walck.
- (6) *D. vasifer*, Bosc (*Ar. turcica*), Carolina, p. 5, pl. iv. fig. 2, MSS.
- (7) *D. viridissimus*, Walck. Faun. Par. t. ii. p. 212. no. 52.

So far as I can make out, there was no selection of any type nor any further breaking up of the genus between 1805 and 1810, when Latreille definitely selected *D. lucifugus*, Walck., as the type. Simon (Hist. Nat. Ar. ii. p. 383) attributes *lucifuga* to Latreille, though I am unable at present to find any grounds for this attitude; while Thorell quotes *quadripunctatus*, Linn., as the type.

Type, *Drassus lucifugus* (Walck.), 1802.—Europe.

AGELENA, Walckenaer, Tableau, p. 51 (1805).

Two species were originally referred to this genus:—

- (1) *A. labyrinthica*, Fabr.; (2) *A. nævia*, Wlk.

These species have never been referred to any other genus, though Latreille, in 1810, referred back the genera *Nyssus* and *Agelena* to *Aranea*, and selected *A. domestica*, Fabr., as the type of the latter, which, of course, at that date he had no power to do, having already limited *Aranea* to three species, which did not include *domestica*.

In 1869–70 Thorell selected the first as the type of the genus, which is also quoted by Simon (Hist. Nat. Ar. 2, ii. p. 258, 1898).

Type, *Agelena labyrinthica* (Clerck), 1757.—Europe.

NYSSUS, Walckenaer, Tableau, p. 52 (1805).

The only species referred to this genus is *N. coloripes*, Walck., New Holland or Notasia. Of this Simon says (Hist. Nat. Ar. 2, t. ii. p. 259, 1898, nota) that it is impossible to identify it with any certainty.

Type, *Nyssus coloripes*, Walckenaer, 1805.—New Holland.

EPEIRA, Walckenaer, Tableau, p. 53 (1805).

Sixty-four species were originally included in this genus. It was, so far as I can find, first limited by Audouin in Savigny's Hist. Egypte, ed. i. 1826 (sec. Sherborn, P. Z. S. 1897), when he withdrew *Epeira sericea* under his new genus *Argyope* (not *Argiope*, as in ed. 2, sec. Thorell and Simon), p. 121, to two species—*E. apoclisia* and *E. umbratica*, p. 128.

In this work the name *E. apoclisa* is definitely attached to a species which is obviously the *Ar. cornutus*, Clerck, and not *Ar. patagiatus*, Clerck (see Audouin's plate).

In 1864 Simon removed *E. umbratica* to his new genus *Nuctenea* in Hist. Nat. Ar. p. 261, leaving *E. apoclisa* in as the type. *E. apoclisa* was removed at the same time to *Neoscona*, but later, on the same page of the same work.

Type, *Epeira apoclisa*, Walckenaer, = *E. foliata* (Fourc.), 1785.—Europe.

Theridion, Walckenaer, Tableau, p. 72 (1805).

Twenty-seven species were originally referred to this genus:—*lineatum*, *redimitum*, *ovatum*, *4-punctatum*, *paykullianum*, *maculatum*, *peritum*, *variatum*, *sisiphum*, *nervosum*, *pictum*, *denticulatum*, *tinctum*, *pulchellum*, *carolinum*, *lepidum*, *venustum*, *crypticolens*, *triangulifer*, *punctatum*, *urticæ*, *alveolus*, *obscurum*, *signatum*, *benignum*, *aphane*, *incertum*.

It was not, however, limited definitely in any way between the date of its establishment and 1810, when Latreille definitely selected *Ar. redimita*, Linn., as the type. This species is the same as *Ar. redimitus*, Clerck (p. 59), a variety of *Ar. lineatus*, Clerck (p. 60) and of *Ar. ovatus*, Clerck (p. 58), whose names, however, have been dropped.

Thorell (1869–70) quotes *T. sisiphium* (Clerck) and Simon (1894, Hist. Nat. Ar. 2, i. p. 550) *T. lineatum* (Clerck) as the type.

Type, *Theridion redimitum* (Linn.), 1758.—Europe.

Pholcus, Walckenaer, Tableau, p. 80 (1805).

Three species were originally included, by name at any rate, under this genus:—(1) *Pholcus phalangioides*, Walck.; (2) *Aranea Pluchii*, Scop. Ent. Carn. 404, 1120; (3) *Ar. opilionides*, Schranck 1783.

Another species was referred to as Geoff. t. ii. p. 651. no. 17, but no name is given to it, and it is therefore not available as the type.

In 1810 Latreille selected as the type "L'araignée domestique à longues pattes," Geoff., but without giving it a name.

In 1869, Nov. 13th, Thorell selects *Pluchii*, Scop. 1763, as the type, and Simon, Hist. Nat. Ar. 2, i. p. 471 (1893), quotes *phalangioides*, Fuessl. 1775, as the type (originally spelt *phalangoides*).

Latreille's selection cannot stand. Thorell gives *Pluchii*, Scop., as questionably = *phalangioides*, Fuessl.; Simon regards them as distinct species (Ar. Fr. i. pp. 259–261, 1874), and Thorell's earlier selection stands.

Type, *Pholcus Pluchii*, Scopoli, 1763.—Europe.

LATRODECTUS, Walckenaer, Tableau, p. 81 (1805).

Two species only are referred to this genus originally:—
(1) *L. tredecim-guttatus*, Rossi, Italy; (2) *L. mactans*, Fabr.
t. ii. p. 410, America.

In 1806 Latreille mentions this same species under Walckenaer's generic name, and in 1810 definitely selected it as the type of the genus.

Thorell (Nov. 13, 1869) and Simon (Oct. 10, 1894) both quote this same species as the type.

Type, *Latrodectus tredecim-guttatus* (Rossi), 1790.—Europe.

STORENA, Walckenaer, Tableau, p. 83 (1805).

A single species was originally referred to this genus—*Storena cyanea*, Walck., Nova Gallia—which remains as type.

Type, *Storena cyanea*, Walckenaer, 1805.—New South Wales.

ULOBORUS, Latreille, Gen. Crust. Ins. i. p. 109 (1806).

A single species was originally referred to this genus—*U. Walckenaerius*, Latr.—and was also quoted by Latreille as the type in 1810.

Type, *Uloborus Walckenaerius*, Latreille, 1806.—Europe.

CLOTHO, Walckenaer; published by Latreille in Gen. Crust. Ins. iv. p. 370 (1809).

A single species was originally referred to this genus—*Clotho Durandi*, Walck. In selecting the type in 1810 Latreille speaks of the species as *manuscrit communiqué*, so that he was simply editing Walckenaer's genus and species. The name *Clotho* was, however, preoccupied by St. Fonds for the Mollusca in 1808, and has since been superseded by the name *Uroctea*, Dufour, 1820.

Type, *Clotho Durandi*, Walckenaer, 1809.—Europe.

EPISINUS, Walckenaer; published by Latreille in Gen. Crust. Ins. iv. p. 371 (1809).

A single species was originally referred to this genus—*Episinus truncatus*, Walck., Hab. in Agro Taurinensis. In quoting this as the type in 1810 Latreille adds "*MS. communiqués*," so that both genus and species must be referred to Walckenaer.

Type, *Episinus truncatus*, Walckenaer, 1809.—Europe.



Pickard-Cambridge, F. O. 1903. "XLVII.—A revision of the genera of the Araneæ or spiders, with reference to their type species." *The Annals and magazine of natural history; zoology, botany, and geology* 12, 481–495.

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