

A PRELIMINARY LIST OF THE ARACHNIDA OF INDIANA, WITH KEYS TO FAMILIES AND GENERA OF SPIDERS.

BY NATHAN BANKS.

The material for this paper was largely gathered by W. S. Blatchley and assistants. Several years ago quite a number of specimens were sent me by Dr. Mel. T. Cook, from Greencastle, Putnam County. Later Prof. W. J. Moenkhaus sent me some spiders from Huntingburg, Dubois County; and Mr. A. M. Banta has sent me several small collections from Indiana caves. To these gentlemen should be credited all material from the localities mentioned; but all other locality records are from the collections sent in by Mr. Blatchley.

In these collections I have found 148 species of spiders and 27 other Arachnida. Two of the spiders are new, and are described in this paper. The fauna as a whole is very similar to that of other parts of the northeastern United States; there are, however, minor differences. Some species very common, as *Phidippus multicolor*, are very rare in the eastern states. Phalangida also appear to be more common than in the East. Such common eastern spiders as *Misumena vatia* and *Oxyopes salticus*, appear to be absent, while *Cyclosa caudata* appears from only one locality in two specimens. Where there are peculiar forms, they are of southern origin; that is, species which have spread up the Mississippi Valley.

Under each species I have given a reference to a description, not always, however, the original description. I have also prepared a synoptic table of the families and genera of Indiana spiders. and to make it understandable I have given a brief account of the structure of a spider. Spiders, like many other animals, can only be easily identified in the mature state; therefore one should not attempt to use the tables except on forms showing an exposed vulva in the female, or a developed palpus in the male. Spiders should be collected and preserved in small vials of about 80 per cent. alcohol.

STRUCTURE OF A SPIDER.*

The body of a spider is very plainly divided into two parts; the front part is called the cephalothorax, and the hind part the abdomen. Upon the cephalothorax are several grooves radiating from a central, or dorsal groove; the part of the cephalothorax

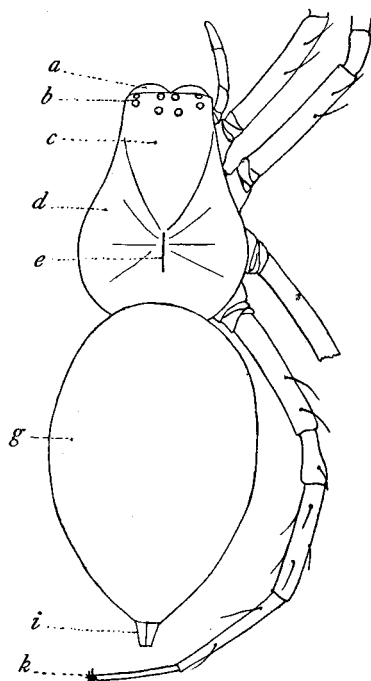


FIG. 1.—*a*, mandible; *b*, eyes; *c*, pars cephalica; *d*, cephalothorax; *e* dorsal groove; *g*, abdomen; *i*, spinnerets; *k*, claws

between the anterior pair of the furrows is called the head. Upon this head are situated the eyes, usually eight in number. They are arranged in two or more transverse rows. References to the eyes are in the form of abbreviations; A. E. for anterior eyes, P. E. for posterior eyes, S. E. for side eyes, M. E. for middle eyes, and various combinations, as P. M. E., posterior middle eyes, etc. In many spiders the eyes are of two colors, dark and light, the dark eyes for use by day, and the pale eyes for night use. The arrangement of the eyes is of the utmost value in the classification of spiders.

*The illustrations for this paper are from an article published in the American Naturalist for May, 1905, entitled "Families and Genera of Araneida." They were kindly loaned by Ginn & Co., Boston, Massachusetts.

The space between the front or lower eye-row and the front margin of the cephalothorax is called the clypeus. Attached just below the clypeus are the mandibles or falces. Each is of two parts, a large basal joint, and a smaller hook-like part, the fang. The mouth parts seen from below are a median piece, the lip or labium, and a piece each side, the maxillae. Each maxilla bears a jointed appendage, the palpus. In the female the palpus is always

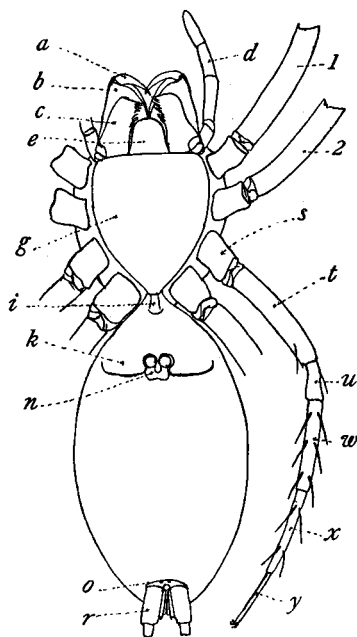


FIG. 2.—*a*, fang; *b*, mandible; *c*, maxilla; *d*, palpus; *e*, lip; *g*, sternum; *i*, pedicel; *k*, epigastric plate; *n*, epigynum; *o*, rima ventralis; *r*, spinnerets; *s*, coxa; *t*, femur; *u*, patella; *w*, tibia; *x*, metatarsus; *y*, tarsus; 1, leg I; 2, leg II.

simple, but in the male, when fully mature, the last joint is enlarged, concave within, and furnished with a number of more or less corneous and curved pieces, which serve as accessory sexual organs. The shape of these male palpi is of great use in the identification of species.

The sternum is the ventral plate of the cephalothorax; it is surrounded by eight legs. The legs are numbered from before backward as follows: I, II, III, IV. Each leg consists of seven parts or joints; each joint from the basal outward is known as follows: coxa, trochanter, femur, patella, tibia, metatarsus, tarsus. At the

tip of the tarsus are two claws; sometimes there is a third claw, or a brush of hair between and beneath the paired claws. In a few

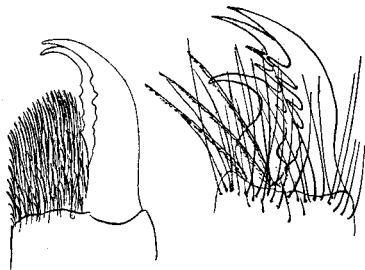


FIG. 3.—Tarsi with two claws and brush, and with three claws.

groups there are specialized branched hairs at the tip of the tarsus which act as accessory claws. Sometimes there is a brush of hairs along the lower side of the tarsus or metatarsus; this is the scopula. Sometimes there is a row of serrate bristles under tarsus IV; this is called a comb.

The abdomen is joined to the cephalothorax by a slender pedicel. At or near the tip of the abdomen are the spinning organs or spinnerets, three pairs of them. In some forms one pair is very plainly two-jointed. At the base of the lower pair there is sometimes a transverse surface provided with spinning tubes similar to those on the spinnerets; this surface is known as the cribellum. Complementary to the cribellum in function is a row of stiff hairs on each posterior metatarsus, known as the calamistrum. Near

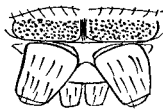


FIG. 4.—Cribellum.

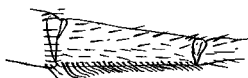
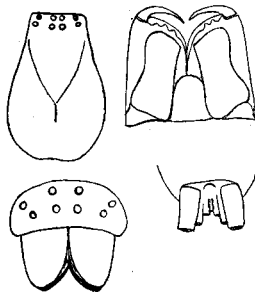


FIG. 4a.—Calamistrum.

the base of the abdominal venter is a transverse slit on each side, these are the lung-slits; in some spiders there are two pairs of these slits. Between these lung-slits is the genital opening; in the female it is conspicuous and is known as the epigyrum or vulva. A female spider is not mature till this is exposed.

TABLE FOR FAMILIES OF INDIANA SPIDERS.

1. Two pairs of lung-slits on venter of abdomen; fangs of mandibles moving vertically, parallel to each other.....*Theraphosidae*
But one pair of lung-slits on venter of abdomen; fangs of mandibles moving more horizontally toward each other.....2
2. With but six eyes; third pair of legs directed forward.....*Dysderidae*
With eight eyes; third pair of legs directed outward or backward....3
3. Eyes always in three transverse rows; eyes of second row extremely small, and middle eyes of first row very much larger than other eyes; clypeus always vertical; legs rather short; jumping spiders *Attidae*
Eyes in two or three transverse rows; when in three rows, then middle eyes of first row are not greatly larger than other eyes, and those of second row not greatly smaller than other eyes.....4
4. Each tarsus with three claws; legs never laterigrade; spiders making webs8
Each tarsus with but two claws, never spinning webs; S. E. rarely contiguous5
5. P. M. E. large, closer to the small A. S. E. than the latter are to the A. M. E., which are also small; cephalothorax not flattened. *Otenidae*
P. M. E. not as close to A. S. E. as latter are to A. M. E., or if so, then eyes of nearly equal size.....6
6. P. M. E. black; legs I and II laterigrade, that is, articulated so that the anterior surface is directed upward; second pair of legs nearly always as long as the fourth; cephalothorax broad, and rather flattened*Thomisidae*
P. M. E. pale, only A. M. E. dark colored; legs I and II not laterigrade; leg II often shorter than IV.....7
7. Lower spinnerets distinctly separated, rather long and prominent; maxillae with an obliquely transverse furrow or groove; abdomen often, depressed*Drassidae*

FIG. 5.—*Drassidae*; face, cephalothorax, mouthparts, and spinnerets.

Lower spinnerets contiguous; maxillae usually without the furrow, its outer side convex; abdomen more often cylindrical....*Clubionidae*

8. Eyes in two transverse rows, more or less curved; no scopula to tarsi;
 P. S. E. never much larger than eyes of front row.....9

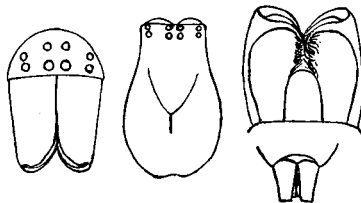


FIG. 6.—Clubionidæ; face, cephalothorax, mouthparts and spinnerets.

- Eyes usually in three rows; when in two rows, the P. S. E. are much larger than eyes of the front row, or tarsi are scopulate.....15
9. Legs I and II long, with rows of two kinds of spines, one long, the other in between, very short and curved.....*Mimetidæ*
 No such spine arrangement on the legs.....10
10. Upper spinnerets long and two-jointed; the A. M. E. only dark colored *Agalenidæ*

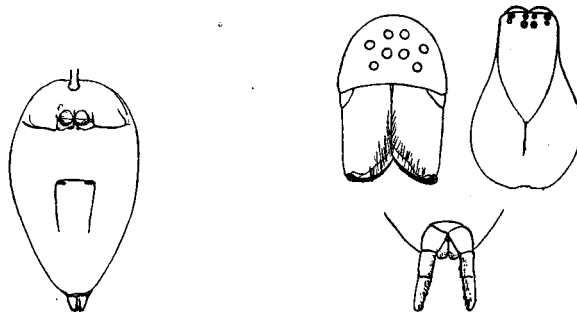


FIG. 7.—Venter of Anyphana.

FIG. 8.—Agalenidæ; face, cephalothorax and spinnerets.

- Upper spinnerets not long and two-jointed; often other eyes than A. M. E. dark colored; S. E. often contiguous.....11
11. Female with cribellum; male with mandibles concave in front and bowed on outside, or else geniculate at base; making irregular webs *Dictynidæ*
 Female without cribellum; male without such mandibles.....12
12. A comb on hind tarsus; legs usually without spines; abdomen often globose; maxillae inclined over the tip; clypeus as high as eye-area*Theridiidæ*
 No such comb on tarsus IV; maxillae usually less inclined over lip; spines often present on legs.....13
13. At base of mandibles on outer side is a striate or roughened area; clypeus higher than eye-area; no accessory claws to tarsi; male palpal organ with a tarsal hook; making irregular webs....*Linyphiidæ*
 At base of mandibles on outer side there is no such striate area, but usually a smooth boss; clypeus not as high as eye-area; accessory claws at tip of tarsi; making orb-webs.....14

14. Mandibles large, strongly divergent; abdomen and legs more or less elongate*Tetragnathidae*
Mandibles smaller, not strongly divergent.....*Epeiridae*
15. Eyes in three rows, those of anterior row very much smaller than the others; clypeus nearly vertical; no spur at tip of tibia of male palpus*Lycosidae*
Eyes in two curved rows; those of anterior row not so much smaller than the others; clypeus sloping; a spur at tip of tibia of male palpus*Pisauridae*

KEY TO GENERA OF ABOVE FAMILIES OF SPIDERS.*

Family THERAPHOSIDAE.

Sub-family.

1. Palpus arising from the outer basal side of the maxillae.....*Atypinae*
2. Palpus arising from near or at tip of maxillae.....*Theraphosinae*

Sub-family ATYPINAE.

We have but one genus, *Atypus*, which is rare in the eastern states, with apparently two species. They live in silken tubes which extend some distance above the ground.

Family DYSDERIDAE.

Genera.

1. Leg III directed backward; spines on sides of tibiae IV; tarsi scarcely one-fourth the length of metatarsi; no spines under metatarsi I.....*Dysdera*
Leg III directed forward; no spines on sides of tibiae IV; tarsi fully one-third the length of metatarsi; spines under metatarsi I.....2
2. The M. E. rather closer to A. S. E. than to P. S. E.....*Segestria*
The M. E. closer to P. S. E. than to A. S. E.....*Ariadne*

Family DRASSIDAE.

1. Mandibles with a plate or lobe on under side behind the fang; posterior eye-row plainly recurved2
Mandibles without such plate, only one or two teeth; posterior eye-row often procurved or straight, rarely a little recurved.....3
2. Posterior eye-row broader than anterior row; P. S. E. not much larger than P. M. E.; head broad.....*Gnaphosa*
Posterior eye-row not broader than anterior row; P. S. E. plainly larger than P. M. E.; head narrow.....*Callilepis*
3. No dorsal groove; posterior eye-row slightly recurved; cephalothorax reddish yellow*Sergiolus*
Dorsal groove present; posterior eye-row rarely recurved.....4

*Those genera whose names are printed in italics are represented in the list of spiders taken in Indiana, or are doubtless represented in the State but have not as yet been taken.

4. P. M. E. much nearer to P. S. E. than to each other; cephalothorax and abdomen bivittateCesonia
P. M. E. as near each other as to P. S. E., or at least, abdomen not bivittate5
5. Upper spinnerets plainly two-jointed, and longer than the lower pair; large dark-colored species; tarsi and metatarsi I, II and III heavily scopulateTeminius
Upper spinnerets not plainly two-jointed and not longer than lower pair6
6. Posterior eye-row slightly recurved; P. M. E. widely separate; no spine above on base of tibia III and IV.....7
Posterior eye-row straight or procurved.....8
7. Posterior eye-row plainly broader than anterior row; P. S. E. barely, if any, larger than P. M. E.; S. E. more than diameter apart
Pœcilochroa
Posterior eye-row barely longer than anterior row; P. S. E. much larger than P. M. E.; S. E. not diameter apart; smaller spiders
Ellica
8. Posterior eye-row plainly procurved, P. M. E. oval.....9
Posterior eye-row little if at all procurved, and usually barely longer than anterior row11
9. Posterior barely longer than anterior row; P. M. E. approximate and larger than P. S. E.....Megamyrmecion
Posterior row plainly longer than anterior row; P. M. E. rather widely separate10
10. Two spines above on tibia III and IV.....Drassodes
No spines above on tibiae III and IV.....Drassus
11. P. M. E. large, oval, contiguous or nearly so; no spine above on base of tibiae III and IV; usually with but one or two spines below tibia I.....Zelotes
P. M. E. smaller, nearly round, and plainly separate; a spine above on base of tibiae III and IV; usually four to six spines below tibia I.....Herpyllus
P. M. E. smaller, oval, well separated; no spines above on base of tibiae III and IV; ten spines below on tibia I.....Drassinella

Family CLUBIONIDÆ.

1. On the venter there is a transverse furrow, remote from spinnerets, representing the openings of the posterior spiracles.....10
No such furrow remote from spinnerets.....2
2. Two rows of large spines under tibiae I and II, more than two in each row11
Not more than 2-2 spines under tibiae I and II, or else irregularly situate, and banded legs.....3
3. Maxillæ impressed with an oblique furrow, as in the Drassidæ, no dorsal grooveMicaria
Maxillæ without furrow, convex; dorsal groove usually present.....4
4. Leg I plainly longer than IV; body and legs pale; spines on legs
Chiracanthium
Leg I not longer than IV.....5

5. No spines on legs, or only a few under tibia I.....6
 Spines fairly numerous on legs.....7
6. Posterior eye-row strongly recurved.....*Trachelas*
 Posterior eye-row straight*Meriola*
7. A. M. E. several times their diameter from clypeal margin; often a
 horny spot near base of abdomen; legs usually partly dark
Castaniera
 A. M. E. scarcely diameter from clypeal margin; no horny spot on
 abdomen, legs never dark.....8
8. Lip longer than wide; mandibles long; cephalothorax not mottled.
Clubiona
 Lip broader than long; cephalothorax mottled with brown.....9
9. Anterior eye-row procurved.....*Agroeca*
 Anterior eye-row recurved*Hilke*
10. The furrow at or before middle of venter; A. M. E. equal to A. S. E.
Anyphaena
 The furrow behind the middle of venter; A. M. E. smaller than
 A. S. E.....*Gavenna*
11. Sternum broad, prolonged between hind coxæ; posterior eye-row not
 recurved, tibia I with five or six pairs of spines below..*Phrurolithus*
 Sternum not prolonged between hind coxæ which are nearly contigu-
 ous12
12. Posterior eye-row slightly procurved; five pairs of spines under tibia I
Chemmis
 Posterior eye-row recurved13
13. But 3-3 spines under tibia I; two spines above on tibiæ III and IV
Syspira
 At least 5-5 spines under tibia I.....14
14. Eyes subequal in size; anterior eye-row recurved.....*Liocranoides*
 Eyes unequal in size; anterior eye-row not recurved.....15
15. A. M. E. smaller than A. S. E.; posterior row weakly recurved
Apostenus
 A. M. E. larger than A. S. E.; posterior eye-row strongly recurved
Zora

Family AGALENIDÆ.

1. Spinnerets arranged in one nearly straight transverse row....*Hahnia*

FIG. 9.—Spinnerets of *Hahnia*.

- Spinnerets close together, in two rows.....2
2. But six eyes, the A. M. E. lacking.....*Chorizomma*
 With eight eyes3
3. Both eye-rows very strongly procurved, so much so that the A. M. E.
 form a nearly straight line with the P. S. E.; cephalothorax nar-
 row in front.....*Agalena*
 Both eye-rows not so strongly procurved.....4

4. A. M. E. much larger than any other eyes; quadrangle of M. E. as broad below as above.....*Coras*
 A. M. E. not larger than other eyes; quadrangle usually narrower in front5
5. Upper spinnerets of but one joint and not longer than lower pair; posterior eye-row straight or even a little recurved; tarsi I plainly more than one-half as long as metatarsus; mandibles geniculate at base
Cybaeus
 Upper spinnerets of two joints and longer than lower pair.....6
6. Basal spine on outer side under tibiae I and II not reaching to next spine; larger spiders.....7
 Basal spine on outer side under tibiae I and II reaches to next spine; smaller spiders8
7. Mandibles plainly geniculate at base; legs less slender.....*Coelotes*
 Mandibles not or barely geniculate at base; legs very slender.*Tegenaria*
8. P. M. E. situated fully their diameter apart.....*Cicurina*
 P. M. E. less than diameter apart, and closer to the S. E....*Cryphoeca*

Family DICTYNIDÆ.

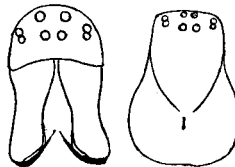


FIG. 10.—Dictynidæ; face and cephalothorax.

1. Legs without spines; cribellum usually undivided in middle by a line..3
 Legs with spines; cribellum divided by a line; clypeus very low.....2
2. Maxillæ inclined over the lip; hind legs unspined.....*Titanoecca*
 Maxillæ straight; hind legs with spines.....*Amaurobius*
3. With but six eyes; colors pale.....*Neophanes*
 With eight eyes, but A. M. E. are sometimes very small.....4
4. Cribellum divided by a line in middle.....*Dictynina*
 Cribellum undivided5
5. A. M. E. very minute.....6
 A. M. E. subequal to others.....7
6. A. M. E. higher than A. S. E.....*Dictyolathys*
 A. M. E. between A. S. E.....*Prodalia*
7. Lip one-third shorter than maxillæ*Lathys*
 Lip nearly as long as maxillæ.....*Dictyna*

Family MIMETIDÆ.

- Clypeus lower than ocular area; hind legs much shorter than front legs; lip much longer than broad.....*Mimetus*
 Clypeus as high as ocular area; hind legs not much shorter than front legs; lip but little longer than broad.....*Ero*

Family THERIDIIDAE.

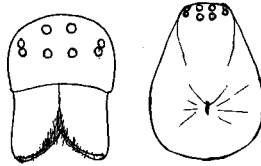


FIG. 11.—Theridiidæ; face and cephalothorax.

1. Abdomen with hard skin and furnished with several humps; small species; sternum truncate behind.....*Ulesanis*
Abdomen without humps and skin soft.....2
2. S. E. widely separate; posterior eye-row recurved.....3
S. E. contiguous or nearly so.....4
3. Leg IV as long as I; abdomen rather flat, and broad behind..*Epesinus*
Leg I longer than IV; abdomen globose.....*Lathroedectus*
4. P. M. E. fully four times their diameter apart; abdomen prolonged behind; leg IV about as long as I.....*Spintharus*
P. M. E. rarely over twice diameter apart.....5
5. A. M. E. larger than P. M. E. and much wider apart; clypeus rather high and concave; legs short, IV often as long as I; palpi thick in female6
A. M. E. rarely larger than P. M. E., if so then not wider apart.....7
6. Abdomen pointed behind and somewhat flat.....*Euryopis*
Abdomen more globose, broadly rounded behind.....*Dipoena*
7. Cephalothorax with a transverse furrow in the middle; abdomen usually produced above behind, no chitinous pieces at base; leg I longer than IV.....8
Cephalothorax with only the ordinary dorsal groove or impression; abdomen not prolonged behind.....9
8. Abdomen very long and slender, vermiform.....*Ariamnes*
Abdomen much shorter.....*Argyrodes*
9. On that part of the abdomen that overhangs the cephalothorax there is a chitinous curved piece each side, in the female not prominent, in the male much more so (they form a stridulating organ); colulus present. Leg I usually but little longer than IV; femur I rarely more than one and one-fourth length of cephalothorax; leg IV usually longer than II.....10
No such pieces on base of abdomen, colulus absent; leg I much longer than IV, which is often shorter than II; femur I usually one and one half to twice the length of cephalothorax.....17
10. Sternum broadly truncate between coxæ IV; small species..*Crustulina*
Sternum pointed behind; coxæ IV closer together.....11
11. S. E. slightly, but distinctly separate, lower eye-row nearly straight; P. M. E. not large, and rather widely separate.....*Lithyphantes*
S. E. contiguous12
12. P. M. E. plainly larger than A. M. E.; abdomen not black, with two yellow spots13
P. M. E. not larger than A. M. E.....14

13. Leg IV a little longer than I, all short.....*Pedanostethus*
 Leg IV plainly shorter than I, both long and slender.....*Teutana*
14. A. M. E. much larger than A. S. E.; leg I longer than IV...*Steatoda*
 A. M. E. not larger than A. S. E.....15
15. Leg IV plainly longer than I; sternum granulate.....*Asagena*
 Leg I a trifle longer than IV.....16
16. Femur I not one and one-fourth as long as cephalothorax; abdomen
 rather depressed*Enoplognatha*
 Femur I nearly twice as long as cephalothorax; abdomen more slender,
 and in male, constricted near middle.....*Coleosoma*
17. Sternum truncate between hind coxæ; tarsal claws with few or no
 teeth; leg I not much longer than IV.....18
 Sternum pointed behind; hind coxæ more approximate; tarsal claws
 pectinate; abdomen usually globose; leg I often much longer
 than IV23
18. No shields or sigillæ on the abdomen.....19
 Shields or sigillæ on abdomen.....21
19. Abdomen globose; cephalothorax short and high, narrow in front..20
 Abdomen elongate; cephalothorax broad in front; legs banded
Ceratinops
20. Tibia I not as long as cephalothorax; cephalothorax very broad; male
 eyes elevated*Microdipoena*
 Tibia I longer than cephalothorax, which is more elongate than pre-
 ceding *Mysmena*
21. Abdomen with shield across base.....*Idionella*
 Shield not across base22
22. Abdomen of both sexes with dorsal shield; male with horn from eye-
 region; no stiff bristles under femur I.....*Histiagonia*
 Abdomen of female without dorsal shield, only sigillæ; male without
 frontal horn; a row of stiff bristles under femur I...*Ancylorrhaxis*
23. Anterior eye-row procurved; tibia of male palpus large; female with
 abdomen swollen in middle each side.....*Theridula*
 Anterior eye-row straight or recurved; tibia of male palpus not en-
 larged; female not with swollen sides.....*Theridium*

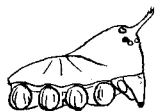
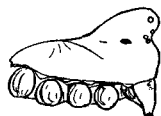
Family LINYPHIIDÆ.

1. Cave spiders; no claw at tip of palpus of female.....2
 Not cave spiders4
2. Without eyes; sternum broad.....*Antrobia*
 With eyes3
3. P. M. E. about as close to P. S. E. as to each other; A. M. E. barely
 diameter apart*Phanetta*
 P. M. E. much closer to each other than to P. S. E.; A. M. E. several
 diameters apart*Troglohyphantes*
4. No claw to tarsus of female palpus; epigynum without a finger or
 hook; male palpus with a tibial apophysis, usually but one spine
 above on tibia IV.....(Erigoninæ) 16
 A claw to palpus in female; epigynum with a finger or hook; male
 palpus without a tibial apophysis, although sometimes enlarged or
 a tooth at tip; usually two spines or erect bristles above on tibia IV
(Linyphinæ) 5

5. Legs without spines; mandibles long, and their lower anterior border provided with several long, slender teeth; A. M. E. larger than P. M. E. Tapinopa
 Legs with at least a few spines, or not agreeing with above.....6
6. Mandibles long, slender, divergent, in front with 3 pairs of long spines, abdomen depressed and rather broad; P. M. E. less than diameter apart Drapetisca
 Mandibles without the 3 pairs of spines in front.....7
7. Tibiæ without lateral spines; metatarsus I not longer than tibia I; usually small spiders8
 Tibiæ with lateral spines; metatarsus I usually as long as, often longer than, tibia I; larger spiders.....9
8. Posterior eyes closer together; S. E. on slight tubercles; legs long and very slender *Microneta*
 Posterior eyes farther apart; S. E. not on tubercles; legs less slender
Tmeticus
9. P. M. E. plainly closer to P. S. E. than to each other, and larger than S. E.; femora with few if any spines..... *Neriena*
 P. M. E. not closer to P. S. E. than to each other.....10
10. No spines on metatarsi; P. M. E. rather close together.. *Bathypantes*
 Spines on metatarsi, at least one.....11
11. P. M. E. very much larger than S. E., two or three times larger, about one diameter apart, and as far from very small S. E., which are no larger than A. M. E.; abdomen slender..... *Linyphiella*
 P. M. E. not much larger than other eyes.....12
12. P. M. E. at least two diameters apart, or else plainly farther from S. E. than from each other; quadrangle of M. E. plainly wider above than below *Linyphia*
 P. M. E. scarcely more than diameter apart, and about as close to P. S. E.13
13. All femora with some distinct spines.....14
 All femora not with distinct spines.....15
14. Tarsus I two-thirds of metatarsus I; quadrangle of M. E. rather narrower below *Bolyphantes*
 Tarsus I only one-half of metatarsus I; quadrangle of M. E. as wide below as above *Labulla*
15. Abdomen high and broad at base, tapering to a point behind
Lepthyphantes
 Abdomen elliptical or even broader beyond middle, not tapering behind *Frontinella*
16. Tarsus I only about one-half as long as metatarsus I, male with lobate head *Hypsetistes*
 Tarsus I two-thirds or more of length of the metatarsus I.....17
- 17.* Dorsum of male abdomen with a corneous shield; often present also in female18
 Dorsum of abdomen in both sexes without shield.....20
18. Sternum broadly truncate and slightly concave behind between hind coxæ; usually some corneous pieces on venter; tarsi I but little shorter than metatarsi I..... *Ceratinella*

*Beyond this the table is based on males, although females will frequently run to proper place.

- Sternum less broad and somewhat convex behind between hind coxæ;
no corneous pieces on venter.....19
19. Tarsi I plainly shorter than metatarsi; no hole in side of male head;
P. M. E. but little higher than A. M. E.....*Exechophysis*
Tarsi I about as long as metatarsi; a hole in side of head of male;
P. M. E. much higher than A. M. E.....*Lophocarenum*
20. Head of male with a horn from middle of eye-region; sternum rather
elongate; posterior eye-row strongly procurved.....*Cornicularia*
Head of male without such horn; sternum often broad, triangular...21
21. Head of male plainly lobed, or at least with a hole in side behind
S. E.22
Head of male not lobed, nor with a hole in side.....26
22. Metatarsus I of male swollen in middle.....*Caracladus*
Metatarsus I normal.....23
23. Male with two large and two small tufts of bristles in middle of eye-
region; posterior eye-row very strongly procurved.....*Panamonops*
Male without such tufts; posterior eye-row but little procurved...24
24. P. M. E. situate upon top of lobe of male.....25
Lobe of male not bearing eyes.....*Dismodicus*
25. Sternum broad, triangular.....*Diplocephalus*

Fig. 11a.—Cephalothorax of *Cornicularia*Fig. 11b.—Cephalothorax of *Diplocephalus*.

- Sternum more slender.....*Walckenæra*
26. Male having a horn from middle of clypeus.....*Delorrhapis*
Male without such horn27
27. Male palpus with enlarged femur; head of male elevated; posterior
eye-row slightly recurved; legs slender.....*Gonatium*
Male palpus with femur normal.....28
28. A projection below at tip of tibia of male palpus; sides of cephalo-
thorax often with teeth; posterior eye-row slightly recurved.. *Erigone*
No such projection to tibia of male palpus.....29
29. S. E. situate on a slight elevation, making head broad in front; ster-
num rather broadly truncate behind between hind coxæ; tibia I
shorter than the cephalothorax30
S. E. not on elevation; sternum narrowly, if at all, produced between
hind coxæ31
30. Two rows of spines under metatarsus IV; female with large lateral
spines under tibiæ and metatarsi I and II.....*Maso*
No rows of spines under metatarsus IV, nor under tibiæ and metatarsi
I and II*Ceratinopsis*
31. Tibia I longer than cephalothorax; legs very slender; sternum nar-
rowly truncate between hind coxæ; head of male elevated.. *Notionella*
Tibia I shorter than cephalothorax.....32
32. Two rows of spines under tibiæ and metatarsi I and II.....*Satilatlas*
No such spines under these joints.....33

- 33. P. M. E. closer to each other than to P. S. E.; a hump behind eye-region in male*Grammonota*
Eyes of posterior row about equidistant; no hump behind eye-region...34
- 34. Distance between eyes of posterior row not much greater than diameter of an eye35
Distance between eyes of posterior row more than two diameters of an eye *Acartauchenius*
- 35. Head of male elevated.....*Tiso*
Head of male not elevated.....*Gonglydium*

Family TETRAGNATHIDÆ.

- 1. Abdomen with a transverse ventral furrow near middle; abdomen not twice as long as broad.....*Glenognatha*
Abdomen without such furrow.....2
- 2. Abdomen not twice (or barely) as long as broad, not much longer than cephalothorax*Pachygnatha*
Abdomen three or four times as long as broad.....3
- 3. S. E. as close or closer than M. E.....*Tetragnatha*



FIG. 12.—Cephalothorax of *Tetragnatha*.

- S. E. farther apart than M. E.....4
- 4. Abdomen projecting beyond spinnerets in a tail.....*Eucta*
Abdomen not projecting beyond spinnerets in a distinct tail..*Eugnatha*

Family EPEIRIDÆ.

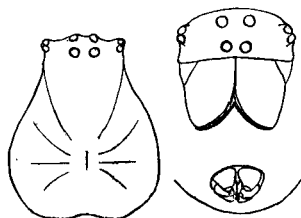


FIG. 13—Epeiridæ; cephalothorax, face and spinnerets.

- 1. Abdomen with a horny shield, or at least with sigillæ; leg IV longer than I.....2
Abdomen without shield or sigillæ; leg IV shorter than I.....4
- 2. Spinnerets enclosed at base by a horny ring; abdomen with spines...3
Spinnerets not enclosed by horny ring; abdomen without spines
Cercidia
- 3. Cephalothorax as broad as long; abdomen broader than long
Gasteracantha
Cephalothorax and abdomen longer than broad.....*Acrosoma*

4. Cephalothorax bearing spines or tubercles.....*Ordgarius*
Cephalothorax without spines or tubercles.....5
5. Posterior eye-row strongly procurved; metatarsus plus tarsus I plainly longer than tibia plus patella I; cephalothorax rather flat.....6
Posterior eye-row barely, if at all, procurved.....7
6. A. M. E. nearer to each other than to A. S. E., large species..*Argiope*
A. M. E. as near to A. S. E. as to each other; small species.....*Gea*
7. All metatarsi longer than tibia plus patella; abdomen subcylindric; maxillæ longer than broad; S. E. separate by fully two diameters; legs often with bands of erect hair.....*Nephila*
Metatarsi shorter than tibia plus patella, rarely equal in fore legs; when so, then maxillæ shorter than broad; S. E. approximate, and no bands of erect hair on legs.....8
8. Hind femora with a fringe of curved hairs at base; abdomen subcylindric; S. E. approximate; P. M. E. only about twice as far from P. S. E. as from each other; legs very slender and with only a few slender spines*Leucauge*
Hind femora without such fringe of erect, curving hairs at base.....9
9. Cephalothorax much elevated behind, sloping forward to eye-region.10
Cephalothorax not prominently elevated behind.....11
10. Legs with long spines; P. M. E. less than diameter apart; no tubercles on abdomen*Mangora*
Legs without spines, or very weak ones; P. M. E. fully two diameters apart; abdomen with tubercles.....*Carepalxis*
11. Abdomen with a median hump or cone at base, as well as lateral projections; sternum rather long; clypeus high.....*Plectana*
Abdomen without median together with lateral projections.....12
12. S. E. separated by fully diameter and on separate tubercles.....13
S. E. contiguous or nearly so, at least upon the same eminence.....14
13. P. M. E. small and close together; mandibles slender....*Dolichognatha*
P. M. E. equal to others and widely separate*Azilia*
14. P. M. E. scarcely more than one and a half diameter apart, and as close to the P. S. E. as to each other; S. E. slightly separate; all eyes subequal in size; epigynum without a finger.....15
P. M. E. much closer to each other than to P. S. E.....18
15. Tarsus IV with many serrated bristles beneath; small spider with globose abdomen*Theridiosoma*
Tarsus IV without serrate bristles beneath; larger species; abdomen not globose16
16. Maxillæ twice as long as broad; mandibles long and slender; abdomen convex above.....*Meta*
Maxillæ not twice as long as broad.....17
17. Abdomen elliptical, rather depressed, without humps at base....*Zilla*
Abdomen subcylindric, with two small humps at base.....*Hentzia*
18. No spines above on tibiæ I and II.....19
With some spines, at least one, above on tibiæ I and II.....20
19. Abdomen with spines or humps; cephalothorax broad and tumid in front*Wagneriana*
Abdomen without spines or humps.....*Metazygia*

20. Legs very slender, especially leg I, almost destitute of spines; cephalothorax very slender; posterior eye-row strongly recurved....*Acacesia*
 Legs less slender and with a number of distinct spines, or else the posterior eye-row not strongly recurved.....21
21. Abdomen pointed at base, elongate, sternum one and one half longer than broad; P. M. E. scarcely diameter apart.....*Larinia*
 Abdomen not pointed in middle at base.....22
22. Abdomen as high behind middle as at base, and elliptical in outline or broader behind middle; P. M. E. about diameter apart; epigynum without finger; small species, with short legs.....*Singa*
 Abdomen highest toward base, and usually broadest near base.....23
23. Cephalothorax with a broad transverse furrow (at least in female); abdomen usually prolonged above behind; A. S. E. never twice as far from A. M. E. as latter from each other; quadrangle of M. E. plainly wider below than above; legs more hairy.....*Cyclosa*
 Cephalothorax without such furrow; abdomen rarely prolonged above behind; legs more spiny.....*Epeira*

Family THOMISIDAE.

1. Legs III and IV not or scarcely shorter than legs I and II; tarsi I and II scopulate (at least in females); hairs of body usually branched, prone not erect.....(Philodrominae) 2
 Legs III and IV much smaller than I and II; tarsi I and II not scopulate; hairs of body, simple, scattered, and erect..(Misumeninae) 7
2. Leg II very much longer than I; posterior eye-row almost straight; cephalothorax broad*Ebo*

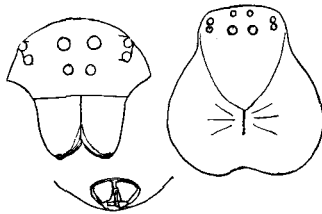


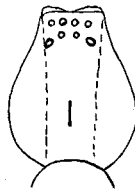
FIG. 14.—Thomisidae; face, cephalothorax and spinnerets.

- Leg II but little longer than I; posterior eye-row very plainly recurved3
3. Five pairs of spines under tibiae I and II; P. M. E. nearer to P. S. E. than to each other.....*Philodromoides*
 Less than 5-5 spines under tibiae I and II.....4
4. P. M. E. farther apart than from P. S. E.; abdomen not very slender; leg IV shorter than leg I.....*Philodromus*
 P. M. E. not nearer P. S. E. than to each other, or if barely so then leg IV is longer than I.....5

5. P. M. E. much nearer to each other than to P. S. E.; abdomen long and slender; leg IV longer than I.....*Tibellus*
P. M. E. about as near P. S. E. as to each other.....6
6. Leg IV shorter than leg I.....*Apollophanes*
Leg IV longer than leg I.....*Thanatus*
7. Legs I and II with spines only under tibiae and metatarsi, at most with one or two very minute ones elsewhere.....8
Legs I and II with distinct spines elsewhere.....10
8. Abdomen furnished behind with two prominent conical projections.....*Thomisus*
Abdomen without two projections behind.....9
9. A ridge between eye-rows.....*Runcinia*
No ridge between eye-rows.....*Misumena*
10. Abdomen high and pointed behind; clypeus sloping; tubercle at P. S. E. much larger than at A. S. E.....*Tmarus*
Abdomen broadly rounded behind; clypeus more vertical; tubercles of S. E. subequal in size.....11
11. Cephalothorax very flat; dark colored species.....*Coriarachne*
Cephalothorax moderately high.....12
12. Abdomen, cephalothorax, and legs pale whitish or yellowish, but little marked except bands on legs of males.....*Misumessus*
Abdomen, or cephalothorax and legs, dark, or heavily marked with dark.....13
13. Quadrangle of M. E. higher than broad; tibiae I and II with 2-2 spines.....*Ozyptila*
Quadrangle of M. E. not higher than broad.....14
14. Eyes of lower row equidistant; A. M. E. larger than P. M. E.; tibiae I and II with 3-3 spines.....*Synæma*
A. M. E. nearer to A. S. E. than to each other, and not larger than P. M. E.; tibiae I and II with 4-4 or 5-5 spines.....*Xysticus*

Family PISAURIDÆ.

Anterior eye-row recurved; quadrangle of M. E. broader behind than high; clypeus about as high as quadrangle of M. E.....*Dolomedes*
Anterior eye-row straight; quadrangle of M. E. not broader behind than high; clypeus not as high as quadrangle of M. E....*Pisaurina*

Fig. 15.—Cephalothorax of *Pisaurina*.

Family LYCOSIDÆ.

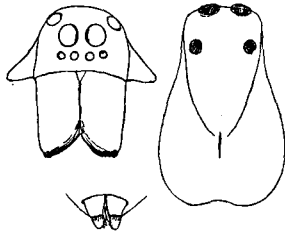


FIG. 16.—Lycosidæ; face, cephalothorax and spinnerets.

1. Tibiæ III and IV with a stout spine at base above.....4
Tibiæ III and IV without spine at base above, although there may be one near middle above.....2
2. No spines above on tibiæ III and IV; long hair above on these joints, head large and high.....*Geolycosa*
A spine near middle above on tibiæ III and IV.....3
3. Upper spinnerets not longer than lower; anterior eye-row not wider than the second.....*Trochosa*
Upper spinnerets longer than lower; anterior eye-row wider than second row; tarsi heavily scopulate.....*Sosippus*
4. Cephalic region with a wedge-shaped mark, containing a central stripe; posterior spinnerets longer than others; eyes of second row scarcely their diameter apart, small species.....*Pirata*
No such mark on cephalic region; spinnerets subequal in length.....5
5. Tibia I with 4-4 imbricated spines, the basal ones reaching beyond base of second ones beyond; very small species; eyes of second row not their diameter apart.....*Trabea*
Basal spines on tibia I not reaching beyond base of the third pair, usually but 3-3 spines below.....6
6. Cephalothorax without median mark of any kind; spines under tibia I very short, 3-3.....*Allocosa*
Cephalothorax with a paler median stripe or mark.....7
7. Head with sloping sides; eyes of second row usually scarcely diameter apart; usually 3-3 short spines under tibia I, the basal pair rarely reaching next pair; lip longer than broad; larger spiders....*Lycosa*
Head with more vertical sides; eyes of second row more than diameter apart; 3-3 long spines under tibia I, the basal pair usually reaching next pair; lip not longer than broad; smaller spiders.....*Pardosa*

Family CTENIDÆ.

- A. S. E. nearer to A. M. E. than to either P. S. E. or P. M. E...*Titiotus*
A. S. E. nearer to P. M. E. or to P. S. E. than to A. M. E.....*Ctenus*

Family ATTIDÆ.

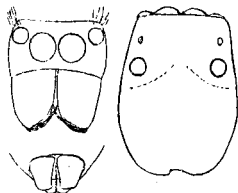


FIG. 17.—Attidæ; face, cephalothorax and spinnerets.

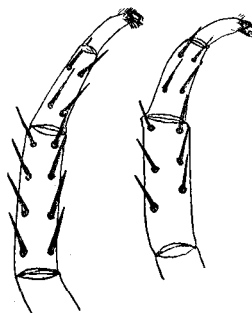


FIG. 18.—Attidæ; two types of spine-arrangement under tibia I.

1. Abdomen more or less constricted; cephalothorax usually constricted; pedicel distinctly chitinized.....2
Neither cephalothorax nor abdomen constricted; pedicel soft.....4
2. Leg I plainly thicker than the other legs; cephalothorax only slightly constricted*Peckhamia*
Leg I as slender as others.....3
3. Cephalothorax and abdomen very strongly constricted; apical joints of female palpus slender.....*Synemosyna*
Cephalothorax and abdomen but little constricted; apical joints of female palpus enlarged.....*Myrmarachne*
4. Eyes in four rows; pale green spiders.....*Lyssomanes*
Eyes in three rows.....5
5. No spines under tibia I, or at most with one or two small ones.....6
Several spines under tibia I.....9
6. Cephalic part very long, reaching almost to base of abdomen; leg I plainly thickened.....*Homalattus*
Cephalothorax slopes from before middle to base.....7
7. Leg I plainly heavier than others.....8
Leg I slender, as the others.....*Salticus*
8. No spines on hind legs.....*Admestina*
A few distinct spines on hind legs.....*Eremattus*
9. Leg III as long as or longer than IV, at least in males; usually spines on sides of patellæ III and IV; coxæ I separate by more than width of lip; 2-2 or 3-3 spines under tibia I; legs usually quite hairy.....30
Leg III plainly shorter than IV.....10
10. Ocular area occupying fully one half of the cephalothorax, the dorsal eyes situated at its greatest width, and projecting laterally. *Zygoballus*
Ocular area occupying less than one half of the cephalothorax; or if so, then the cephalothorax is not plainly broader at dorsal eyes than elsewhere11
11. Tibia I with 4-4 spines below (or less), the basal one of inner series is nearer to base than the first third of tibial length.....12
Tibia I with 3-3 spines (or less), the basal one of inner series situate one third of tibial length (or greater distance) from base; coxæ I usually widely separate.....22

12. Metatarsus IV heavily spined near base and middle, both below and on sides; cephalothorax never very low, nor very broad; usually spines on patellæ III and IV.....17
 Metatarsus IV spined only at tip, or with one or two weak spines on sides; never a basal and middle circle of spines.....13
13. Coxæ I approximate; leg I plainly thickened; sternum usually long; usually large species.....15
 Coxæ I widely separate; leg I barely thickened; sternum short; very small species, with a narrow cephalothorax.....14
14. Ocular area occupying nearly one half of cephalothorax; as wide in front as behind, dorsal eyes as large as laterals of first row; no spines below on tarsus IV.....*Neon*
 Ocular area less than one half of cephalothorax, rather wider behind; dorsal eyes smaller than laterals of first row; spines below on tarsus IV*Attidops*
15. Abdomen about four times as long as broad; tibia I with 4-4 spines below*Hycia*
 Abdomen much shorter.....16
16. Eye-region occupying two-fifths of cephalothorax; the sternum nearly as broad as long, smaller species.....*Fuentes*
 Eye-region occupies about one-third of cephalothorax; the sternum much longer than broad; larger species.....*Marpissa*
17. Tibia I with 4-4 spines below.....18
 Tibia I with less than 4-4 spines below.....19
18. Ocular area slightly narrower behind than in front; leg IV plainly longer than I.....*Mævia*
 Ocular area barely narrower behind; leg I as long as IV....*Plexippus*
19. Cephalothorax rather long; eye-area occupying scarcely one-third of length; tibia I with 3-3 spines.....20
 Cephalothorax shorter; eye-area occupying fully two-fifths of length; coxæ I widely separate.....21
20. Basal spine of femora III and IV about one-half as long as the joint; abdomen vittate*Phlegra*
 Basal spine of femora III and IV much shorter; abdomen not vittate*Sidusa*
21. Patella III as long as IV, no patellar spines.....*Euophrys*
 Patella III shorter than IV, patellar spine present.....*Attus*
22. Cephalic part about two-thirds of cephalothorax, reaching almost to abdomen; legs short, leg I thickened; hind metatarsi spined only at tip*Homalattus*
 Cephalic part far shorter.....23
23. Cephalothorax high, and rather broad; quadrangle of eyes wider behind than in front; large species, rarely under 7 mm.; leg I heavy and very hairy, often with fringes of hair, mandibles often iridescent; often a group of stout bristles near lateral eyes.....*Phidippus*
 Cephalothorax not as high and heavy, leg I not so hairy; smaller species, rarely over 6 mm.....24
24. A spine above before middle on tibia III and IV, and above on base of metatarsus IV; leg I not thickened; small species.....*Attinella*
 No spines above on tibia III and IV, nor on base of metatarsus IV. 25

25. Tibia I with 2-2 large spines, and toward base are two pairs of large bristles with enlarged bases, not obscured by other hairs; metatarsi IV spined throughout, patellæ III and IV with spines; leg I not much thickened *Thiodina*
Tibia I without such bristles, distinct from all else, 3-3 spines below .. 26
26. Legs with few hairs (except sometimes a brush under tibia I in male), tibia I about three times as long as broad, with very small spines; legs lineate with dark..... *Tutelina*
Legs more hairy, tibia I much stouter; legs not lineate (or rarely) with dark 27
27. Cephalothorax much broader than width of dorsal eye-line; tibia and metatarsus I in male elongate; abdomen quite slender; leg I not very heavy; legs III and IV not plainly banded..... *Wala*
Cephalothorax narrower at dorsal eyes; tibia and metatarsus I not elongate in male..... 28
28. Cephalothorax plainly depressed; leg I very much thickened, male with horny shield on base of abdomen..... *Metacyrba*
Cephalothorax higher; male without shield at base..... 29
29. Tibia I plainly convex below; legs less hairy; cephalothorax longer
Icius
Tibia I barely convex below; legs more hairy; cephalothorax shorter
Dendryphantes
30. Very few spines on hind legs, none above on bases of tibæ III or IV, nor on base above of metatarsus III; quadrangle of eyes wider in front; smaller, less hairy species..... *Habrocestum*
Hind legs with many spines, often one above on base of either tibia III or IV or both, and a spine above on metatarsus III; quadrangle of eyes usually wider behind..... *Pellenes*

A LIST OF THE ARACHNIDA OF INDIANA, WITH LOCALITIES.

Order ARANEIDA (Spiders).

Family THERAPHOSIDÆ.

1. *Atypus milberti* Walck., Ins. Apt., I, 249, 1837.
From Wyandotte, September 8; New Harmony (Dransfield).

Family DYSDERIDÆ.

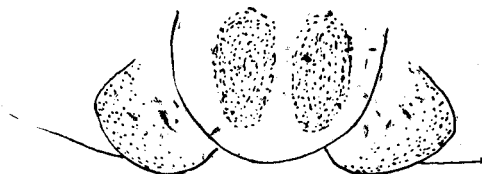
2. *Ariadne bicolor* Htz., Spid. U. S., 21, 1875.
From Wyandotte, April 17; Mitchell, April 2; Mecca, April 27.

Family DRASSIDÆ.

3. *Herpyllus ecclesiasticus* Htz., Spid. U. S., 90, 1875.
From Greencastle.
4. *Zelotes atra* Htz., Spid. U. S., 91, 1875.
From Wyandotte, April 17.
5. *Sergiolus variegatus* Htz., Spid. U. S., 94, 1875.
From Tippecanoe Lake, June 6.

Family CLUBIONIDÆ.

6. *Agroeca pratensis* Emer., Trans. Conn. Acad., VIII, 190, 1890.
One from Arlington, Marshall County.
7. *Anyphaena gracilis* Htz., Spid. U. S., 86, 1875.
From Hammond, June 16; Veedersburg, May 12 (young).
8. *Chiracanthium inclusum* Htz., Spid. U. S., 85, 1875.
From Vincennes, August 23.
9. *Clubiona abbotii* Koch. Die Arachn. fam. Drassiden, 303, 1867.
One from Arlington, Marshall County, June 10.
10. *Clubiona triloba* n. sp.
Pale yellowish, slightly infuscated with brown on the head, mandibles red-brown. Eye region broad, nearly as broad as in *C. tibialis*, P. M. E. more than two diameters apart and a trifle closer to the

FIG. 19.—*Clubiona triloba*, vulva.

equal P. S. E.; A. M. E. less than their diameter apart, and a little farther from the nearly equal A. S. E. Legs long and slender, metatarsi I and II scopulate to near base, tibia I and II with 2-2 spines below, tibiæ III and IV with 1-1 spines below, a patch of dense brown hair at tips of metatarsi III and IV below. Abdomen rather slender, pointed at tip; vulva is not as broad as in *C. tibialis*, and shows three lobes behind, the lateral projecting more behind than the median one. Length, 9 mm.

One female from Wyandotte, Indiana; also a female from near Charleston, West Virginia.

11. *Castaneira descripta* Hentz., Spid. U. S., 92, 1875.
From Greencastle.
12. *Castaneira longipalpis* Hentz., Spid., U. S., 93, 1875.
From Tippecanoe Lake, August 17; Knox County, July 2.
13. *Trachelas tranquilla* Htz., Spid. U. S., 89, 1875.
From Tippecanoe Lake, June 8; Greencastle; Huntingburgh.
14. *Phrurolithus alarius* Htz., Spid. U. S., 98, 1875.
From Grand Chain, Posey County, May 12.

Family AGALENIDÆ.

15. *Agalena naevia* Htz., Spid. U. S., 102, 1875.
From Tippecanoe Lake, August 17; Vincennes, August 31; North Vernon, September 14; New Albany, September 11; Clear Lake, August 13; Marion County, May 30 (young); Greencastle; Huntingburgh.
16. *Tegenaria cavicola* Banks, Rept. Ind. State Geol. 1896, 202.
From Salt Petre Cave, Crawford County.

17. *Tegenaria derhami* Scop., Emer., Trans. Conn. Acad., VIII, 29, 1890.
From Wyandotte, September 9; Greencastle, Twia Cave (Banta).
18. *Cicurina arcuata* Keys, Verh. zool. bot. Ges. Wien, 1887, 460.
From Bass Lake, April 9.
19. *Cicurina pallida* Keys, Verh. zool. bot., Ges. Wien, 1887, 462.
From Wyandotte, August 17; Bass Lake, April 9; Putnam County,
April 22.
20. *Cicurina brevis* Emer., Trans. Conn. Acad. VIII, 30, 1890.
From Bass Lake, April 9.
21. *Coelotes longitarsis* Emer., Trans. Conn. Acad., VIII, 28, 1890.
From New Harmony, September 3.
- 21a. *Coras medicinalis* Htz., Spid. U. S., ———, 1875.
Putnam County, April 22.

Family DICTYNIDÆ.

22. *Amaurobius bennetti* Blk., Emer., Trans. Conn. Acad., VII, 451, 1888.
From Truitt's Cave (Banta).
23. *Dictyna sublata* Htz., Spid. U. S., 147, 1875.
From Tippecanoe Lake, June 8; Grand Chain, June 3; Vawter Park,
June 1.
24. *Dictyna frondea* Emer., Trans. Conn. Acad., VII, 449, 1888.
From Hammond, May 29; Arlington, Marshall Co., June 10.

Family MIMETIDÆ.

25. *Mimetus intersector* Htz., Spid. U. S., 138, 1875.
From Shoals, May 16 (young).

Family THERIDIIDÆ.

26. *Theridium tepidariorum* Koch., Emer., Trans. Conn. Acad., VI, 13, 1882.
From Kosciusko County; Greencastle.
27. *Theridium porteri* Banks, Rept. State Geol. Ind., 1896, 203.
From Porter's and Truitt's caves; have also seen this species from
caves in Texas.
28. *Theridium kentuckyense* Keys, Die Spinn. Amer., II (1), 78, 1884.
From Mayfield's Cave and Twin Cave (Banta).
29. *Theridium spirale* Emer., Trans. Conn. Acad., VI, 10, 1882.
From Pine, Lake County, May 25.
30. *Theridium frondeum* Htz., Spid. U. S., 146, 1875.
From Vincennes, July 10; Grand Chain, June 3.
31. *Theridium differens* Emer., Trans. Conn. Acad., VI, 9, 1882.
From Arlington, June 10; Bass Lake, June 17.
32. *Theridium murarium* Emer., Trans. Conn. Acad., VI, 11, 1882.
From Hammond, June 16; Arlington, June 10.
33. *Lathrodectus mactans* Fabr., Keys, Die Spinn. Amer., II (1), 145, 1884.
From Wyandotte, September 9; Mitchell, July 15; North Vernon, Sep-
tember 14; Shoals, April 22 (young); New Albany, May 5; Green-
castle; Huntingburgh.

34. *Steatoda borealis* Htz., Spid. U. S., 145, 1875.
From Greencastle.
- 34a. *Euryopis funebris* Htz., Spid. U. S., ———, 1875.
New Harmony, June 4.
35. *Pedanoctethus riparius* Keys, Die Spinn. Amer., II (2), 126, 1886.
From Knox County, May 26.
36. *Asagena americana* Emer., Trans. Conn. Acad., VI, 23, 1882.
From Wyandotte, April 17.
37. *Argyrodes trigonum* Htz., Spid. U. S., 152, 1875.
From Twin Cave, April (Banta).

Family LINYPHIDÆ.

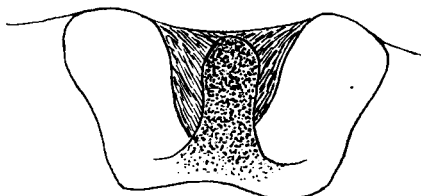
38. *Gonglydium tridentatus* Emer., Trans. Conn. Acad., VI, 53, 1882.
From Porter Cave, Owen County.
39. *Erigone infernalis* Keys, Die Spinn. Amer., II (2), 180, 1886.
From Twin Cave, November 9 (Banta).
40. *Erigone longipalpus* Emer., Trans. Conn. Acad., VI, 59, 1882.
From Arlington, June 10.
41. *Bolyphantes lineata* Keys, Die Spinn. Amer., II (2), 64, 1886.
From Greencastle.
42. *Linyphia phrygiana* Koch, Die Arachn., III, 83, 1836.
From Culver, June 29.
43. *Linyphia marginata* Koch, Emer., Trans. Conn. Acad., VI, 61, 1882.
From Arlington, June 10; Wyandotte, April 17; Greencastle.
44. *Willibaldia cavernicola* Keys, Die Spinn. Amer., II (2), 123, 1886.
From Donnelson's Cave, November 9 (Banta).
45. *Phanetta subterranea* Emer., Amer. Nat., IX, 279, 1875.
Described from Wyandotte Cave; from Truitt's Cave, April 1 (Banta).
46. *Nesticus carteri* Emer., Amer. Nat., IX, 279, 1875.
From Bradford Cave (Emerton); Marengo Cave (Banta); Porter, Coon and Marengo caves (Blatchley).

Family TETRAGNATHIDÆ.

- 46a. *Pachygnatha tristriata* Koch.
New Harmony, June 4.
47. *Tetragnatha extensa* Linn., Emer., Trans. Conn. Acad., VI, 333, 1884.
From Tippecanoe Lake, June 6, 8; Vincennes, July 10; Grand Chain, July 8; Culver, June 29; Knox County, July 2.
48. *Tetragnatha grallator* Htz., Spid. U. S., 131, 1875.
From Tippecanoe Lake, June 6, 8; Arlington, June 10; Kosciusko County; Huntingburgh.
49. *Tetragnatha laboriosa* Htz., Spid. U. S., 131, 1875.
From Tippecanoe Lake, June 6; Hammond, June 16; May 29; July 30; Arlington, June 10; Wyandotte, June 25; Mitchell, April 2 (young); Grand Chain, June 3; Attica, June 20; Vawter Park, June 1; Pine Lake County, May 25; Wilders, July 25; Greencastle.
50. *Eugnatha straminea* Emer., Trans. Conn. Acad., VI, 335, 1884.
From Tippecanoe Lake, June 6.

Family EPEIRIDÆ.

51. *Theridiosoma gemmosum* Cambr., Emer., Trans. Conn. Acad., VI, 320, 1884.
From Mayfield's Cave (Banta).
52. *Leucauge hortorum* Htz., Spid. U. S., 118, 1875.
From Arlington, June 10; Grand Chain, May 12; Greencastle.
53. *Meta menardi* Latr., Emer., Trans. Conn. Acad., VI, 328, 1884.
From Mitchell, July 15; Greencastle; Strong's Cave (Banta); Twin Cave, April 2 (Banta); Mayfield's, Strong's, Donnehue's, Donnelson's, Clifty, Wyandotte and Salt Petre caves (Blatchley).
54. *Cyclosa caudata* Htz., Spid. U. S., 126, 1875.
From Greencastle.
55. *Argiope transversa* Emer., Trans. Conn. Acad., VI, 330, 1884.
From Greencastle.
56. *Argiope aurantia* Lucas, Emer., Trans. Conn. Acad., VI, 329, 1884.
From Lake Maxinkuckee, August 7; Greencastle.
57. *Mangora placida* Htz., Spid. U. S., 115, 1875.
From Wyandotte, June 26; New Harmony, May 6.
58. *Acacesia foliata* Htz., Spid. U. S., 116, 1875.
From Grand Chain, July 8 (young); Greencastle.
59. *Singa hentzi* n. sp.

FIG. 20.—*Singa hentzi*, vulva.

Cephalothorax blackish brown, with a pale median stripe, narrowed behind, and in its middle an elongate white spot; median eyes surrounded by black; mandibles pale, with a blackish spot at base; sternum and mouth parts black, but the tips of the labium and maxillae whitish. Coxæ pale, legs pale, a narrow black band on extreme base of femora, a broad, black band almost reaching to tip of femora, a black band covering the apex of patellæ and base of tibiæ, a broad, black band on middle of tibiæ, basal and median bands on the metatarsi, and a basal band on tarsi; palpi banded with black. Abdomen with a large black mark above, with irregular edges, and margined with silvery white; venter with a broad, black field in the middle, a whitish stripe each side and lower sides with a black stripe. Both M. E. closer to each other than to S. E., quadrangle of M. E. as broad behind as long, and plainly narrower in front. Length, 4.2 mm.

One female from Cannelton, Indiana, May 31. Differs from *S. modesta* Bks., by black sternum and more banded legs; from *S. singaeformis* Sch., by colors of cephalothorax and abdomen above.

60. *Singa nigripes* Keys, Verh. zool. bot. Ges. Wien, 1883, 655.
From Grand Chain, May 12.
61. *Singa variabilis* Emer., Trans. Conn. Acad., VI, 322, 1884.
From Tippecanoe Lake.
62. *Epeira angulata* Clerck., Emer., Trans. Conn. Acad., VI, 299, 1884.
From Greencastle.
63. *Epeira displicata* Htz., Spid. U. S., 117, 1875.
From Tippecanoe Lake, June 6; Grand Chain, June 3; Attica, June 20;
Shoals, May 16; Vawter Park, June 1.
64. *Epeira domiciliorum* Htz., Spid. U. S., 108, 1875.
From Grand Chain, July 8; Greencastle; Huntingburgh.
65. *Epeira globosa* Keys, Verh. zool.-bot. Ges. Wien, 1865, 820.
From Greencastle.
66. *Epeira infumata* Htz., Spid. U. S., 122, 1875.
From Grand Chain, June 3 (young).
67. *Epeira insularis* Htz., Spid. U. S., 109, 1875.
From Vincennes, August 23; Mitchell, July 13; Montezuma, August 12;
Marion County, May 30; Greencastle.
68. *Epeira labyrinthica* Htz., Spid. U. S., 111, 1875.
From Greencastle.
69. *Epeira prompta* Htz., Spid. U. S., 115, 1875.
From Tippecanoe Lake, June 6; Hammond, June 16; Vincennes, July
10, August 23; Arlington, June 10; Wyandotte, June 25; Bass Lake,
June 22, 20; Grand Chain, July 8, June 3 (young); Attica, June 20;
Vawter Park, June 1; Pine, June 29; Culver, June 29; Knox County,
July 2.
70. *Epeira sclopetaria* Clerck., Emer., Trans. Conn. Acad., VI, 303, 1884.
From Greencastle.
71. *Epeira striata* Htz., Spid. U. S., 112, 1875.
From Tippecanoe Lake, August 17; Vincennes, November 26; Arling-
ton, June 10; Grand Chain, July 8; Vawter Park, June 1; Culver,
June 29; Knox County, July 2; Jeffersonville, June 23; Greencastle.
72. *Epeira thaddeus* Htz., Spid. U. S., 113, 1875.
From Greencastle.
73. *Epeira trifolium* Htz., Spid. U. S., 110, 1875.
From Culver, August 22; Greencastle.
74. *Epeira trivittata* Keys, Sitz. Ibis, Dresden, 1864, 95.
From Tippecanoe Lake, June 6, 8; Hammond, July 30, May 29; Vin-
cennes, August 23; Arlington, June 10; Wyandotte, June 26; Bass
Lake, June 17, 22, 20; Culver, June 29, August 22; Wilders, July 25;
Greencastle.
75. *Epeira verrucosa* Htz., Spid. U. S., 121, 1875.
From Vincennes, July 10; Wyandotte, September 9; Montezuma, Au-
gust 12; Knox County, July 2 (young); Greencastle.
76. *Plectana stellata* Htz., Spid. U. S., 125, 1875.
From Vincennes, July 10; Bass Lake, June 20; Grand Chain, July 8;
North Vernon, September 14; Greencastle.
77. *Ordgarius cornigerus* Htz., Spid. U. S., 123, 1875.
From Greencastle.
78. *Acrosoma rugosa* Htz., Spid. U. S., 124, 1875.
From Wyandotte, September 9; Greencastle.

79. *Acrosoma mitrata* Htz., Spid. U. S., 125, 1875.
From Greencastle.
80. *Acrosoma spinea* Htz., Spid. U. S., 123, 1875.
From Vincennes, July 10; Wyandotte, July 25, June 26; Mitchell,
July 15; Greencastle.

Family THOMISIDÆ.

81. *Tibellus duttoni* Htz., Spid. U. S., 81, 1875.
From Pine, Lake County, October 29 (young); Kosciusko County.
82. *Tibellus oblongus* Walck., Keys, Die Spinn. Amer., I, 196, 1880.
From Wilders, July 25; Greencastle.
83. *Philodromus vulgaris* Htz., Spid. U. S., 76, 1875.
From Tippecanoe Lake; Bass Lake, June 17, April 9 (young); Grand
Chain, July 8, June 3; Pine, October 29 (young); Knox County,
July 2; Greencastle.
84. *Philodromus ornatus* Banks, Proc. Acad. Nat. Sci. Phil., 1892, 61.
From Arlington, June 10; Wilders, July 25.
85. *Philodromus aurcolus* Clerck. Keys., Die Spinn. Amer., I, 217, 1880.
From Hammond, June 16; Vincennes, August 23; Knox County,
July 2.
86. *Philodromus rufus* Walck., Keys., Die Spinn. Amer., I, 217, 1880.
From Tippecanoe Lake, June 6; Arlington, June 10.
87. *Philodromus placidus* Banks, Proc. Acad. Nat. Sci. Phil., 1892, 62.
From Vincennes, July 10; Arlington, June 10; Grand Chain, July 8,
May 12; Pine, June 29; Culver, June 29.
88. *Misumessus oblongus* Keys., Die Spinn. Amer., I, 79, 1880.
From Veedersburg, May 12 (young); Vawter Park, June 1; Green-
castle.
89. *Misumessus asperatus* Htz., Spid. U. S., 79, 1875.
From Wyandotte, April 17, June 23, September 20; New Harmony,
May 6; Pine, May 25; Huntingburgh.
90. *Misumena americana* Keys., Die Spinn. Amer., I, 85, 1880.
From Bass Lake, June 17; Grand Chain, June 3; Attica, June 20;
Culver, June 29; Knox County, July 2; Greencastle.
91. *Runcinia aleatoria* Htz., Spid. U. S., 77, 1875.
From Lake James, May 8; Hammond, July 30; Grand Chain, Septem-
ber 5; Greencastle.
92. *Coriarachne versicolor* Keys., Die Spinn. Amer., I, 53, 1880.
From Wyandotte, April 17; Grand Chain, April 19; Mecca, April 27;
New Albany, May 4; Greencastle.
93. *Ozyptila conspurcata* Thor., Bull. Geol. Surv. Terr., III, No. 2, 496,
1877.
From Cypress Swamp, September 25; Pine, October 29; Knox County,
May 26.
94. *Synæma parvula* Htz., Spid. U. S., 80, 1875.
From Arlington, June 10; Grand Chain, May 12; Veedersburg, May 12;
Culver, June 29.
95. *Xysticus triguttatus* Keys., Die Spinn. Amer., I, 12, 1880.
From Hammond, July 30; Wilders, July 25.

96. *Xysticus transversus* Bks., Proc. Acad. Nat. Sci. Phil., 1892, 54.
From New Harmony, February 23 (not quite adult).
97. *Xysticus stomachosus* Keys., Die Spinn. Amer., I, 28, 1880.
From Vincennes, August 23; Arlington, June 10 (young); Wyandotte,
July 25 (young); Bass Lake, June 22 (young); Culver, June 29;
Greencastle.
98. *Xysticus gulosus* Keys., Die Spinn. Amer., I, 43, 1880.
From Wilders, July 25; Greencastle.
99. *Xysticus nervosus* Banks, Proc. Acad. Sci. Phil., 1892, 55.
From Tippecanoe Lake, June 6; Culver, June 29; Greencastle.
100. *Xysticus quadrilineatus* Keys., Die Spinn. Amer., I, 42, 1880.
From Kosciusko County.

Family PISAURIDÆ.

101. *Pisaurina undata* Htz., Spid. U. S., 42, 1875.
From Arlington, June 10; Bass Lake, June 20; Shoals, July 13
(young); Culver, June 29; Greencastle; Huntingburgh.
102. *Pisaurina subinflata* Htz., Spid. U. S., 161, 1875.
From New Harmony, September 3; North Vernon, April 14 (young).
103. *Dolomedes urinator* Htz., Spid. U. S., 40, 1875.
From Mitchell, April 2 (young); Donnelson's Cave.
104. *Dolomedes tenebrosus* Htz., Spid. U. S., 38, 1875.
From Wyandotte, July 25 (young); Bass Lake, October 10 (half
grown), April 9; Mitchell, July 15; Medora, September 24; Cy-
press Swamp, September 25 (young); Knox County, May 26
(young); Lake Maxinkuckee, August 7 (young); Gibson County,
September 1; Wilders, July 25; Greencastle.
105. *Dolomedes sexpunctatus* Htz., Spid. U. S., 41, 1875.
From Tippecanoe Lake, June 6; Greencastle.

Family LYCOSIDÆ.

106. *Lycosa avara* Keys., Vehr. zool.-bot. Ges. Wien, 1876, 661.
From North Vernon, May 7.
107. *Lycosa carolinensis* Walck., Emer. Trans. Conn. Acad., VI, 486, 1885.
From Wyandotte, July 25; North Vernon, September 14; Laporte
County, August 26.
108. *Lycosa erratica* Htz., Spid. U. S., 29, 1875.
From Hammond, May 7 (young).
109. *Lycosa fatifera* Htz., Spid. U. S., 26, 1875.
From Wyandotte, September 8, May 27 (with cocoon); Bass Lake,
October 10; New Harmony, September 3; Culver, August 22;
Marion County, May 30.
110. *Lycosa frondicola* Emer., Trans. Conn. Acad., VI, 484, 1885.
From Mitchell, August 28; North Vernon, April 14 (young); New
Albany, May 4; Huntingburgh.
111. *Lycosa gracilis* Banks, Proc. Acad. Nat. Sci. Phil., 1892, 70.
From Wyandotte, April 17.

112. *Lycosa helluo* Walck., Emer., Trans. Conn. Acad. Sci., VI, 482, 1885.
From Tippecanoe Lake, June 6; Arlington, June 10; Bass Lake, April 9; Mitchell, August 28 (young); Grand Chain, May 12, June 3; Medora, September 24; Mecca, April 27; Jeffersonville, June 23 (young); Marion County, May 30; Huntingburgh.
113. *Lycosa kochi* Keys., Verh. zool.-bot. Ges. Wien, 1876, 636.
From Tippecanoe Lake, August 17; Wyandotte, September 8 (young), 9; Bass Lake, October 10; Grand Chain, September 5; Medora, September 24; Huntingburgh.
114. *Lycosa ocreata* Htz., Spid. U. S., 33, 1875.
From Tippecanoe Lake, June 8, August 17; Mitchell, July 15; Vawter Park, June 1; Laporte County, August 26.
115. *Lycosa pratensis* Emer., Trans. Conn. Acad., VI, 483, 1885.
From Vincennes, April 25 (young); Wyandotte, August 17 (young); Bass Lake, April 10; Medora, September 24; Pine, October 29.
116. *Lycosa punctulata* Htz., Spid. U. S., 31, 1875.
From North Vernon, September 14; Greencastle.
117. *Lycosa scutulata* Htz., Spid. U. S., 32, 1875.
From Mitchell, August 28; Greencastle; Huntingburgh.
118. *Pardosa lapidicina* Emer., Trans. Conn. Acad., VI, 494, 1885.
From Kosciusko County.
119. *Pardosa flavipes* Keys., Verh. zool.-bot. Ges. Wien, 1876, 616.
From Bass Lake, April 10 (young); Jeffersonville, June 23 (young); Huntingburgh.
120. *Pirata insularis* Emer., Trans. Conn. Acad., VI, 492, 1885.
From Hammond, May 7.
121. *Pirata piratica* Clerck., Emer., Trans. Conn. Acad., VI, 492, 1885.
From Clear Lake, August 13; Knox County, May 26.
122. *Allocosa funera* Htz., Spid. U. S., 34, 1875.
From Knox County, July 2.
123. *Trochosa cinerea* Fabr., Emer., Trans. Conn. Acad., VI, 488, 1885.
From Hammond, June 16; Grand Chain, September 5; Pine, May 25; Greencastle.

Family CTENIDÆ.

124. *Ctenus punctulatus* Htz., Spid. U. S., 35, 1875.
From Wyandotte, April 17 (young); September 8.

Family ATTIDÆ.

125. *Phidippus putnami* Peck, Att. N. A., 35, 1888.
From Knox County, July 2; Grand Chain.
126. *Phidippus cardinalis* Htz., Spid. U. S., 51, 1875.
From North Vernon, September 14.
127. *Phidippus multicolor* Htz., Spid. U. S., 53, 1875.
From Vincennes, July 10; Wyandotte, June 25, 26; Grand Chain, July 8; Shoals, July 13; Greencastle.
128. *Phidippus audax* Htz., Spid. U. S., 50, 1875.

- From Arlington, June 10; Bass Lake, June 22; New Harmony, May 6; September 3; Grand Chain, May 12, June 3; Attica, June 20; North Vernon, May 7; Culver, June 29; Greencastle; Huntingburgh.
129. *Phidippus rufus* Htz., Spid. U. S., 60, 1875.
From Vincennes, July 10; Wyandotte, September 9; Bass Lake, June 17; Grand Chain, July 8; Wilders, July 25; Huntingburgh.
130. *Phidippus insigniarius* Koch., Die. Arachn., XIII, 150, 1846.
From Hammond, June 16; Arlington, June 10.
131. *Philaeus rimator* Peck, Att. N. Amer., 32, 1888.
From Greencastle.
132. *Dendryphantes rarus* Htz., Spid. U. S., 62, 1875.
From Greencastle.
133. *Dendryphantes militaris* Htz., Spid. U. S., 62, 1875.
From Wyandotte, June 25; Mitchell, July 15.
134. *Dendryphantes octavus* Htz., Spid. U. S., 70, 1875.
From Hammond, June 16, May 29, July 30; Arlington, June 10; Wyandotte, June 25, 26; Bass Lake, June 22; Grand Chain, May 12, June 3; Attica, June 20; Shoals, May 16; Veedersburg, May 12; Vawter Park, June 1; Pine, June 29; New Albany; Culver, June 29.
135. *Phlegra leopardus* Htz., Spid. U. S., 63, 1875.
From New Harmony, September 3.
136. *Habrocestum pulex* Htz., Spid. U. S., 65, 1875.
From Wyandotte, September 8.
137. *Thiodina retarius* Htz., Spid. U. S., 161, 1875.
From Wyandotte, June 25, July 25; Grand Chain, June 3; New Albany; Huntingburgh.
138. *Mavia vittata* Htz., Spid. U. S., 64, 1875.
From Arlington, June 10; New Albany.
139. *Marpissa undata* De Geer, Peck, Att. N. Am., 80, 1888.
From Greencastle; Huntingburgh.
140. *Wala mitrata* Htz., Spid. U. S., 68, 1875.
From Arlington, June 10; Grand Chain; July 8, May 12, June 3; Shoals, May 16; Veedersburg, May 12; Vawter Park, June 1; Shoals, July 13.
141. *Wala palmarum* Htz., Spid. U. S., 71, 1875.
From Hammond, June 16, May 29, July 30; Arlington, June 10; Pine, May 25.
142. *Tutelina elegans* Htz., Spid. U. S., 56, 1875.
From Hammond, May 29; Arlington, June 10; Bass Lake, June 22; Shoals, May 16; Culver, June 29; Knox County, July 2.
143. *Zygoballus bettini* Peck, Att. N. Amer., 89, 1888.
From Knox County, July 2.
144. *Homalattus cyaneus* Htz., Spid. U. S., 69, 1875.
From Hammond, June 16.
145. *Synemosyna formica* Htz., Spid. U. S., 73, 1875.
From Arlington, June 10; Culver, June 29.

Order PHALANGIDA. (Harvestmen or "Daddy Long-legs.")

146. *Oligolophus pictus* Wood., Comm. Essex Inst., VI, 21, 1869.
From Tippecanoe Lake, June (young), August 19; Vincennes, August 23 (young); Knox County, July 2.
147. *Hadrobunus grande* Say, Wood, Comm. Essex Inst., VI, 25, 1869.
From Tippecanoe Lake, August 19; Wyandotte, September 8; Bass Lake, June 20 (young); Mitchell, August 28; New Harmony, September 5; Culver, June 29; Knox County, May 26 (young).
148. *Liobunum ventricosum* Wood, Comm. Essex Inst., VI, 23, 1869.
From Clear Lake, August 13.
149. *Liobunum calcar* Wood, Comm. Essex Inst., VI, 17, 1869.
From Bass Lake, June 17; Arlington, June 26.
150. *Liobunum vittatum* Say, Wood, Comm. Essex Inst., VI, 11, 1869.
Tippecanoe Lake, August 19; Wyandotte, June 25 (young), September 8; New Harmony, September 3; Grand Chain, July 8; Montezuma, July 22; New Albany, June 23; Arlington, June 26; Knox County, July 2; Culver, August 22.
151. *Liobunum formosum* Wood, Comm. Essex Inst., VI, 21, 1869.
From New Harmony, April 23 (young); Grand Chain, April 19 (young); Putnam County, April 22 (young).
152. *Liobunum politum* Weed, Bull. Ill. St. Lab. Nat. Hist., III, 89, 1889.
From Tippecanoe Lake, August 19; Wyandotte, September 8.
153. *Liobunum nigripes* Weed, Trans. Amer. Ent. Soc., XIX, 190, 1892.
From New Harmony, September 3; Arlington, June 26.
154. *Cymorta sayi* Simon., Ann. Soc. Ent. Belg., XXII, 200, 1879.
From Wyandotte, September 8, August 17; Cannelton, May 31; New Albany, May 4.
155. *Scotolemon flavescens* Cope, Amer. Nat., VI, 420, 1872.
From Clifty Cave; recorded also from Wyandotte Cave.

Order PSEUDOSCORPIONIDA. (Chelifers.)

156. *Chthonius packardi* Hag., Zool. Anzeiger, July, 1879, II, 399.
From Wyandotte Cave.
157. *Chelanops oblongus* Say, Ed. Lec., II, 12.
Wells County, April 10; Marion County, March 14.
158. *Chelanops sanborni* Hagen., Amer. Ent., 1868, 51.
Marion County, April 17.
- 158a. *Chelanops pallidus* Banks.
Lawrence County, May 9.

Order ACARINA. (Mites.)

159. *Rhagidia cavicola* Banks, Amer. Nat., 1897, 382.
From Twin Cave (Banta).
160. *Cheyletus clavispinus* Banks, Canad. Entom., 1902, 172.
From Indianapolis.
161. *Trombidium locustarum* Riley, Banks, Trans. Amer. Ent. Soc., XXI, 213, 1894.
From Wyandotte, April 17; Putnam County, April 22.

162. *Trombidium sericeum* Say, Banks, Trans. Amer. Ent. Soc., XXI, 212, 1894.
From Hammond, May 7; New Harmony, February 23; Mecca, April 27.
- 162a. *Bryobia pratensis* Garman, Insect Life, III, 45.
Indianapolis, April 14.
163. *Rhyncholophus longipes* Banks, Trans. Amer. Ent. Soc., XXI, 215, 1894.
From Bass Lake, April 9.
- 163a. *Caeculus clavatus* Banks.
Lawrence County, May 9.
164. *Celaenopsis americana* Banks, Proc. Ent. Soc. Wash., VII, 137, 1906.
From Indianapolis.
165. *Ixodes scapularis* Say, Compl. Writ., Leconte Ed., II, 21, 1859.
One male from Indianapolis.
166. *Galumna imperfecta* Banks, Proc. Phil. Acad. Nat. Sci., 1906.
Marion County.
167. *Galumna emarginata* Banks.
Putnam County, April 22.
168. *Liacarus nitidus* Banks.
Putnam County, April 22.
169. *Phthiracarus arctatus* Riley, Sixth Mo. Rept., 1874. 52.
Lake County, June 11.

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