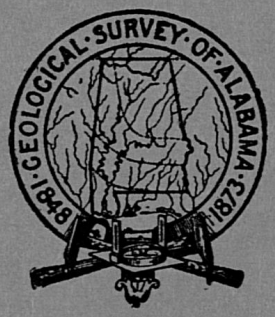
GEOLOGICAL SURVEY OF ALABAMA
WALTER B. JONES, State Geologist

MUSEUM PAPER 22
ALABAMA MUSEUM OF NATURAL HISTORY

THE THERIDIIDAE OR COMB-FOOTED SPIDERS OF ALABAMA. State geologist.

by
ALLAN F. ARCHER



UNIVERSITY, ALABAMA
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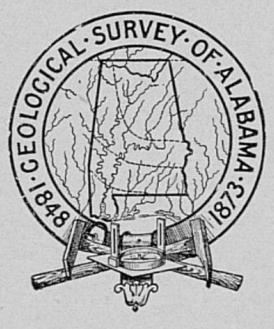

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MUSEUM PAPER NO. 22
ALABAMA MUSEUM OF NATURAL HISTORY
WALKER PRINTING CO.
Printers and Stationers
Montgomery, Ala.
1947

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LETTER OF TRANSMITTAL

University, Alabama

December 6, 1946

Honorable Chauncey Sparks,

Governor of Alabama,

Montgomery, Alabama.

Sir:

I have the honor to transmit herewith the manuscript of a re-
port entitled "The Theridiidae or Comb-footed Spiders of Alabama,"
by Allan F. Archer. It is requested that this be printed as Museum
Paper 22 of The Geological Survey of Alabama.

Respectfully,

WALTER B. JONES,

State Geologist.

THE THERIDIIDAE OR COMB-FOOTED SPIDERS OF ALABAMA

by

ALLAN F. ARCHER

INTRODUCTION

This paper is intended as a contribution to the work of cataloguing the fauna and flora of Alabama. The family of spiders undertaken here is fairly large, but with some outstanding exceptions is so obscure as to escape notice of those collectors engaged in fields of zoology other than arachnology. The reason for this is the extremely small size of most of the species as well as their modest and retiring habits. The exceptions to this are the black widow spider (**Latrodectus mactans**) and the house or cobweb spiders (**Theridion tepidariorum, Tidarren sisyphoides, and Teutana triangulosa**). The first one has a notorious reputation, and is of importance in medical entomology and at the same time not devoid of importance from an economic standpoint, while the others mentioned make webs in and around houses, that constitute an annoyance to the housewife. Although many very small species of Theridiidae also invade houses, they are seldom noticed.

I wish to acknowledge my indebtedness to Dr. Walter B. Jones for his kindness in extending research facilities to myself so that this work could be prosecuted and finally published. I am indebted to the Alabama Department of Conservation for furnishing the opportunity for taking specimens and field data while pursuing ecological studies all over the state. Dr. W. J. Gertsch of the American Museum of Natural History, New York, rendered invaluable aid in identifying very many species, in checking up on my own identifications, and in the sending of many valuable lots of specimens from all over the United States and Mexico for comparative purposes. I also want to thank Miss Elizabeth B. Bryant of the Museum of Comparative Zoology, Harvard University, for various helps. My gratitude goes to Dr. Jones and to Mr. Barney Henson of Huntsville, Alabama, for the collecting and donation of specimens from the northern part of the state.

The Theridiidae are distinguished from related families of spiders by the fact that they have a "comb" on the tarsi (terminal segment)

of the fourth legs, and hence are called comb-footed spiders. The second character is the convergence of the maxillae over the labium (lip). The chelicerae (jaws) lack a lateral condyle, and in the males the palpus lacks a paracymbium (usually present in allied families). In certain species, however, the "comb" is almost rudimentary, and besides that a few species are almost intermediate between this family and the Linyphiidae and Micryphantidae. Dr. Petrunkevitch admirably states some of the difficulties to be faced with those species that are transitional from this family to other families in his "Spiders of Porto Rico."* It is the author's belief that the clue to some of these puzzles may be found in the type of web made by the questionable species. In the comb-footed spiders the type of web can be correlated with the "comb" and the convergent maxillae, and this type of web is a cob web, a maze of threads with no apparent form or regularity. The spider hangs in the web with its back downward. One other family that infests houses also makes a cob web, and this family is the Pholcidae, not closely related, however, and whose members can be distinguished even by the lay observer in that the legs are exceedingly long and thin, while the body is relatively small.

For the most part the Theridiidae are not very venomous, and are at least incapable of biting man because of their very small size. However, the genus **Latrodectus** is a marked exception to this. It has an evil reputation wherever it occurs, and there is sound scientific evidence that our native member of the genus, the black widow spider, along with foreign species variously known as katipo (New Zealand), vanicoho and menavodi (Madagascar), karakurt (Russia), malmignatte (Italy), and arana capulina (Latin America) is among the most poisonous spiders known.

Aside from specimens collected by Dr. Jones and Mr. Henson, and some **Latrodectus mactans** contributed by friends, the great bulk of the specimens on which this work is based were taken by the author. The collections were made between the latter part of 1938 and the present time (1946). However, the collecting in Alabama was interrupted for four years by reason of the war. Fortunately it was possible to make a bulky collection of spiders in Mississippi during an aggregate of one and one half years of the wartime period. This collection contains a large series of Theridiidae, and these help to throw light on the occurrence of certain species, and therefore it is

* Trans. Conn. Acad. Arts Sci., 1930, 30: 165-166.

important when correlated with collections made in Alabama and Louisiana previously.

The method of handling the Theridiidae will largely follow the plan used in Museum Papers 14 (1940) and 18 (1941), Geological Survey of Alabama. These museum papers on spiders can be used profitably in conjunction with each other.

Zoogeography and distribution. On the whole the plan which is used here will be that used in Museum Paper 14, but with a few modifications. First of all there are only two species of seemingly exotic origin, **Teutana grossa** and **T. triangulosa.** Both species are of tropical or subtropical affinities. The first species appears to have been introduced recently, while the second one is known to have been present and established in Alabama as far back as the time when Nicholas Hentz was working there (1834 and later).

1. **North Alabama.** This region corresponds roughly with the **Sedimentary Highlands** described in Museum Paper 14, page 9, but also takes in that part of the western strip of the **Coastal Plain** that extends north of a line running through Carrollton and Tuscaloosa. The only Theridiidae known to be confined to the northern area are **Emertonella emertoni, Theridion dulcineum,** and **T. rupicola.** The area involved is designated by the symbol N under the section called **Ecology.**

2. **South Alabama.** This area comprises that part of the **Coastal Plain** (Museum Paper 14, page 9) that lies south of the junction of the Tallapoosa and Alabama rivers in the eastern part of the state and below the junction of the Black Warrior and Tombigbee rivers in the west. Theridiidae which seem to be confined to this area are in some instances of tropical affinities, and are recorded from Texas and Florida. These are **Chrysso davisi, Coleosoma flavipes, Conopistha globosa, Dipoena buccalis, D. lineatipes, Stemmops bicolor, Theridion hobbsi, T. chinda, T. realisticum, T. serenoae, Teutana grossa, Tidarren minor.** This area is called S under **Ecology.**

3. **Central and South Alabama.** The central area comprises the remaining part of the state, and includes that part of the **Crystalline Highlands** (Museum Paper 14, page 9) called the Piedmont (except for the southeastern tip). When the southern part of the state is considered in conjunction with it, there are some species that occur in common in the two areas, but which are missing in the north-

ern part of Alabama. These species are **Coleosoma floridanum, Theridion amputatum, T. arcadicum, T. catapetraeum, T. dividuum.** The symbol used for this area is SC.

4. **Central and North Alabama.** In considering these two areas in conjunction with each other we have two species confined to them, **Theridion punctosparsum** and **T. redemptum.** In the case of the second species it should be noted that it occurs in southerly regions in states lying west of Alabama. The symbol for this area is NC.

The number of species taken from the counties varies considerably. The large counties in central and south Alabama, that have been most heavily collected yielded the largest lists of Theridiidae. Tuscaloosa County tops the list with 26 species. Mobile and Baldwin counties are rich collecting areas, and each of them yielded 24 species. Houston and Montgomery counties gave 20 species and 19 species respectively. In the northern part of Alabama Madison County furnished 20 species, while Morgan County furnished 18 species.

Ecology. The **Theridiidae** occupy a wide variety of habitats, and indeed are found not only at sea level, but also occur at high altitudes within the state. The treatment of plant-animal communities is very similar to that used in Museum Paper 14. Since some species are not universally present in the habitats described, the following symbols are used to qualify the geographical limitations of these species: S — south Alabama, SC — south and central Alabama, N - north Alabama, NC — north and central Alabama.

HYGRIC COMMUNITIES

1. Salt Marshes.

Theridula ventillans

2. Evergreen Swamps (cypress, tupelo—fluviatile).

Conopistha nephilae
Conopistha rufa
Episinus amoenus
Hentziectypus globosus
Rhomphaea lacerta
Spintharus flavidus
Theridion flavonotatum
Theridion lyricum
Theridion pennsylvanicum
Tidarren sisyphoides
Ulesanis americanus

3. Non-alluvial Swamps (bay, black gum).

Coleosoma flavipes (S)
Conopistha globosa (S)
Conopistha nephilae
Conopistha partita
Conopistha rufa
Rhomphaea lacerta
Spintharus flavidus
Theridion flavonotatum
Theridion glaucescens
Theridion pictipes
Theridion tepidariorum
Theridula ventillans
Tidarren sisyphoides
Ulesanis americanus

4. Palmetto Swamps.

Conopistha nephilae
Theridion flavonotatum
Hentziectypus globosus
Tidarren sisyphoides

EROSION COMMUNITIES

5. Beaches (saw palmetto and ground plants).

Latrodectus mactans
Theridion glaucescens
Hentziectypus globosus
Theridion serenoae (S)

6. Stationary Dunes (**Quercus myrtifolia, Q. geminata, Serenoa serrulata**).

Anelosimus textrix
Chrysso davisi (S)
Coleosoma floridanum (SC)
Conopistha partita
Hentziectypus globosus
Theridion flavonotatum
Theridion glaucescens
Theridion serenoae (S)

MESIC COMMUNITIES

7. Flood-plain Woods.

Conopistha partita
Dipoena nigra
Episinus amoenus
Rhomphaea lacerta
Theridion glaucescens
Theridula ventillans
Tidarren sisyphoides
Ulesanis americanus

8. Slash-pine Woods (with palmettoes and tyty).

Conopistha partita
Hentziectypus globosus
Theridion differens
Theridion flavonotatum
Theridion glaucescens
Theridion serenoae (S)
Tidarren minor (S)
Tidarren sisyphoides

TRANSITIONAL FROM MESIC TO XERIC COMMUNITIES

9. Live-oak Hammock Woods (Museum Paper 18, p. 6).

Anelosimus textrix
Chrysso davisi (S)
Coleosoma flavipes (S)
Coleosoma floridanum (SC)
Conopistha globosa (S)
Conopistha nephilae
Conopistha partita
Conopistha rufa
Crustulina altera
Dipoena buccalis (S)
Dipoena lineatipes (S)
Dipoena nigra
Episinus amoenus
Hentziectypus globosus
Latrodectus mactans
Paidisca marxi
Spintharus flavidus
Theridion amputatum (SC)
Theridion flavonotatum
Theridion glaucescens
Theridion lyricum
Theridion pictipes
Theridion serenoae (S)
Theridula ventillans
Tidarren minor (S)
Tidarren sisyphoides
Ulesanis americanus

10. Flat Woods (**Pinus echinata, Quercus stellata**).

Conopistha partita
Conopistha rufa
Crustulina altera
Dipoena buccalis (S)
Dipoena nigra
Episinus amoenus
Hentziectypus globosus
Latrodectus mactans
Theridion amputatum (SC)
Theridion flavonotatum
Theridula ventillans
Tidarren sisyphoides

11. Ravines, Bluffs, and Hardwood slopes (northern, cent and southern region exclusive of the southwest—Museum Paper p. 12).

Anelosimus textrix
Coleosoma flavipes (S)
Conopistha globosa (S)
Conopistha nephilae
Conopistha partita
Conopistha rufa
Crustulina altera
Dipoena nigra
Emertonella emertoni (N)
Episinus amoenus
Euryopis limbata
Theridion albidum
Theridion catapetraeum (SC)
Theridion differens
Theridion dulcineum
Theridion flavonotatum
Theridion frondeum
Theridion glaucescens
Theridion lyricum
Theridion pennsylvanicum
Theridion punctosparsum (NC)
Theridion realisticum (S)

Hentziectypus globosus
Lithyphantes fulvus
Paidisca marxi
Rhomphaea lacerta
Spintharus flavidus
Theridion redemptum (NC)
Theridion rupicola (N)
Theridula ventillans
Tidarren sisyphoides
Ulesanis americanus

12. Lime-hill Hardwood Forests (slopes, ravines, and bluffs, southwest Alabama).

Anelosimus textrix
Chrysso davisi (S)
Coleosoma flavipes (S)
Conopistha globosa (S)
Conopistha nephilae
Conopistha partita
Conopistha rufa
Dipoena crassiventris (S)
Dipoena nigra
Episinus amoenus
Hentziectypus globosus
Paidisca marxi
Spintharus flavidus
Stemmops bicolor (S)
Theridion amputatum (SC)
Theridion catapetraeum (SC)
Theridion flavonotatum
Theridion glaucescens
Theridion lyricum
Theridion pictipes
Theridula ventillans
Tidarren minor (S)
Tidarren sisyphoides
Ulesanis americanus

XERIC COMMUNITIES

13. Dry Sandy Hammocks (**Quercus stellata, Q. cinerea, Q. laurifolia, Pinus elliotti, Magnolia grandiflora, Serenoa serrulata** — Gulf Coast).

Anelosimus textrix
Conopistha globosa (S)
Conopistha nephilae
Conopistha partita
Conopistha rufa
Hentziectypus globosus
Theridion serenoae (S)
Ulesanis americanus

14. Upland Woods (oak-pine and oak-hickory).

Anelosimus textrix
Conopistha partita
Conopistha rufa
Enoplognatha marmorata (NC)
Hentziectypus globosus
Spintharus flavidus
Theridion catapetraeum (SC)
Theridion differens
Theridula ventillans
Tidarren sisyphoides
Ulesanis americanus

15. Longleaf-pine Woods.

Conopistha nephilae
Theridion flavonotatum
Theridion glaucescens
Theridion murarium
Theridula ventillans
Ulesanis americanus

16. Cedar Roughs.

Anelosimus textrix
Hentziectypus globosus
Latrodectus mactans
Paidisca marxi
Theridion glaucescens
Theridion punctosparsum (NC)
Theridula sphaerula

17. Prairies.

Theridion amputatum (SC)
Theridion australe
Theridion dividuum (SC)
Theridion glaucescens
Theridion expulsum
Theridula ventillans

LOWER MONTANE ZONE

18. Mountains (between 1300 and 2100 feet elevation—hard wood vegetation characterized by chestnut oak, tulip poplar, beech maple, hickory).

Asagena americana
Conopistha nephilae
Conopistha rufa
Dipoena nigra
Latrodectus mactans
Paidisca marxi
Spintharus flavidus
Theridion albidum
Theridion differens
Theridion flavonotatum
Theridion glaucescens
Theridion punctosparsum (NC)
Theridion rupicola
Theridion tepidariorum
Theridula ventillans
Tidarren sisyphoides

CAVERNS

19. Caves (entrance and interior regions).

Conopistha partita
Conopistha rufa
Hentziectypus globosus
Theridion redemptum (NC)
Theridion rupicola (N)
Theridion tepidariorum
Tidarren sisyphoides

ARTIFICIAL COMMUNITIES

20. Old-field Pine.

Conopistha nephilae
Conopistha rufa
Euryopis limbata
Latrodectus mactans
Theridula ventillans
Tidarren sisyphoides

21. Thickets (field borders, orchards, gullies, dry stream beds).

Conopistha nephilae
Conopistha rufa
Crustulina altera
Theridion alabamense
Theridion differens
Theridion flavonotatum
Theridion glaucescens
Theridula ventillans
Tidarren sisyphoides

22. Fields and Roadsides.

Conopistha nephilae
Conopistha rufa
Hentziectypus globosus
Latrodectus mactans
Rhomphaea lacerta
Theridion arcadicum (SC)
Theridion catapetraeum (SC)
Theridion differens
Theridion dividuum (SC)
Theridion flavonotatum
Theridion glaucescens
Theridion lyricum
Theridion redemptum (NC)
Theridion rupicola (N)
Theridion tepidariorum
Theridula ventillans

23. Farmyards.

Latrodectus mactans
Theridion arcadicum (SC)
Theridion lyricum
Theridion punctosparsum (NC)
Theridion tepidariorum

24. Urban (gardens, vacant lots, cemeteries).

Anelosimus textrix
Coleosoma flavipes (S)
Coleosoma floridanum (SC)
Conopistha partita
Conopistha rufa
Hentziectypus globosus
Latrodectus mactans
Paidisca marxi
Teutana grossa (SC)
Teutana triangulosa
Theridion alabamense
Theridion arcadicum
Theridion catapetraeum (SC)
Theridion chinda (S)
Theridion differens
Theridion frondeum
Theridion glaucescens
Theridion hobbsi (S)
Theridion lyricum
Theridion murarium
Theridion tepidariorum
Theridula ventillans
Tidarren minor (S)

25. Aedificarian (houses, barns, privies).

Coleosoma flavipes (S)
Conopistha nephilae
Conopistha partita
Conopistha rufa
Latrodectus mactans
Teutana triangulosa
Theridion glaucescens
Theridion lyricum
Theridion murarium
Theridion tepidariorum
Tidarren minor (S)
Tidarren sisyphoides

Ecological communities in southern Florida. Since a great many species occurring in southern Florida are also found in south Alabama, it is of some value to present lists from that part of Florida. For a full description of the communities and localities concerned it is recommended that Museum Paper 18, pages 6 to 9 be consulted.

1. Miami Pinelands (Museum Paper 18, p. 7).

Conopistha nephilae Tacz.
Conopistha rufa Walck.
Theridion catapetraeum G. & A.
Theridion serenoae G. & A.

2. Palm Savannas (Museum Paper 18, pp. 7-8).

Conopistha nephilae Tacz.
Theridion flavonotatum Becker
Theridion serenoae G. & A.
Tidarren sisyphoides Walck

3. Low Hammocks (Museum Paper 18, p. 8).

Chrysso davisi Bryant. (Sarasota)
Conopistha globosa Keys. (Sarasota; Micco)
Conopistha partita Walck. (Sarasota)
Conopistha rufa Walck. (Sarasota; Micco)
Theridion amputatum Keys. (Sarasota)
Theridion serenoae G. & A. (Micco)
Tidarren sisyphoides Walck. (Sarasota)
Ulesanis americanus Em. (Sarasota)

4. Tropical Hammocks (Museum Paper 18, pp. 8-9). Localities: Royal Palm State Park; Cox Hammock; Brickell Hammock.

Anelosimus textrix Walck. (Royal Palm)
Coleosoma flavipes Camb. (Royal Palm)
Conopistha americana Tacz. (Royal Palm)
Conopistha globosa Keys. (Royal Palm)
Conopistha nephilae Tacz. (Royal Palm; Cox)

Conopistha partita Walck. (Royal Palm; Brickell)
Conopistha rufa Walck. (Royal Palm; Cox)
Mectipa clementinae Petr. (Cox) One bright yellow female with egg sacks in the web located between the ribs of a cabbage palmetto at the edge of the hammock.

Spintharus flavidus Htz. (Royal Palm)
Theridion catapetraeum G. & A. (Royal Palm)
Theridion glaucescens Beck. (Royal Palm; Cox)
Theridion serenoae G. & A. (Royal Palm)
Theridula regia G. & A. (Royal Palm) Females taken from ground plants growing on marly soil outside of the hammock.
Tidarren minor C. & I. (Royal Palm)
Tidarren sisyphoides Walck. (Royal Palm; Brickell)

SYSTEMATIC CATALOGUE

General discussion. The role which Nicholas Hentz played in the early studies of Alabama spiders has already been discussed in Museum Paper 14, pages 7 and 8. Many of Hentz' names were superseded by those proposed by a European worker, Walckenaer. The reason that this happened as it did arose from the fact that a naturalist named John Abbot had figured, described, and sent to Walckenaer colored pictures of spiders that he observed in the latter part of the eighteenth century. Abbot's work was done in Georgia. It is for this reason that very many species which occur both in Alabama and Georgia were covered by Walckenaer's descriptions. R. V. Chamberlin and W. Ivie in their "Spiders of the Georgia Region of North America* have revived many Walckenaer names after a careful study and consideration of Abbot's illustrations. As these names have priority many well known names must fall to them. The authors have done very well in evaluating some of Walckenaer's names. However, if some of the conclusions prove to be premature, there will have to be modifications of the opinions set forth in the Spiders of Georgia. In this work the author has followed these

*Bull. Univ. Utah, 1944, 35: 1-267.

changes wherever they seemed on examination of the evidence to be warranted. Of some importance in the completion of this work is the paper entitled "Descriptions of New American Theridiidae"*, a joint paper done by Dr. Gertsch and the author, in which a great many new species were described for Alabama and other parts of North America.

As it now stands the list of Alabama Theridiidae consists of 58 species. This is one of the largest, if not the largest state list that has been published. It is true that the list contained in the Spiders of the Georgia Region just referred to is given as 60 species that have a certain and sure status. However, an evaluation of this list reduces it to 54 species when Florida species and other out-of-state items have been removed, and furthermore when certain other doubtful or obscure Walckenaeran species are deleted from the list. By adding another species not on this list, but which has been taken by the author the list for Georgia stands at 55. Unquestionably species could be added to the lists of both states by further collecting. Actually the Georgia list in its present status is a remarkable one owing to the very careful collecting on the part of Wilton Ivie and on the part of Bishop and Crosby in 1916. The Alabama list does not show as large a series of the following genera as does the Georgia list: **Dipoena**, **Euryopis**, and **Lithyphantes**. This may be in part due to the fact that the presence of the Blue Ridge physiographic province in Georgia is sufficient to permit the occurrence of northern and high-altitude species, while on the other hand this province in Alabama is represented by an attenuated segment of too little importance to allow for the presence of such species. The New York list of Theridiidae is smaller than the Alabama one despite the careful attention that the state has received. Petrunkevitch's Porto Rico list stands at 23, while Bryant's list for Cuba* is about 39 species.

The following spiders which occur in Alabama are withdrawn from the family Theridiidae: **Theridion ambitum, T. sex-setosum**, and **Mysmena guttata**. The first species, **Theridion ambitum** Barrows (Ohio Journ. Sci., 1940, **40:** 131, figs. 5, 5a) is a cave spider that does not have the structural features of the Theridiidae, and properly belongs in a related family. **Theridion sex-setosum** Barrows has been listed in two papers since Barrows described it. It is not a theridiid but on the contrary is a linyphiid, and was described by Chamberlin

*Amer. Mus. Nov., 1942, no. 1171.
*Bull. Mus. Comp. Zool., 1940, 86, no. 7.

as **Graphomoa theridioides** (Proc. U. S. Nat. Mus. **63:** 8, pl. 2, figs. 10-12). Dr. Gertsch kindly pointed this out to me in a letter. **Mysmena guttata** (Banks) has been long considered as a theridiid, and as belonging near **Theonoe.** In the "Spiders of Porto Rico" Petrunkevitch lists **Theonoe striatipes** (p. 167) as belonging to a subfamily called the Mysmeninae. It is believed here that, because **Mysmena** on which the subfamily is based should be withdrawn from the Theridiidae, the name Mysmeninae is not the proper category for the theridiid genus **Theonoe.** It is therefore proposed that the subfamily **Theonoinae** be substituted, and that **Mysmeninae** be removed to another family to cover **Mysmena.** The reasons for removing **Mysmena guttata** from the Theridiidae are: 1. The spider makes a sheet web unlike that of the comb-footed spiders, but very like that of **Graphomoa** (which occupies the same habitats). 2. There is no "comb" apparent under any magnification used. 3. The maxillae are not convergent over the lip. Since there is in the Archer collection a good series of males and females from eighteen localities in Alabama and Florida, it was possible to study specimens carefully. In these very minute spiders it is apparent that the sternum is not truncated between the hind coxae, but instead is rounded behind. The tip of the patellar spine in both sexes converges wtih the tip of the tibial spine below it. In the male there is on the first metararsus a bladelike curved, prolateral spine mounted on a tubercle, and on the distal portion of the first tibia are a pair of bladelike prolateral spines. The palpus is apparently unlike those found in the Theridiidae, and suggests an affinity with the Micryphantidae. The embolus is a circular structure projecting from the genital bulb. The epigynum of the female is very obscure, and consists of a pair of oval, brown structures, very small, and visible through the cuticle.

In the figures used in the two plates for this text localities are cited in every instance. An adherence to this policy is necessary and desirable, because of the fact that species having a great geographical distribution are sometimes figured. If these species happen to be polymorphic, it is important to know whether the figure was drawn from a North American specimen or a West Indian specimen, for exemple.

The Theridiidae. The Alabama species of Theridiidae are introduced with a key to the six subfamilies. This key is largely based on the one published in Petrunkevitch's Spiders of Porto Rico.

1. Abdomen hard, with surface either pitted or lacking pits; dorsal

humps present or absent, but never having a dorso-apical cone.....
.....**Pholcommatinae**, p. 5

1. Abdomen not hard; very varied in shape, and sometimes possessing dorso-apical or caudal hump or cone. (2)

2. Claws (on the tip of the legs) smooth, without teeth .....
.....**Theonoinae**, p. 5

2. Claws with teeth. (3)

3. Teeth on claws more or less equal. Colulus present on the spinnerets. (4)

4. Abdomen of male with stridulating apparatus. Lateral eyes approximated, nearly touching; anterior median eyes if as large as posterior median eyes, not farther apart than they are.....
.....**Asageninae**, p. 1

4. Abdomen of both sexes without stridulating apparatus. Lateral eyes separated, or if approximated, anterior median eyes larger and farther apart than posterior median eyes.....**Latrodectinae**, p. 2

3. Teeth distinctly increasing in length distally. Colulus wanting. (5

5. Labium (lip) immobile, usually without a trace of a suture. Abdomen of male with stridulating apparatus.....**Argyrodinae**, p. 2

5. Labium mobile, with well defined suture. Abdomen in both sexes without stridulating apparatus.....**Theridiinae**, p. 3

Subfamily Asageninae.
Key to genera

One genus in the accompanying key is not known to occur in Alabama. However, it may prove helpful to those consulting this paper, if all genera occurring in the southern United States and the West Indies are included.

1. Anterior median eyes much larger than anterior lateral eyes.....
..... **Steatoda** (not in Alabama

1. Anterior median eyes not much, if any, larger than anterior lateral eyes. (2)

2. Lateral eyes on each side slightly but distinctly separated. (3)

3. Clypeus not much wider than area occupied by the eyes.....
.....**Lithyphantes**, p. 2

3. Clypeus much wider than ocular area ..... **Asagena**, p. 22

2. Lateral eyes on each side contiguous. (4)

4. Abdomen cylindrical, or sometimes high and narrow with a caudal cone over spinnerets. Lobes of stridulating apparatus of males very long ..... **Coleosoma**, p. 19

4. Abdomen otherwise, oval, ovate, or flattened ovate. Lobes of stridulating apparatus of males of moderate length only. (5)

5. Abdomen dark brown with two white spots across the middle. Males having two rows of ventral teeth on femora ..... **Asagena**, p. 22

5. Abdomen otherwise, and if brown lacking the transverse white spots on the middle. Males lacking ventral teeth on femora. (6)

6. Sternum broad and truncate behind. Capapace furnished with numerous small, crescent shaped elevations, each at the side of a puncture. Very small spiders ..... **Crustulina**, p. 20

6. Sternum narrowed and rounded behind. Carapace lacking elevations and punctures. Spiders one-eighth to one-fourth inch long (4-7 mm.). (7)

7. Labium long and pointed, more than half as long as the maxillae ..... **Teutana**, p. 20

7. Labium transverse, not but half as long as maxillae ..... **Enoplognatha**, p. 22

Coleosoma **O. P. Cambridge**, 1895

1. **Coleosoma floridanum** Banks.

Coleosoma floridana Banks, Canadian Entom., 1900, **32**: 98.

DISTRIBUTION. Baldwin (County): Gulf State Park, female, August 23-25, 1940; Tuscaloosa: Tuscaloosa, male, July 17, 1941. **All records with which no collector's name is given were taken by the author.**

ECOLOGY. Sifted from leaf litter in hammock woods. Male taken from wall of a filling station.

2. **Coleosoma flavipes** O. P. Cambridge.

Coleosoma flavipes O. P. Cambridge, Biol. Centr. Amer., Arach., 1889, **1**: 154, pl. 19, figs. 12, 12a-d. Bryant, Psyche, 1944, **51: 52-53**, figs. 1, 4, 7, 9.

DISTRIBUTION. Baldwin: Swift's Landing, Bon Secour River, females, January 17, 1942; Dallas: Soapstone Creek, female, December 1940; Mobile: Mon Louis Island, immatures; Pike: Orion, female, January 25, 1942. Many females and males taken in Mississippi, Wilkinson County, 1943, and Forrest County, 1946.

ECOLOGY. Taken by sifting leaves (spiders usually on the under sides) in swamp woods, hammock woods, beech-magnolia woods and oak-hickory woods. Males found on lettuce growing in urban gardens (Mississippi). Males and females not uncommon on walls next to roofs of privies and mosquito catching stations located in lowland areas particularly at the edge of forests.

MORPHOLOGY. This species has generally been known as **Achaea acutiventer** Keys (actually a Peruvian species), and was described by Chamberlin and Ivie in 1944, Spiders of Georgia Region as **Achaea index.** Miss Bryant has shown that our southern species is really the female of **Coleosoma flavipes.** Size: Female, 1.7 mm. male, 2.2 mm.

Crustulina **Menge**, 1868.

3. **Crustulina altera** Gertsch & Archer.

Crustulina altera Gertsch & Archer, Amer. Mus. Novit., 1942 No. 1171: 1-2, fig. 9.

DISTRIBUTION. Cullman: Cullman, males, females, October 3-6, 1941; Lawrence: Town Creek, females, October 5, 1940, male, October 4, 1941; Macon: Uphapee Creek, female, October 1940; Mobile: Chickasaw Bogue, female, November 6, 1940; Spring Hill, female, November 5, 1940; Morgan: Flint Creek, female, May 1941. Immatures taken from Baldwin, Madison, and Houston counties.

ECOLOGY. Webs. in curled leaves (oak, beech, etc.) in leaf litter live-oak hammocks, beech-maple, beech-magnolia, oak-hickory woods. In litter in oak-pine woods, dry ditches, and thickets in open fields. Size: Female, 2.0 mm.; male, 2.3 mm.

Teutana **Simon**, 1881.

4. **Teutana grossa** (C. Koch).

Theridion grossum C. Koch, Die Arachniden, 1838, **4:** 112, pl. 140, fig. 321.

DISTRIBUTION. Mobile: Mobile, females, January 1941; Montgomery: Montgomery, female, December 1940.

ECOLOGY. Under loose bricks in piles of bricks in vacant lots and cemeteries. Inside of overturned flower pots around greenhouses (Mobile). The irregular webs consisting of crossed lines are like those of large species of **Theridion.** The large white egg-sacs are conspicious. This species is predatory on **Latrodectus mactans,** and because it seems to prefer the same sorts of habitats as the latter species inside of cities, it has virtually ousted it in parts of Mobile. This phenomenon was also noticeable in Monterey, California in 1945. **Teutana grossa** seems to be a city dweller only. Size: Female, 8.0 mm.

5. **Teutana triangulosa** (Walckenaer)

Aranea triangulosa Walckenaer, Faune Paris, 1802, **2:** 207. **Theridion serpentinum** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6:** 273 pl. 9, fig. 2.

DISTRIBUTION. Lee: Auburn; Madison: Huntsville, female, September 28, 1940; Montgomery: Montgomery, females; Morgan: Decatur, females abundant, 1939, May 1946; Tuscaloosa: Tuscaloosa, females, males, 1940.

ECOLOGY. Common inside and outside of buildings, in corners of wall, lower angles of windows, under eaves; homes, public buildings, museums, filling stations. In rubbish piles along streets. In piles of loose bricks and mortar in cemeteries. Under overturned boxes in gardens. This species lives mostly in towns and cities, and is not frequently found in small rural communities. The white, pear-shaped egg-sacs are characteristic in the cob webs. Size: Female, 4.0 mm.

Lithyphantes **Thorell,** 1870.

6. **Lithyphantes fulvus** Keyserling.

Lithyphantes fulvus Keyserling, Spinnen. Amer., Ther., 1884, **1:** 142, pl. 6, fig. 89.

DISTRIBUTION. Lee: Auburn (reported by N. Banks), 1900; Opelika, immatures, 1940. Size: Female, 3.5 mm.

Asagena Sundevall, 1833.

7. **Asagena americana** Emerton.

Asagena americana Emerton, Trans. Conn. Ac. Sci., 1882, **6**: 23 pl. 4 , fig. 6.

DISTRIBUTION. Talladega Mountains, immature females, June 1940.

ECOLOGY. This species is found under rocks of talus in ravines, montane forest. Size: Female, 4.0 mm.

Enoplognatha **Pavesi**, 1880.

8. **Enoplognatha marmorata** (Hentz).

Theridion marmorata Hentz, Journ. Bost. Soc. Nat. Hist., 1850, 4 273, pl. 9, fig. 3.

DISTRIBUTION. Tuscaloosa: Tuscaloosa, females, May 14, 1941. Immatures, Huntsville, Alabama, 1946. Female, Stone's River, Shelbyville, Tennessee, July 1943. Female, Fort McPherson, Georgia, June 1943.

ECOLOGY. Inside of leaves of leaf litter with round, papery egg-sacs, rocky slopes of oak-hickory woods. In leaves among loose bricks, parklike oak-pine woods, suburban areas. Under slabs in rock walls along borders of rich hardwood timber. Seasonal distribution: Females, May to August, males April to May.

MORPHOLOGY. This is the largest species of the Asageninae in Alabama, length 7 mm., except for **Teutana grossa** which sometimes reaches the length of 8 mm.

Subfamily Latrodectinae.

Key to genera

1. Lateral eyes on each side widely separated; anterior median eyes not much larger than the posterior median eyes nor farther apart; rather larger spiders one-half inch in length (over 12 mm.) ..... **Latrodectus**, p. 2

1. Lateral eyes on each side nearly contiguous; anterior median eyes much larger than posterior median eyes and farther apart; very small spiders (2 mm.) with an elevated cephalon ..... **Dipoena**, p. 2

Dipoena **Thorell**, 1870.

Dipoena buccalis Keyserling, Spinnen Amer., Ther., 1886, **2:** 42, Pl. 11, fig. 127.

DISTRIBUTION. Houston: Chattahoochee State Park, male, October 18, 1939.

ECOLOGY. Sifted from leaf litter, hammock woods.

10. **Dipoena nigra** (Emerton)

Steatoda nigra Emerton, Trans. Conn. Ac. Sci., 1882, **6:** 21, pl. 4, figs. 4, 4a-b.

DISTRIBUTION. Baldwin: Jackson Oak, male, January 17, 1941; Cheaha State Park, Mount Cheaha, male, females, June 1940; Coosa: Hatchet Creek, female, June 1940; Houston: Omussee Creek, female, September 2, 1940.

ECOLOGY. Sifted from leaves, live-oak and dry hammock woods. Females and male sifted from undersides of dead chestnut oak and hickory leaves, rocky woods on mountain tops. On under surfaces of leaves on hackberry tree, evergreen-deciduous creek bluff hardwood. Undersurfaces of leaves of **Smilax** vine, weedy flatwoods. This species has been found feeding on specimens of the carpenter ant, **Camponotus castaneus** Latr., and apparently utilizes a host of small ants as food. Size: Female, 2.5 mm.; male, 1.5 mm.

11. **Dipoena crassiventris** Keyserling.

Dipoena crassiventris Keyserling, Spinnen Amer., Ther., 1886, **2:** 41, pl. 12, fig. 156.

DISTRIBUTION. Clarke: Grove Hill, female, April 1940. Wilkinson County, Mississippi, April 1944.

ECOLOGY. Sifted from leaf litter, rich hardwoods.

12. **Dipoena lineatipes** Bryant.

Dipoena lineatipes Bryant, Bull. Mus. Comp. Zool., 1933, **74** (6): 171-175, pl. 1, fig. 7.

DISTRIBUTION. Baldwin: Jackson Oak, female, January 1, 1944. Both this species and **D. buccalis** are listed as being limited to south Alabama, but since they are found in more northerly regions, this may turn out to be an erroneous interpretation.

ECOLOGY. Sifted from leaf litter, live oak hammocks.

Latrodectus **Walckenaer**, 1805.

13. **Latrodectus mactans** (Fabricius).

Aranea mactans Fabricius, Entom. Syst., 1775, **2:** 410, No. 11 **Theridion verecundum** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6:** 280 pl. 10, figs. 1-2.

DISTRIBUTION. Probably statewide. Counties where specimens or sight records made: Baldwin; Jackson; Greene, Houston; Lee, Madison (males, Monte Sano); Mobile (male, Dauphin Island); Montgomery (male, Mount Meigs); Morgan; Tuscaloosa (males).

ECOLOGY. In rural areas this species is scarce or absent in forests, but is often abundant in open fields, hiding under loose rocks logs, charred wood, and fallen fence palings, always avoiding direct sunlight. It is partial to the vegetation along beaches, and is common under old stems of the saw palmetto, Gulf Coast. In timbered areas it has turned up occasionally in small clearings or glades, and once at least at the bases of **Magnolia grandiflora** in hammock woods. At bases of trees, especially in scars, border of pine savannas, in old field pine groves. On farms it is apt to be common in wood piles, inside of privies, especially in the privy box where it can catch numerous flies that swarm on feces. Miscellaneous habitats in and around buildings are: Meter boxes, around cement superstrutcure of large wells, upper angles of doorways, everywhere in sewage disposal plants (feeding on **Psychoda flies**), at bases of walls in gardens. This species is almost universal under bridges and culverts. **Latrodectus mactans** is not confined to low elevations, but on the contrary is abundant in fields and around buildings at high elevations (3500 feet in the Great Smoky Mountains).

In the black widow the female is perennial in its activity. Males have been taken between May and November. This species is much feared because of its poisonous bite. The public should be taught to recognize this spider, and not to confuse it with other species of spiders that are harmless and beneficial. However, the black widow is an efficient predator, and is of much benefit because of the large numbers of large and harmful insects that it destroys. At the time when the Argentine fringed beetle was threatening an invasion of Alabama, hundreds of corpses of the beetle were found in single webs of **Latrodectus** at Flomaton. It has been observed that a great variety of beetles are captured, such as the cychrine **Sphaeroderus lecontei** Dej. and **Steneridea lodingi** Val. in Alabama, as well as species of **Brennus** in California.

This spider has many enemies in the form of predatory wasps, and even spiders such as the theridiid **Teutana grossa** (q. v.) and species of **Mimetus.**

MORPHOLOGY. The black widow spider can be recognized by the characteristic red hourglass marking on the venter of the abdomen. It is the largest member of the Theridiidate, at least 12 millimeters in length (one-half inch). In fact **Latrodectus mactans** is the largest known species of **Latrodectus.** Adult females found in Alabama are nearly solid black except for the ventral marking. White lines on the anterior part of the dorsum, exactly like the pattern of Hentz' **Theridion verecundum,** have been found twice, once on Monte Sano, Madison County, and once on the beach at Gulf State Park, Baldwin County.

Subfamily Argyrodinae.

Key to genera

1. Abdomen very long, slender, and vermiform, projecting far beyond spinnerts ..... **Rhomphaea,** p. 25

1. Abdomen much shorter, varied in form, either not projecting appreciably beyond spinnerts or else greatly elevated above them. (2)

2. Fourth leg longer than first. Carapace almost as wide as long ..... **Spintharus,** p. 29

2. First leg longer than fourth. Carapace considerably longer than wide ..... **Conopistha,** p. 26

Rhomphaea **L. Koch,** 1872.

14. **Rhomphaea lacerta** (Walckenaer).

Tetragnatha lacerta Walckenaer, His. Nat. Ins. Apt., 1841, **2:** 224. **Theridion fictilium** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6:** 282, pl. 10, fig. 4.

DISTRIBUTION. Baldwin: Hog Creek, immature female, 1940; Colbert: Gallymore Hollow, immature male, 1940; Lee: Chewacla Creek State Park, male, March 3-5, 1940; Tuscaloosa: Tuscaloosa, female, October 12, 1941.

ECOLOGY. Spiders hanging from very small web on undersurfaces of leaves on ironwood, mountain laurel (**Kalmia**), and other shrubs, usually along roads or trails, or at borders of evergreen hard-

wood swamp woods, oak-hickory, and oak-pine woods. Also foun on trunks of pines, longleaf-pine woods (south Mississippi). Lurkin on tall weeds (jimson weed) in open fields. This species is said t prey on small wasps, and various dipterous insects. It has been ob served to enter the webs of spiders, especially **Frontinella pyramitel** Walck. (**F. communis** Htz.) ,kill the occupants, and proceed to feed o them. This observation was made in Forrest County, Mississipp March 1946.

MORPHOLOGY. This is the species that is generally known a **Rhomphaea fictilium** Hentz. It is a small, wormlike species, with silvery abdomen, the metallic color being a character that is als shared by some species of the related genus **Conopistha.** The abdo men of **Rhomphaea** is movable. Size: Female, 5.0 mm.; leg I, 6.0 mm

Conopistha **Karsch,** 1881.

15. **Conopistha rufa** (Walckenaer).

Linyphia rufa Walckenaer, Hist. Nat. Ins. Apt., 1841, **2**: 284 **Theridion trigonum** Hentz, Journ, Bost. Soc. Nat. Hist., 1850, **6**: 280 Pl. 9, figs. 24-25.

DISTRIBUTION. Statewide. Counties: Autauga; Baldwin; Bibb Blount; Butler; Cherokee, Chilton; Coosa; Covington; Dale (male, Lak Tholocco); Dallas (male, Soapstone Creek); Elmore; Escambia (mal Little River State Park); Hale; Houston; Jackson; Lawrence; Lee; Mad son (male, Keel Mountain); Mobile (male, Spring Hill); Montgomer Morgan (male, Cave Spring Cave); Pickens; Tuscaloosa; Washingto Wilcox; Winston.

ECOLOGY. The usual habitat of this spider is the webs of oth spiders, medium-sized, or large species. It preys on small insec caught in the webs but beneath the notice of the large spider tha fashioned the web. This habit is shared by all of our Conopistha In webs of Argiopidae, Agelenidae, Theridiidae, Linyphiidae, te caterpillars; commonly in those of **Tidarren sisyphoides, Theridion tep idariorum, Argiope aurantia, Nephila clavipes,** and **Allepeira lemni cata** Walck. (**A. conferta** Htz.). This species is at home in all th habitats of its hosts, swamps, hammocks, hardwoods, oak-pine woods thickets, gullies, and open fields. It is abundant under bridges an in culverts; also on roadside embankments; in entrances of caves under eaves of houses, rural and urban; in ornamental shrubs. In Alabama it occurs on mountains above 1700 feet elevation. Season March to November.

MORHOLOGY. This species was previously known as **Conopistha trigonum** Htz. The specimens taken in south Mississippi are unusually large, dark, and silvery. It shares with **Rhomphaea** the ability to move the tip of the abdomen. In the web it resembles angular seeds and scales of pine buds. Size: Female, 3.0 mm.

16. **Conopistha nephilae** (Taczanowski). Plate II, figure 5.

Argyrodes nephilae Taczanowski, Horae Soc. Ent. Ross., 1872, **9**: 51. **Conopistha nephilae**, Bryant, Bull. Mus. Comp. Zool., 1942, **89** (7): 339-340, figs. 15, 26.

DISTRIBUTION. Baldwin: Bay Minette, male, female, August 30, 1939; Cherokee: May's Gulf, female, September 14, 1940; Chilton: 4 miles N. of Jemison, male, female, July 17, 1946; Coosa: Hatchet Creek, females, September 8, 1940; Covington: Andalusia, females, male, August 1939; Dale: Ariton, females, July 1939; Pea River Project, females, 1940; Hale.: Harrison, immature; Houston: Big Creek, females, male, August 1939; Omussee Creek, female, September 1, 1940; Lawrence: Town Creek, female, May 25, 1941; Lee: Auburn, immatures; Madison: Monte Sano, females, males, September 1939, Henson and Archer; Keel Mountain, immatures, 1946; Mobile: Union Church, male, female, August 30, 1939; Montgomery: Mount Meigs; females, males, August 18, 1946; Pike: Troy, male, September 26, 1939; Tuscaloosa: Tuscaloosa, females, males, August 5, 1939. Although missing from some well investigated localities this species seems to be nearly state wide.

ECOLOGY. Although sometimes found in webs of **Agelena**, this species seems to have an especial partially for the webs of Argiopidae (orb-weavers), and has especially been noted living with **Allepeira lemniscata**, **Aranea raji**, **Neoscona domiciliorum**, **N. sacra** Walck. **(benjamina)**, **Neosconella pegnia**, **N. thaddeus**, **Nephila clavipes**. On Monte Sano it has been found in the webs of **Aranea cavatica** located at the entrances of caves and in undercuts of very tall ledges. Because of the great variety of host spiders **Conopistha nephilae** lives under all types of condition such as swamp woods, palmetto swamps, live-oak hammocks, sandy hammocks, rich hardwood cover, oak-pine woods, longleaf-pine savannas, beach shrubs, and thickets in open fields. This species ranks with **Conopistha rufa** and **C. partita** in being an abundant and widespread theridiid. Whenever occurring in a large web in abundance it resembles drops of quicksilver. It ranges from sea shores to mountain tops in the Cumberlands. Season: Females, May to September; males, July to September.

MORPHOLOGY. An examination of available specimens fro Alabama, Tennessee, Mississippi, and Georgia shows that this speci is actually **Conopistha nephilae** and not **C. cambridgei.** This is show by examining the figures in Bryant's "Notes on the Spiders of t Virgin Islands" (see bibliography above). Although there seems be strong resemblance between the male palpus of this species a that of **C. argyrodes** (Walck.) of the Old World, it is not yet cle whether or not these two are elements of a holotropical species. T type locality of Walckenaer's **argyrodes** needs to be fixed in ord that we may have a nomenclatorial basis to start with. Length: F male about 3.1 mm.; male about 2.5 mm.

17. **Conopistha globosa** (Keyserling). Plate I, figure 3, Plate figure 6.

Argyrodes globosus Keyserling, Spinnen Amer., Ther., 1884, 204. Pl. 9, fig. 123.

DISTRIBUTION. Covington: Andalusia, male, August 1939; Da South of Ariton, immatures; Houston: Chattahoochee State Park, ma female, October 18, 1939; Big Creek, females, males, September 19 Lee: Chewacla Creek State Park, immature female, March 1940. Ma Hilton, Early County, Georgia, September 1, 1940.

ECOLOGY. Taken from webs of **Argiopidae,** especially **Argi aurantia, Nephila clavipes,** and **Neoscona domiciliorum.** This spec was very abundant in large webs in late December 1940 at Ro Palm State Park, Dade County, Florida. It occurs in various types plant communities along with its host species, chiefly in swamp woo liveoak hammocks, sandy hammocks, beech-magnolia woods, bee maple woods, and generally where Spanish moss occurs. It is fou in thickets in open fields in south Alabama. Season: August October.

18. **Conopistha partita** (Walckenaer).

Theridion partitum Walckenaer, Hist. Nat. Ins. Apt., 1841, **2:** 3 **Theridion cancellatum** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6:** 2 pl. 9, figs. 17, 18.

DISTRIBUTION. Baldwin: Gulf State Park, males, August 23- 1940; Black Warrior National Forest (Winston), females, males, J 1939; Butler: Fort Dale, females, males, May 26, 1940, July 4, 19 Chilton: 4 miles N. of Jemison, immatures; Coosa: Hatchet Creek, male, June 1940; Covington: Andalusia, females, male, August 19

Dale: South of Ariton, females, males, July 1939; Hale: Arcola, females, males, May 22, 1941; Houston: Dothan, females, males, August 31, 1940; Lee: East of Opelika, male, July 9, 1940; Madison: Keel Mountain, females, July 22-25, 1946, Jones and Archer; Mobile: Dauphin Island, male, June 26, 1940; Morgan: Lacon, females, male, July 15, 1946; Randolph: Cornhouse Creek, females, July 11, 1940; Tuscaloosa: Tuscaloosa, females, males, 1938-1941. Immatures taken in Montgomery, Alabama, and only once.

ECOLOGY. This species is most usually found in the webs of Agelenidae and of such Argiopidae as **Allepeira lemniscata, Argiope aurantia, Metepeira labyrinthea, Nephila clavipes,** and **Verrucosa arenata.** It is also in the webs of **Frontinella pyramitela.** Its forest cover is hammock woods, swamps, rich hardwoods (ravines), and oak-pine woods on slopes. It occurs in cave entrances in the webs of **Theridion tepidariorum** and a species of **Pholcus.** In some situations it is found in ornamentals in urban gardens, and under eaves of buildings. This little spider resembles pieces of plant debris and flakes of bark hanging in the webs of the host species. Season: May to August.

MORPHOLOGY. This species has been known previously as **Conopistha cancellata** Htz. Size: Female 2.5 mm.; male 3.0 mm.

Spintharus **Hentz,** 1850.

19. **Spintharus flavidus** Hentz.

Spintharus flavidus Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **4:** 284, pl. 10, fig. 8.

DISTRIBUTION. Baldwin: Hog Creek, female, November 7, 1940; Cheaha State Park, female, June 1939; Cherokee: May's Gulf, female, September 14, 1940; DeKalb: DeSoto State Park, females, September 15, 1940; Escambia, Brewton, female, 1939; Jefferson, Shade's Mountain, female, 1939; Hale: Moundville, female, August 1941; Houston: Dothan, female, August 1939; Madison: Monte Sano, females, summer 1939, Henson and Archer; Mobile: Mon Louis Island, female, January 9, 1941.

ECOLOGY. Found on the undersides of leaves on shrubs, particularly evergreen species and huckleberry and sparkleberry. Hammock woods; river-bluff magnolia woods; oak-hickory, beech, oak-pine woods. This species occurs on mountain summits (over 1700

feet elevation), dry open slopes, and in rocky ravines. Season: Fe
males, January to December, males, December (south Florida). Th
species occasionally occurs at great heights in trees. Its prey a
winged insects.

MORPHOLOGY. This species is slender, and of very different ap
pearance from **Conopistha** and **Rhomphaea**. Size: Female, 4.0 mm.

Subfamily Theridiinae.

Key to genera

1. Lateral eyes of each side widely separated. Abdomen flattene
dorso-ventrally, wide behind and truncated ..... **Episinus**, p. 3

1. Lateral eyes contiguous or nearly so. Abdomen otherwise, an
of various types. (2)

2. Abdomen having a caudal or dorso-apical cone, hump or pr
truberance. (3)

3. Abdomen with movable spines situated on a dorso-apical hump
..... **Meotipa** (not in Alabam

3. Abdomen without movable spines on dorso-apical region of a
domen; dorso-apical or caudal cone of various types. (4)

4. Dorso-apical or caudal cone more or less narrow. (5)

5. Sternum terminating in a broad lobe between hind coxae. Co
on abdomen caudal, overhanging spinnerets. Anterior median eye
of male carried forward on a lobe. ..... **Achaea** (not in Alabam

5. Sternum pointed or rounded behind. Cone on abdomen hig
dorso-apical, small, not overhanging spinnerets. Anterior media
eyes of male not carried forward on a lobe.....
..... **Theridion** (subgenus **Cryptachae**

4. Females having a rounded caudal cone overhanging spinneret
Distinguished from all other genera in being coral red with yello
stripes..... **Chrysso**, p.

2. Abdomen of various shapes, but lacking a dorso-apical or caud
cone, hump, or protruberance. (6)

6. Anterior median eyes larger than posterior median eyes an
much wider apart. Abdomen pointed behind..... **Euryopis**, p.

6. Anterior median eyes rarely larger than posterior median eyes, or if larger (as in **Chrysso**) not wider apart than posterior median eyes. (7)

7. Sternum ending in a broad lobe extending beyond hind coxae ... **Chrysso** (males), p. 55

7. Sternum pointed, rounded, or truncate behind. Hind coxae either approximated or separated by end of sternum. (8)

8. Abdomen nearly black, but possessing a white spot above the spinnerets; having many long hairs each from a corneous point (of same color as abdomen) ... **Stemmops**, p. 55

8. Abdomen of varied color patterns but lacking a conspicious white spot above spinnerets; abdominal hairs not arising from corneous points. (9)

9. Species in which the males are much smaller than the females, and which possess only one palpus. Epigynum of female in form of a cone. Abdomen always very high ... **Tidarren**, p. 33

9. Males approximating and in some cases exceeding the length of the female. Epigynum various, in form of chitinous plates, humps, or bosses, but never a cone. Abdomen various, sometimes high. (10)

10. Abdomen of female wider than long; having pair of lateral spines, horns, or humps, one on each side, and sometimes a posterior median horn. Tibia of male palpus very reduced, almost hidden by terminal joint ... **Theridula**, p. 52

10. Abdomen of females not wider than long; lacking all lateral protrusions, although a dorso-apical one may be present. Tibia of male palpus of normal proportions. (11)

11. Coxae conical, convex, projecting inwards over edge of sternum. Colulus represented by two bristles on minute tubercle ... **Anelosimus**, p. 54

11. Coxae rounded off, not projecting inwards over edge of sternum. No bristles present in area of spinnerets. (12)

12. Epigynum a heavily chitinized boss with openings anteriorly placed. Tip of cymbium of male palpus acute, prolonged, horn-like ... **Heintziectypus**, p. 51

12. Epigynum not a chitinized boss, but with openings either hidden or else ventrally or posteriorly placed. Tip of cymbium of male palpus rounded, not acute or prolonged ... **Theridion**, p. 34

Episinus **Latreille**, 1809.

20. **Episinus amoenus** Banks.

Episinus amoenus Banks, Proc. Ac. Nat. Sci. Philad., 1911, **63**: 44

DISTRIBUTION. Baldwin: Hog Creek, immature male, 194 Black Warrior National Forest, female, June 1939; Clarke: 3 miles N of Grove Hill, immature female; Coosa: Hatchet Creek, females, Jun 1940; Tuscaloosa: Alberta City, female, June 5, 1941.

ECOLOGY. Taken from leaves on evergreen shrubs; webs i leaf litter, especially next to logs; sweepings from switch can **(Arundinaria tecta)**. This species occurs in swamps, hammocks, ri hardwood slopes, and hardwood-pine timber on slopes. **Episinu amoenus** preys on ants.

MORPHOLOGY. This species has been listed as **E. truncatus** Lat in some state lists, but is quite distinct from the latter, a Europea spider. Size: Female, 3.5 mm.

Euryopis **Menge**, 1868.

21. **Euryopis limbata** (Walckenaer).

Epeira limbata Walckenaer, Hist. Nat. Ins. Apt., 1841, **2**: 8 **Theridion funebre** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6**: 27 Pl. 9, fig. 11.

DISTRIBUTION. Coosa: Hatchet Creek, females, June 194 Jackson: Clear Creek, Trenton, male, June 1940.

ECOLOGY. Females found on under surfaces of leaves o maples and chinaberry; male found on limb of red cedar. Th habitats of this spider are hardwood belts, rather weedy, lying be tween creek banks and corn fields, as well as in oldfield pine an thickets along dry stream beds in open country. On one occasion female was found feeding on a large carpenter ant, **Camponot pylartes fraxinicola** R. Smith. Hentz found a female wanderin abroad in October. Season: June to October.

MORPHOLOGY. This species has formerly been known a **Euryopis funebris** Htz. Size: Female, 3.0 mm.

Tidarren **Chamberlin & Ivie**, 1934.

22. **Tidarren minor** Chamberlin & Ivie.

Tidarren minor Chamberlin & Ivie, Bull. Univ. Utah, 1934, **24** (4): 10, pl. 2, fig. 10, pl. 3, figs. 24-25.

DISTRIBUTION. Baldwin: Gulf State Park, females, August 23-25, 1940; Mobile: Dauphin Island, female, June 26, 1940; Montgomery: Montgomery, females, July 1940. Female, 2 miles E. of Beechwood, Warren County, Mississippi, June 12, 1941.

ECOLOGY. Webs having tent-like nest composed of trash and plant debris into which pear-shaped egg-sacs are woven; located in tree scars and in crotches of limbs, liveoak hammocks. Webs under eaves of buildings and under tables in picnic area of park, Gulf Coast. Common in box and other tall shrubs of hedges surrounding urban gardens. This species is smaller and brighter colored than **T. sisyphoides** (q. v.).

23. **Tidarren sisyphoides** (Walckenaer).

Theridion sisyphoides Walckenaer, Hist. Nat. Ins. Apt., 1841, **2**: 321. **Theridion fordum** Keyserling, Spinnen Amer., Ther., 1884, **1**: 23, Pl. I, fig. 9.

DISTRIBUTION. Baldwin: Dyas Creek, female, June 25, 1940; Gulf State Park, male, August 25, 1940; Black Warrior National Forest (Lawrence and Winston counties), female, June 1939; Cherokee: May's Gulf, female, September 14, 1940; Chilton: Verbena, female, 1938; Colbert: Georgetown Landing, females, September 21, 1940; Coosa: Hatchet Creek, females, September 8, 1940; Covington: Andalusia, females, August 1939; Dale: Pea River Project, females, summer 1940; Dallas: Soapstone Creek, female, March 14, 1941; Coffee Creek, female, March 1941; Elmore: Wetumpka, female, July 6, 1940; Hale: Moundville, females, August 1941; Lee: Opelika, male, female, July 9, 1940; Chewacla Creek State Park, male, March 3-5, 1940; Lowndes: 4 miles E. of Fort Deposit, female, July 16, 1940; Madison: Monte Sano, females, summer 1939, B. Henson; Shelta Cavern, female, September 28, 1940; Mobile: Chickasaw Bogue, female, November 6, 1940; Satsuma, females, November 6, 1940; Spring Hill, female, November 5, 1940; Mon Louis Island, female, January 9, 1941; Monroe: Randon's Creek, female, October 19, 1941; Montgomery: Mount Meigs, August 1946; Pickens: Aliceville, female, 1939; Randolph: Cornhouse Creek, females, July 11, 1940; Tuscaloosa: Tuscaloosa, females, male, August 1941.

ECOLOGY. Webs and thimble-shaped tents of plant trash e
actly like those of previous species; pear-shaped egg-sacs tawny
color, quite like those of **Theridion tepidariorum** (q. v.). Webs l
cated in scars of trees, loblolly, longleaf, shortleaf pines, and li
oaks; in branches of trees; between roots of beech trees. This spid
occurs in swamp woods, palmetto swamps, hammocks, rich har
woods, oak-hickory, mixed deciduous-coniferous woods, and longle
pines. Common in undercuts of ledges, and also found inside
cave entrances. **Tidarren sisyphiodes** is abundant under bridges
company with **Theridion tepidariorum**, and competes with it for loc
tions inside of buildings especially unused ones, sheds and garages.
south Alabama it is found under eaves of buildings and in porche
This species preys on large insects, but seems to ignore most of th
mosquitoes that rest on its web during the daytime in dark situation

MORPHOLOGY. This species has been known as **Tidarre**
fordum Keys. The females are remarkably similar to **Theridio**
tepidariorum in superficial appearance, but the color pattern is qui
distinct. The tent building habit also contrasts with the latter specie
and the minute male is very different from males of **Theridion** (se
the key for Theridiinae). Chamberlin and Ivie in Spiders of th
Georgia Region, pages 47-48 refer to **Theridion ansatum** Walckena
as being the same species as **Theridion catapetraeum** Gertsch
Archer (q. v.). Abbot's drawing cited there is clear enough so tha
it is evident that **ansatum** is actually **Tidarren sisyphoides**, in fact
partly grown female of very characteristic pattern. Size: Female, 6
mm. (at least one-fourth inch in length).

Theridion **Walckenaer**, 1805.

This is a large genus having a very wide distribution. The genu
is variable, and there are many gradations in the different character
Because of this it seems desirable to arrange the species occurring
Alabama in well defined sections or better still subgenera. In usin
subgeneric names in this paper it is intended that certain striki
and consistent differences may thereby receive definite emphasi
Upon analysis of **Theridion** it turns out that morphological differenc
between groups of species are correlated with differences in we
habits, egg-sacs, and the method of brooding the egg-sacs. The sub
genera that are contained in the following key apply only to group
that occur in Alabama. However, references will be made to specie
occurring in other regions under some of the subgenera.

Key to subgenera of Theridion (with addition of **Hentziectypus**)

1. Abdomen having a small dorso-apical cone or protruberance_____ Subgenus **Cryptachaea**, p. 36

1. Abdomen lacking dorso-apical cone or protruberance. (2)

2. Abdomen of female flattened behind, the flattened area bordered by a rim (somewhat obliterated in gravid specimens), highest at apex overhanging the spinnerets which are anterior to highest point. Epigynum a raised, chitinous boss with openings anterior. Male palpus having tip of cymbium acute, and end of genital bulb acute, thus forming a two-horned structure_____ (inserted for comparative purposes) Genus **Hentziectypus**, p. 51

2. Abdomen of female otherwise, of various shapes, but highest at base, and spinnerets posterior to highest point. Epigynum not a chitinous boss, but a plate; openings posterior, hidden, or ventral, sometimes with anterior rim. Male palpus not a two-horned structure. (3)

3. First pair of legs extremely long, more than twice and sometimes three times the length of the carapace and abdomen taken together. (4)

4. Abdomen brightly colored with yellow or chalky white, with or without crimson lines; with or without black markings; surface of abdomen hairless on dorsum, or nearly so; dorsal cuticle having fine straight lines over the fat-bodies beneath, which themselves have a smooth, continuous, unbroken surface. Genital bulb of male palpus filling cavity_____ Subgenus **Theridion**, p. 40

4. Abdomen otherwise, of varied patterns, surface pronouncedly hirsute, or if hairless, not smooth, but pebbly and with fat-bodies broken up into a mosaic pattern. Genital bulb of male palpus not filling cavity, but having a pronounced tip. (5)

5. Abdomen very hirsute. The long legs rather stout. Female epigynum with large ventral openings. Relatively large spiders 4 mm. and up to 6 mm. in length_____ Subgenus **Parasteatoda**, p. 38

5. Abdomen with dorsum slightly or not at all hirsute. Long legs very slender. Openings of epigynum more or less hidden. Small spiders less than 3.5 mm. in length_____ Subgenus **Allotheridion** (**T. lyricum, T. flavonotatum**)

3. First pair of legs usually not even as much as twice the length of the carapace and abdomen taken together. (6)

6. Abdomen of female uniformly greyish white or occasionally orange except for mid dorsal spot (sometimes lacking) and a black ring more or less surrounding the spinnerets. Male palpus having a chitinous truncate ribbon that supports tip of embolus.....Subgenus **Tholocco,** p. 49

6. Abdomen of female otherwise, of varied patterns. Male palpus having tip of embolus joining at right angles with, convergent with, or even coiling around an irregularly shaped chitinous piece.....Subgenus **Allotheridion,** p. 41

Subgenus **Cryptachaea, new**

This subgenus has already been described in the key, and constitutes a group in which there is a small cone on the abdomen. This cone becomes reduced to a small irregularity in gravid females of some specias (**Theridion rupicola, T. catapetraeum**). This group of spiders resembles the genus **Tidarren** very much in that it makes a tent-like nest in which the spider hides dorsum downwards. It differs from **Tidarren** in that the egg-sacs are disc-shaped instead of being pear-shaped. The egg-sacs are placed inside of the nest which is composed of fine plant debris, specks of rotten wood, arthropod pellets, snail dung, and grains of sand. No other subgenus of **Theridion** is known to make this sort of nest nor are the egg-sacs of the same shape. Not only does **Cryptachaea** contain the species listed below, but also some Mexican species, and a species or two in California. Typical species: **Theridion catapetraeum** G. & A.

24. **Theridion serenoae** Gertsch & Archer.

Theridion serenoae Gertsch & Archer, Amer. Mus. Novit., 1942, No. 1171: 10, figs. 27, 28.

DISTRIBUTION. Baldwin: Gulf State Park, male, females, August 23-25, 1940; Mobile: Dauphin Island, July 29, 1940.

ECOLOGY. Webs and trash nests on axils of palmettoes; in scars of trees. Liveoak hammocks; palmetto understory of slash pine forests; in palmettoes along beaches. This species occurs close to the Gulf of Mexico. It is brighter in color than our other species of **Cryptachaea,** and therefore reminiscent of a species found in Monterey County, California, 1945. Size: Female, 2.2 mm.; male, 1.6 mm.

25. **Theridion catapetraeum** Gertsch & Archer, Plate I, figure 1.

Theridion catapetraeum Gertsch & Archer, Amer. Mus. Novit., 1942, No. 1171: 10-11, fig. 7.

DISTRIBUTION. Conecuh: Evergreen, females, March 19, 1941; Dallas: Soapstone Creek, female, March 14, 1941; Montgomery: Montgomery, female, spring 1940; Tuscaloosa: Tuscaloosa, females, male, July 1941, October 12, 1941.

ECOLOGY. Trash nest, tent-like, and having many white egg-sacs placed in it; web an irregular cob web always located under objects. Found a few times under loose rocks in rocky woods, or else under logs, chestnut-oakwoods, beech woods, oak-pine woods, pine woods, and in Miami pinelands in lower Florida. Most common under cement blocks, loose bricks, in rubbish piles, all in open fields, rural and urban cemeteries; in urban walls and in rock gardens. This spider lives under bridges and also in country privies and mosquito catching stations in open situations.

MORPHOLOGY. This species resembles **T. rupicola** in size and coloration, but is distinct as to genitalia. Size: Female, 2.5 mm.

26. **Theridion rupicola** Emerton.

Theridion rupicola Emerton, Trans. Conn. Ac. Sci., 1882, **6**: 14, pl. 2, figs. 2-2c.

DISTRIBUTION. Black Warrior National Forest, females, male, June 1939; Colbert: Gallymore Hollow, Maud, females, September 20, 1940; DeKalb: 2 miles SW of Collinsville, female, September 13, 1940; Jackson: Clear Creek, Trenton, males, females, June 1940, Jones and Archer; Madison: Monte Sano, females, 1939: Rowe's Mountain, female, September 28, 1940; Buford Cave, Brownsboro, female, May 1946; Moore Cave, Chestnut Knob, females, July 19-20, 1946, W. B. Jones; Keel Mountain, females, Jones and Archer; Marion: North Fork Creek, female, February 14, 1941; Marshall: Cave Ms4, Honeycomb School, immature, January 1939.

ECOLOGY. Egg-sacs, white, grey, or brown (depending on age) inside of tent-like nests. In undercuts of ledges; under loose slabs over fissures; under limestone blocks at bottoms of sink holes; in talus slides; in cave entrances. This spider occurs in rich deciduous woods of the chestnut oak-tulip poplar type, or of the oak-hickory type found on rocky slopes of hills and mountains in the northern part of

the state. It is common in piles of rocks in open fields, and in walls at edges of fields or around farm houses. It occurs above 1700 feet elevation as well as in lower levels. Season: February to September.

Subgenus **Parasteatoda**, new

This subgenus, as far as can be determined here, comprises spiders, fairly large for the genus **Theridion**, with rather stout legs sometimes three times the length of the abdomen and carapace together. Our largest species of **Theridion** belongs to this group. Although a vague tent-like structure of silk can sometimes be seen in the webs of partly grown females, there is actually no tent made. Occasionally dead leaves that have fallen into the web of **T. tepidariorum** are used as a sort of hiding place for the spider. This subgenus differs from all others described in this paper in that the egg-sacs are pear-shaped like those of **Tidarren**, but unlike that genus they are placed freely in the web. The lack of a nest is another habit wherein it differs from **Tidarren**. Typical species: **Theridion tepidariorum** C. Koch.

27. **Theridion redemptum** Gertsch & Mulaik.

Theridion redemptum Gertsch & Mulaik, Amer. Mus. Novit., 1936 no. 863: 13-14, figs. 14-15.

DISTRIBUTION. Calhoun: Lady Cave, N. of Anniston, female June 5, 1940; Colbert: Spring Cave, Maud, female, September 25 1940, W. B. Jones; Dickey Cave, Maud, females, September 25, 1940 Jones and Archer; DeKalb: 2 miles SW of Collinsville, females, September 13, 1940; Jackson: Clear Creek, Trenton, females, June 1940 McFarlen Spring Cave, Garth, immatures, W. B. Jones, February 1940 Lawrence: Black Warrior National Forest, females, male, June 1939 Madison: Rowe's Mountain, female, July 29, 1940; Buford Cave Brownsboro, May 1946. This species has not been found in the southern part of the state, but nevertheless it has been taken in southwestern Mississippi and in Grant Parish, Louisiana.

ECOLOGY. More or less pear-shaped egg-sacs in webs which are often subterranean. Occasionally in undercuts of ledges in shady valleys. Usually under rocks in talus or on rocky ground. Under ledges in limestone and sandstone caves. In fissures of steep, high ledges. Inside of sheds and privies, especially in the Coastal Plain. This species has also been taken under rocks in rock piles in open fields.

28. **Theridion tepidariorum** C. Koch.

Theridion tepidariorum C. Koch, Die Arachniden, 1841, **8:** 75, figs. 647-648. **Theridion vulgare** Hentz, Jour. Bost. Soc. Nat. Hist., 1850, **6:** 271, pl. 9, fig. 1.

DISTRIBUTION. Statewide. Counties cited from which records and specimens taken. Baldwin (male, Gulf State Park); Choctaw; Coosa; Dallas; Houston; Jackson (male, Garth); Lauderdale; Lee; Madison (males, Monte Sano; numerous caves on Keel Mountain); Marshall (Cave Ms6); Mobile; Montgomery; Morgan (males, Decatur and Flint Creek; Cave Spring Cave; Trinity Cave; Sans Souci Cave); Tuscaloosa (male, Tuscaloosa). This species is found in every city and town in the state.

ECOLOGY. The most usual habitats of this species are inside and outside of buildings, dwelling houses, sheds, and privies. It is a common and characteristic species in barns and stables. It is probably not as abundant inside of houses in Alabama as is the pholcid species, **Pholcus phalangioides** Fuessl. Other characteristic habitats are: Undersides of highway bridges; culverts; installations and buildings of sewage disposal plants; walls of concrete wells. Away from man and in wild situations this spider is largely absent except for entrances and inner chambers of caves; dry ledges of river bluffs; dry ledges of mountain summits. This species is common on roadside cut-offs, and seems to intrdue into the forest only in privies and mosquito catching stations. The pear-shaped light brown egg-sacs are hung freely in the web, and a single female may produce many of these during a year. The large cob webs are located inside the shelter of buildings, under eaves, porches overhangs of ledges and walls, or anywhere that overhead shelter is available, and occasionally shade trees serve the purpose in towns. Young spiders have a tendency to place the webs in exposed situations, such as the crotches of limbs of ornamental shrubs. Wherever **T. tepidariorum** is common, species of **Mimetus** that prey on it are always lurking around. These mimetid spiders kill **tepidariorum** with considerable ease, despite the fact that the latter will try to defend itself by entangling the enemy in sheets of viscid silk. Actually **T. tepidariorum** traps large insects, including the cychrine beetle, **Sphaerodderus lecontei** Dej., and large spiders that blunder into its web. In fact scorpions have been found to be prey of this species. However, mosquitoes rest on its web with impunity, at least as long as the spider is well fed.

MORPHOLOGY. Size: Female 6 mm.

Subgenus **Theridion** Walckenaer, 1805

The spiders of this group of **Theridion** (also called **Phyllonethis Thorell**, 1870) are peculiar, having very long, slender legs, bright yellow, white, crimson, or black markings, and a very smooth abdomen. They differ from the subgenus **Cryptachaea** in that they make no trash filled nest, and from this subgenus and **Parasteatoda** as well in that the egg-sacs are globular. It also differs from the subgenus **Allotheridion** (q. v.)in that the egg-sacs are apparently always stationary and fastened in the web instead of being brooded by the expedient of being carried between the hind legs. The small webs are well developed, and are always fastened to the under surface of leaves of trees, and shrubs. Aside from the species listed below the following species are also known to belong to this subgenus: **Theridion cabriolatum** Frang. (Cuba), **T. virginum** Bryant (Virgin Islands), **T. californicum** Banks (California), **T. lineatum** Thor. (Europe).

29. **Theridion frondeum** Hentz, Plate I, figure 2.

Theridion frondeum Hentz, Journ. Bost. Soc. Nat. Hist., 1850, 6: 274, pl. 9, fig. 7.

DISTRIBUTION. Tuscaloosa: Tuscaloosa, females, August 1939. NEOTYPES.

ECOLOGY. Webs on under surfaces of leaves of shrubs, various vines including poison oak (**Toxicodendron radicans**), and switch cane in beech-maple ravines, oak-pine woods, and in power-line rights-of-way, ravines above river bottoms. This species is also found on laurel and privet in urban gardens.

MORPHOLOGY. This species is about the same size as the other two species in Alabama, but differs from **T. albidum** in being bright yellow, and in having black markings on the abdomen. Its pattern is quite variable. Size: Female, 4.0 mm.; leg I, 9.0-10.0 mm.

30. **Theridion pictipes** Keyserling.

Theridion pictipes Keyserling, Spinnen Amer., Ther., 1884, 1: 64, pl. 3, fig. 38.

DISTRIBUTION. Black Warrior National Forest, females, June 1939; Hale: Moundville, females, 1939; Houston: Big Creek, females, August 1939; Lee: East of Opelika, male, July 9, 1940; Morgan: Lacon,

female, July 15, 1946; Tuscaloosa: Tuscaloosa, females, males, August 1939, August 5, 1941.

ECOLOGY. Webs fastened to undersides of leaves of dogwood, stinking bay (**Illicium floridanum**), mountain laurel, and various evergreen shrubs, switch cane, bay (**Magnolia glauca**), and vines. This species occurs in hammocks, beech-maple woods, rich hardwoods on slopes and in ravines, oak-hickory and oak-pine woods. Season: June to August.

31. **Theridion albidum** Banks.

Theridion albidum Banks, Journ. N. Y. Entom. Soc., 1895, **3**: 84.

DISTRIBUTION. Black Warrior National Forest, male, June 1939; Cullman: Cullman, female, October 4, 1940; Madison: Monte Sano, females, June 1939; Montgomery: Montgomery, male, female, spring 1939; Randolph: Cornhouse Creek, male, July 11, 1940; Russell: Fort Mitchell, female, July 10, 1940.

ECOLOGY. Webs on undersides of leaves dogwood, laurel, and other shrubs, rich deciduous hardwoods, beech-magnolia woods, oak-hickory woods. On tall ornamentals in urban gardens. This species has conspicuous white markings on the abdomen. Season: June to October. The female remains with the egg-sac until after the young have hatched out.

Subgenus **Allotheridion**, new

The species contained in this subgenus generally have legs of only moderate length and hirsute abdomens (the exceptions to both of these features are **T. flavonotatum** and **T. lyricum**), and, moreover, unlike **Theridion** the surface of the abdomen is rather irregular. **Allotheridion** differs from subgenus **Tholocco** (q. v.) in the male palpus. In one section of **Allotheridion** represented by **Theridion differens** the embolus of the palpus is very long and frequently coiled. **Allotheridion** in general comprises species in which the females brood the globular egg-sacs by carrying them between the hind legs, a feature not known for any other subgenus of **Theridion**, except perhaps **Tholocco**. (Some spiders of a related family do this same thing.) The egg-sacs are very light colored at first, but later turn brown after they have been fixed in the web. The female fixes the egg-sacs some time prior to abandoning the very small webs. Typical species: **Theridion murarium** Em.

32. **Theridion flavonotatum** Becker.

Theridion flavonotatum Becker, Ann. Soc. Ent. Belg., 1879, **22**: 79, pl. 7, figs. 7-9. **Theridion floridense** Banks, Proc. Ac. Nat. Sci. Philad., 1904, **56**: 125. **Theridion lyra?** Keyserling, Spinnen Amer., Ther., 1884, **1**: 50, pl. 2, fig. 28, **nec** Hentz, 1850.

DISTRIBUTION. Black Warrior National Forest, female, June 1939; Autauga: McQueen, females, July 14, 1940; Baldwin: Gulf State Park, females, male, August 23-25, 1940; Cheaha State Park (Clay), female, June 1940; Clarke: Grove Hill, male, female, April 11, 1940; Pigeon Creek, female, April 10, 1940; Coosa: Hatchet Creek, females, males, June 1940; Dale: Pea River Project, females, males, summer 1940; Hale: Moundville, female, August 1941; Lawrence: Town Creek, female, May 25, 1941; Lee: East of Opelika, female, July 9, 1940; Chewacla Creek State Park, females, male, April 3-5, 1940; Lowndes: 4 miles E. of Fort Deposit, male, female, July 16, 1940; Macon: Uphapee Creek, male, September 1940; Mobile: Chickasaw Bogue, females, November 6, 1940; Monroe: Randon's Creek, male, female, April 11, 1940; Morgan: Cave Spring Cave, May 26, 1941; Tuscaloosa: Tuscaloosa, females, male, July 1939; August 1946; Alberta City, male, female, June 5, 1941; Rock Mountain, female, April 1940; Wilcox: Bear Creek, female, July 4, 1946. Statewide.

ECOLOGY. Webs placed on under surfaces of leaves of dogwood, hydrangea, huckleberry, and various evergreen shrubs; also placed in forks or limbs of such shrubs as dogwood and hydrangea. This species occurs in ravines and on slopes in rich hardwoods, beech-maple, beech-magnolia, hammocks, oak-hickory, oak-pine, and longleaf pine as well as in swamp forests. It is a characteristic species on grasses and shrubs in open fields. It is common on laurel and crepe myrtle in urban gardens. Occasionally this species occurs in mosquito catching stations and privies located in woods, but generally is absent from buildings. However, **T. flavonotatum** is one of the most abundant and universal of the Alabama Theridiidae. Its prey are small insects. On one occasion in Forrest County, Mississippi it was observed to have turned the tables on the cannibal spider **Mimetus.** One female was found along a trail under a leaf on mountain laurel feeding on **M. dissimulatus** Walck. (**M. interfector** Htz.). Season: Females, April to November, males, April to September.

MORPHOLOGY. This is a small species with long slender legs, of various colors and patterns on the abdomen which is quite devoid

of hairs on the dorsum. In gravid females it is short, high and wide with blunt humps on the shoulders, and a pebbly surface. Size: Female, 2.2 mm.; male, 1.6 mm.

33. **Theridion lyricum** Walckenaer.

Theridion lyricum Walckenaer, Hist. Nat. Ins. Apt., 1842, **2**: 288. **Theridion lyra** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6**: 279, pl. 9, fig. 21. **Theridion kentuckyense** Keyserling, Spinnen Amer., Ther., 1884, **1**: 78, pl. 4, fig. 47.

DISTRIBUTION. Autauga: McQueen, females, July 16, 1940; Baldwin: Fort Morgan, female, July 30, 1940; Bibb: Eoline, female, August 5, 1946; Chilton: Verbena, female, 1939; 4 miles N. of Jemison, female, July 17, 1946; Colbert: Wolf Den Cave, female, September 25, 1940; Coosa: Hatchet Creek, females, June 1940; Houston: Omussee Creek, female, September 1-2, 1940; Alaga, female, September 2, 1940; Jackson: Clear Creek, Trenton, female, June 1940; Lee: East of Opelika, female, 1939; Madison: Chestnut Knob, Big Cove, female, July 19, 1946; Monroe: Randon's Creek, male, April 11, 1940; Claiborne, female, April 11, 1940; Montgomery: Montgomery, male, 1940; Morgan: Trinity Mountain, May 24, 1941; Lacon, female, July 17, 1946; Tuscaloosa: Tuscaloosa, females, male, 1938; spring 1941; Alberta City, male, female, June 5, 1941; Wilcox: Bear Creek, female, July 4, 1946. Females, Upatoie Creek, Muscogee County, Georgia, July 10, 1940. Statewide.

ECOLOGY. Webs on undersides of leaves of yaupon, dogwood, mountain laurel, rhododenron, gallberry; also in forks of branches of shrubs. This species occurs in swamps, rich hardwoods, hammocks, beech-magnolia woods, evergreen-deciduous hardwoods, oak-hickory, oak-pine, on every type of situation from flat country to ravine slopes. It is found on tall grass in open fields, under bridges, and on limbs of **Paulownia tomentosa** in farmyards. It is frequent inside and outside of buildings, usually under overhangs of window sills, and is common in privies and in mosquito catching stations located in the woods. It occurs under the edges of the tops of walls around gardens in cities, and is characteristic under tables in picnic areas. This species just misses being as abundant as the previous species, **T. flavonotatum**, but is just as universal, and rather more addicted than the latter to living inside of buildings. Season: Females, April to October, males, April to July.

MORPHOLOGY. This species is usually known as **T. kentuckyense** Keys. It is another **Allotheridion** with long, slender legs like those of **T. flavonotatum,** but unlike the latter the abdomen of gravid females is not so elevated. The lyre-shaped markings on the abdomen are black and well defined. Size: Female, 3.0 mm.

34. **Theridion realisticum** Gertsch & Mulaik.

Theridion realisticum Gertsch & Mulaik, Amer. Mus. Novit., 1936, no. 863: 11-13, figs. 23-24.

DISTRIBUTION. Bullock: Union Springs, female, January 14, 1942. Male, Kisatchie National Forest, Grant Parish, Louisiana, June 1941.

ECOLOGY. Sweepings from evergreen shrubs and holly, beech-magnolia bluffs above a stream. Abdomen of this species and the one that follows, cordate, indented at the base.

35. **Theridion chinda** Chamberlin & Ivie.

Theridion chinda Chamberlin & Ivie, Bull. Univ. Utah, 1944, 35 (9): 49, figs. 82-84.

DISTRIBUTION. Montgomery: Montgomery, female, July 8, 1946.

ECOLOGY. Taken from on top of a leaf of crepe myrtle next to a garden wall, urban area. Size: Female, 1.7 mm.

36. **Theridion alabamense** Gertsch & Archer.

Theridion alabamense Gertsch & Archer, Amer. Mus. Novit., 1942, no. 1171: 4. **Theridion cinereum** Emerton, Trans. Conn. Ac. Sci., 1913, **18:** 212, pl. 1, fig. 2. (not **Theridium cinereum** Thorell, 1875.)

DISTRIBUTION. Lee: Auburn, male, April 12, 1941; Tuscaloosa: Tuscaloosa, females, male, May 1941.

ECOLOGY. Under tags of bark and in forks of limbs of hackberry; under loose bark on red cedars, mulberry, and pin oak. This species lives in cities in Alabama. In Louisiana it has been found in flat pine woods. Size: Female, 3.0-4.0 mm.

37. **Theridion punctosparsum** Emerton.

Theridium puncto-sparsum Emerton, Trans. Conn. Ac. Sci., 1882, **4**: 12, pl. 1, figs. 6-6a.

DISTRIBUTION. Black Warrior National Forest, females, June 1939; Jackson: Clear Creek, Trenton, female, male, June 1940; Madison: Eason Mountain, female, December 25, 1939; Monte Sano, females, December 1940; Morgan: Trinity Mountain, immature females, 1941; Randolph: Cornhouse Creek, female, July 11, 1940.

ECOLOGY. Webs under rotting logs on rich hardwood slopes. Common in indentations on the undersides of limestone slabs in red cedar thickets. Very common under rocks in open fields. Also found under slabs of rock in farm yards. Size: Female, 3.0 mm.

38. **Theridion arcadicum** Gertsch & Archer.

Theridion arcadicum Gertsch & Archer, Amer. Mus. Novit., 1942, no. 1171: 5-6, fig. 24.

DISTRIBUTION. Pike: Orion, female, January 25, 1942; Tuscaloosa: Tuscaloosa, female, May 1941.

ECOLOGY. Females found in webs sometimes with round white egg-sacs under loose rocks on lawns, in vacant lots, and in open fields; rural and urban. Under cardboard along roadsides and in vacant lots during the winter months.

MORPHOLOGY. This species is one of a group of **Allotheridion** characterized by legs of only medium length and round abdomens mostly very dark or nearly black. Size: Female, 1.8 mm.— leg I, 2.2 mm.

39. **Theridion indianorum** Gertsch & Archer.

Theridion indianorum Gertsch & Archer, Amer. Mus. Novit., 1942, no. 1171: 9-10, figs. 4-5.

DISTRIBUTION. Houston: Big Creek, female, spring 1940.

ECOLOGY. Sweepings from low vegetation in sandy hammock.

40. **Theridion australe** Banks.

Theridion australe Banks, Proc. Entom. Soc. Wash., 1899, **4**: 191.

DISTRIBUTION. Hale: Arcola, female, May 22, 1941.

ECOLOGY. Sweepings from grass in chalk prairie.

41. **Theridion expulsum** Gertsch & Mulaik.

Theridion expulsum Gertsch & Mulaik, Amer. Mus. Novit., 1936 no. 863: 9-10, figs. 16-17.

DISTRIBUTION. Dallas: Brown's Station, male, April 26, 1940.

ECOLOGY. Taken deep down in grass in a chalk prairie. A small brown species.

42. **Theridion dulcineum** Gertsch & Archer.

Theridion dulcineum Gertsch & Archer, Amer. Mus. Novit., 1942 no. 1171: 4, figs. 11-12, 17-18.

DISTRIBUTION. Lauderdale: Cypress Creek, females, male, September 1940.

TYPE LOCALITY.

ECOLOGY. Webs on dry, dead leaves of leaf litter, oak-hickory woods on slopes above a stream.

MORPHOLOGY. This is a very small, yellow species with a rounded abdomen. Size: Female, 1.1 mm.; male, 1.2 mm.; leg I of female, 1.4 mm.

43. **Theridion hobbsi** Gertsch & Archer.

Theridion hobbsi Gertsch & Archer, Amer. Mus. Novit., 1942, no. 1171: 5-6, fig. 6. **Theridion blatchleyi** Bryant, Proc. Conn. Ac. Sci. 1945, 36: 205-206, pl. 1, fig. 5.

DISTRIBUTION. Montgomery: Montgomery, female, January 1942.

ECOLOGY. Taken from an ornamental shrub in an urban garden. Size: Female, 4.5 mm. This species begins the series on whose abdomens is found a dorsal foliate or herringbone pattern. **Theridion blatchleyi** Bryant is the male of this species.

44. **Theridion differens** Emerton.

Theridium differens Emerton, Trans. Conn. Ac. Sci., 1882, **4**: 9, pl. 1, figs. 1-1d.

DISTRIBUTION. Cheaha State Park, females, June 1940; Coosa: Hatchet Creek, females, males, June 1940; Hale: Harrison, male, April 26, 1940; Madison: Keel Mountain, female, July 22, 1946; Mobile: Dauphin Island, females, 1939; June 1940; Montgomery: Montgomery, male, female, summer 1940; Morgan: Decatur, male, July 1940; female, May 1946; Pickens: Aliceville, female, 1939; Tuscaloosa: Yellow Creek, females, summer 1939.

ECOLOGY. Webs under leaves of dogwood, in shrubs, in branches of red cedar; rich hardwoods, oak-hickory, beech-magnolia woods, red cedar thickets, oak-pine woods; ravines, slopes, uplands. It occurs in grasses, weeds, thickets, and in occasional red cedars, all in open fields. Common on obelia, privet, box, laurel, and Russian olive, in urban gardens. It ranges from sea level to over 1400 feet elevation in the mountains. It is locally common, but is not so universal as **Theridion glaucescens** (**T. spirale**), which is closely related to it. Season: April to July.

MORPHOLOGY. Young females are prettily marked with white, red, grey, blue, and brown, but gravid females become lighter and paler in color. Size: Female, 3.0 mm.; male, 2.0 mm.

45. **Theridion glaucescens** Becker.

Theridion glaucescens Becker, Ann. Soc. Ent. Belg., 1879, **22**: 81 pl. 1, fig. 11. **Theridium spirale** Emerton, Trans. Conn. Ac. Sci., 1882, **6**: 10, pl. 1, fig. 2.

DISTRIBUTION. Baldwin: Gulf State Park, females, males, August 23-25, 1940; Jackson Oak, female, January 17, 1941; Calhoun: Eastaboga, female, summer 1939; Cherokee: May's Gulf, females, September 14, 1940; Dale: Pea River Project, females, summer 1940; Jackson: Clear Creek, Trenton, female, June 1940; Lauderdale: Cypress Creek, female, September 1940; Lawrence: Town Creek, females, males, May 25, 1941; Lee: Chewacla Creek State Park, females, males, April 3-4, 1940; Hale: Arcola, females, May 22, 1941; Cedarville, females, May 22, 1941; Limestone Creek, Sawyerville, male, May 22, 1941; Houston: Dothan, female, July 1939; Madison: Grayson's Spring, Keel Mountain, females, July 22-25, 1946; Mobile: Union Church, females, 1939; Dauphin Island, females, males, June 26, 1940; Monroe:

Claiborne, female, April 11, 1940; Montgomery: Montgomery, fe
males, July-August 1946; Morgan: Flint Creek, male, April 15, 1940
Cave Spring Cave, females, May 26, 1941; Tuscaloosa: Tuscaloosa
females, 1939; spring 1941.

ECOLOGY. Very small webs on under surfaces of leaves of beech, dogwood, ironwood, mountain laurel, live oak, huckleberry, gallberry, in leafy branches of red cedar; on axils of leaves of sycamore; on leaves of vines. This species occurs in swamp woods, hammocks, rich hardwoods, oak-hickory, evergreen-deciduous hardwoods, longleaf pine, red cedar glades and thickets; flat areas, slopes, ravines, tops of bluffs. It is found on old driftwood on beaches; between roots of trees; in grasses and cover crops, open and fallow fields. In cities it is very common on box hedges and on the leaves of such shade trees as the sycamore. It is as common on red cedar as is **Anelosimus textrix** (q. v.) This species is one of the commonest of the Theridiidae on the walls outside of and inside of buildings, houses, and garages. Because of its very small size and negligible web it is not noticeable as are the larger species, **Theridion tepidariorum** and **Teutana triangulosa.** In the manner of brooding the egg-sacs this species is typical of **Allotheridion.** After carrying it for a time the female fixes it in the web, and stands directly over it. Season: Females, January to September, males, April to August.

MORPHOLOGY. This species has been known as **Theridion spirale** Em. After examining an authentic specimen of **glaucescens** Dr. Gertsch found it to be the same thing as **spirale** (a name which must fall to it). It is probable that Hentz had this species, or else **differens, murarium,** or **hobbsi** before him when he drew, and described **Theridion blandum.** Gravid females such as the one he figured change color as well as the shape of the abdomen, and tend to suppress the foliate pattern in part. This is very evident in gravid **differens** and in gravid **glaucescens** (taken from sycamores). Since there is no way of knowing what the epigynum of Hentz' species looked like, it would be necessary to exercise an arbitrary judgment in fixing **blandum.** Size: Female, 3.0 mm.; male, 2.5 mm.

46. **Theridion murarium** Emerton.

Theridium murarium Emerton, Trans. Conn. Ac. Sci., 1882, 4: 11, pl. 1, figs. 5-5b.

DISTRIBUTION. Hale: Arcola, females, May 22, 1941; Mobile

Union Church, August 30, 1939; Montgomery: Montgomery, females, 1939; spring 1940; June 1946.

ECOLOGY. Webs on under surfaces of leaves of gallberry, longleaf pine woods. Webs up to six feet off the ground in crepe myrtle, under yucca leaves; under window ledges; urban gardens. This species is also found in ornamental shrubs on rural estates. Size: Female, 3.0-4.0 mm.

47. **Theridion pennsylvanicum** Emerton.

Theridion pennsylvanicum Emerton, Bull. Amer. Mus., 1913, **22**: 255-256, pl. 48, figs. 1-1c.

DISTRIBUTION. Baldwin: Dyas Creek, female, June 25, 1940; Lee: East of Opelika, females, July 9, 1940; Montgomery: Montgomery, female, summer 1940.

ECOLOGY. Webs on under surfaces of leaves of deciduous and evergreen shrubs. This species occurs in beech-magnolia woods, oak-pine, longleaf pine, and gum swamps. It is also found on roadside shrubs.

Subgenus **Tholocco**, new

This subgenus comprises species of very small spiders. It is peculiar in the uniform pale or orange color of the abdomen and the orange carapace. The abdomen is oval, covered with short hair, and with the base overhanging the carapace, but in gravid females it becomes very rounded. In one species, **T. liliputanum** Keys. (**T. unimaculatum** Em.), the sternum is truncate behind, while in **T. wallacei** G. & A. the leg formula is 4123 instead of 1423. In connection with **wallacei** Gertsch & Archer (1942) Chamberlin and Ivie in "Spiders of the Georgia Region" state that this species is probably identical with **Dipoena pallida** Emerton. This may well be true, and in that case **pallida** is not a **Dipoena** nor does it belong to any subfamily other than Theridiinae. However, granting the priority of **pallida**, it should be noted that the name is undesirable as it is preoccupied by **Theridion pallidum** Walck. (1837). Besides the species listed below for Alabama the following species belong in the subgenus **Tholocco: Theridion guanicae** Petr. (Puerto Rico, Virgin Islands), **T. maderae** G. & A. (Arizona), **T. wallacei** G. & A. (Florida, Georgia), **T. liliputanum** Keys. (Eastern U. S.). The species belonging to this subgenus gen-

erally occur on the ground or on low vegetation, and in dry areas live under rocks. Although much more evidence in regard to the brooding of the egg-sacs would be desirable, on one occasion a female of **T. amputatum** Keys. was found carrying a white round cocoon. If this is the usual habit, then **Tholocco** is exactly like **Allotheridion** in this respect, but it should be pointed out here that small species of Theridiidae as well as the Micryphantidae that live on the ground carry the egg-sacs for a period before fixing them on objects. Typical species: **Theridion amputatum** Keys.

48. **Theridion dividuum** Gertsch & Archer, Plate II, fig. 4.

Theridion dividuum Gertsch & Archer, Amer. Mus. Novit., 1942, no. 1171: 6-7, fig. 29.

DISTRIBUTION. Dale: Lake Tholocco, Pea River Project, male, summer 1940, HOLOTYPE; Hale: Arcola, female, May 22, 1941.

ECOLOGY. Taken from grass by sweeping; chalk prairies; open fields.

MORPHOLOGY. This is the only species known in which the abdomen is orange. The other species have an orange or ruddy carapace, but the abdomen is light grey. Size: Male, 1.3 mm.

49. **Theridion amputatum** Keyserling.

Theridion amputatum Keyserling, Spinnen Amer., Ther., 1884, 2: 90, pl. 4, fig. 58. **Theridion paradisiacum** Gertsch & Archer, Amer. Mus. Novit., 1942, no 1171: 11-12, figs. 32-34.

DISTRIBUTION. Clarke: Grove Hill, females, April 10, 1940; Coosa: Hatchet Creek, female, June 1940; Dallas: Brown's Station, male, April 26, 1940; Macon: Uphapee Creek, females, October 30, 1940; Mobile: Mon Louis Island, immature females, 1941; Tuscaloosa: Tuscaloosa, females, May 1941. Female, Centreville, Wilkinson County, Mississippi, spring 1944. Females, Kisatchie National Forest, Grant Parish, Louisiana, June 1941.

ECOLOGY. Small webs on dried leaves of leaf litter; webs among low ground plants and in patches of switch cane; hammocks; rich hardwoods in ravines; oak-pine flatwoods. Also found in grass on chalk prairies. Season: April to October.

MORPHOLOGY. This species has been confused with **T. liliputanum** Keys. (**T. unimaculatum** Em.), but actually replaces it in the Deep South. The Bishop and Crosby record from Okefenokee Swamp, Georgia (Journ. Elisha Mitchell Soc., 1926, 41: 183) is **T. amputatum.** Size: Female, 2.0 mm.; male, 1.7 mm.

Genus **Hentziectypus,** new

This genus is peculiar and different from **Theridion.** The genitalia of both sexes (see the key) are different from those found in **Theridion.** Although the abdomen of the male is not unusual, that of the female is different in that it is high apically, and the spinnerets are placed anteriorly. The egg-sacs (see Plate II, figure 2) are like those of no other known genus in that they are lozenge shaped and pointed at both ends. They are placed freely in the web. Typical species: **Hentziectypus globosus** (Htz.)

50. **Hentziectypus globosus** (Hentz), Plate II, figures 1, 2, 3.

Theridion globosum Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6:** 278, pl. 9, fig. 23. **Theridium globosum,** Emerton, Trans. Conn. Ac. Sci., 1882, **6:** 14, pl. 2, fig 3. **Theridion globosum,** Emerton, ibid., 1911, **16:** pl. 1, figs. 1-1b.

DISTRIBUTION. Baldwin: Dyas Creek, female, June 25, 1940; Fort Morgan, females, July 30, 1940; Black Warrior National Forest (Winston), female, June 1939; Bullock: Three Notch, female, August 1939; Butler: Fort Dale Cemetery, females, May 26, 1940; July 4, 1946; Clarke: Grove Hill, females, April 10, 1940; Thomasville, female, October 18, 1941; Coosa: Hatchet Creek, females, June 1940; Covington: Andalusia, immatures, 1939; Houston: Alaga, immatures; Jefferson: Warrior, female, May 28, 1941; Macon: Uphapee Creek, females, July 1940; Madison: Buford Cave, Brownsboro, female, May 1946; Chestnut Knob, Big Cove, female, July 20, 1946; Keel Mountain, females, July 22-25, 1946; Marshall: Honeycomb School, female, February 1939; Mobile: Dauphin Island, females, July 29, 1940; Montgomery: Montgomery, females, June 27, 1946; Morgan: Lacon, female, July 15, 1946; Tuscaloosa: Tuscaloosa, females, male, April-July, 1941; Holt, female, February 22, 1941. Female, Upatoie Creek, Muscogee County, Georgia, July 10, 1940; immature, Fort McPherson, Georgia, 1943. Females, Stone's River, S. of Shelbyville, Tennessee, July 1943; females, Cedars of Lebanon State Park, Wilson County, Tennessee, August 6, 1943.

ECOLOGY. Small, irregular, horizontal webs, often hung with 1, 3, or 5 cream-colored, lozenge-shaped egg-sacs, in curled leaves of leaf litter on level ground, or in depressions and leaf pockets, or at edges of logs; inside of tree stumps; next to ledges; hung between blades of grass at bases of red cedar and pine; in holes in live oak; in crotches of palmetto leaves. This species occurs in palmetto swamps, swamp woods, liveoak hammocks, sandy hammocks, rich hardwoods, oak-hickory, red cedar glades, oak-pine, longleaf pine woods, all in lowlands, on hills, ravines, and slopes. It places its webs on the face of vertical accumulations at the bottoms of wire fences in second-growth deciduous-coniferous woods. It is found next to rock fences in open fields. In urban areas its webs occur in the crotches of leaves of ornamental palms and century plants, in grass, among iris, on honeysuckle mats and English ivy; lawns, embankments, and gardens. This species is common and universal occurring in forests, open country, and in cities, from the sea shore to the foothills. Spiderlings hatch in August in Alabama. Spiders hibernate under stones and fallen bark. **Hentziectypus globosus** preys on all sorts of small insects including ants: **Crematogaster lineolata** Say in all situations, **C. laeviuscula** Mayr at the bases of pines along with the orb-weaver, **Colphepeira catawba** Bks., which does the same thing; the Argentine ant, **Iridomyrmex humilis** Mayr, in cities. Season: Females, February to October; males, June to August.

MORPHOLOGY. The females are peculiar in that the abdomen is very dark on the anterior portion, but light colored behind the elevated apex with a black spot in the middle of this area. In gravid females the flattened caudal portion of the abdomen becomes more convex, the rim bordering it tends to be suppressed, and the dark basal color becomes a medium brown. Size: Female, 1.6-2.0 mm.; height of abdomen, 1.5 hh.; male, 2.0 mm.

Theridula **Emerton,** 1882.

51. **Theridula sphaerula** (Hentz).

Theridion sphaerulum Hentz, Journ. Bost. Soc. Nat. Hist., 1850, 6: 279, pl. 9, fig. 22.

DISTRIBUTION. Chilton: 4 miles N. of Jemison, immature male, 1946; Limestone: Mount Roszell, immature female, 1940; Madison: Eason Mountain, immature female, December 1939; Shelby: Oak

Mountain State Park, male, female, July-August 1940. Female, Cedars of Lebanon State Park, Wilson County, Tennessee, August 6, 1943. Female, Atlanta, Georgia, July 25, 1943, H. Hoogstraal. Female, Centreville, Wilkinson County, Mississippi, July 1944.

ECOLOGY. Orbicular, white egg-sac in web on under surface of leaves of dogwood, blue ash (**Fraxinus quadrangulata**), and various shrubs; oak-hickory woods, red cedar glades, river bluffs, and oak-pine woods.

MORPHOLOGY. The white spot on the dorsum of the abdomen is characteristic of both sexes. There is some variation in the color pattern of the abdomen but as a general thing most of the specimens of females taken are pretty nearly black except for the dorsal spot. Some, but not all, females become paler on the dorsum, when gravid, but the humps on either side retain the black pigmentation. In young females the lateral humps start out as horns. The genitalia of this species are different from those of **T. opulenta** Walck. with which it has been confounded. In this genus the abdomen is wider than long, and the legs are quite short. Size: Female, 1.5 mm., abdomen, 1.5 mm. wide.

52. **Theridula ventillans** Keyserling.

Theridula ventillans Keyserling, Spinnen Amer., Ther., 1884, **1:** 84, pl. 4, fig. 53. **Theridula quadripunctata** Keyserling, ibid., 1886, **2:** 32, pl. 11, fig. 151.

DISTRIBUTION. Baldwin: Bay Minette, females, September 1939; Dyas Creek, females, June 25, 1940; Calhoun: Eastaboga, females, summer 1939; Cheaha State Park (Clay), female, male, June 1940; Chilton: Verbena, female, summer 1939; Coosa: Hatchet Creek, females, males, June 1940; Dale: Pea River Project, females, males, summer 1940; Escambia: Little River State Park, female, spring 1939; Houston: Big Creek, female, September 1939; Lee: Auburn, immatures; Lowndes: 4 miles E. of Fort Deposit, male, female, January 1941; Mobile: Union Church, females, summer 1939; Petit Bois Island, female, June 1939; Montgomery: Montgomery, females, summer 1940; Morgan: Decatur, immature female, 1939; Cave Spring Cave, male, May 26, 1941; Pickens: Aliceville, female, 1939; Tuscaloosa: Rock Mountain, female, April 1940; Tuscaloosa, females, male, spring 1941.

ECOLOGY. Small, round, creamy white egg-sac in a very tiny web on undersides of leaves of cucumber tree (**Magnolia macrophylla**), bull bay (**M. grandiflora**), dogwood, pin oak, white oak, chestnut oak, tyty, maple; also on leaves of gallberry, huckleberry, **Smilax rotundifolia**, and on blades of grasses, rushes, and sedges. This species occurs in salt marshes, swamps, hammocks, beech-magnolia ravine, rich hardwoods, oak-pine woods, shortleaf-pine woods, longleaf-pine woods, and also in open fields. It has been found on grasses and cover crops in cultivated fields. It is present on the under surfaces of leaves of ornamental magnolias, **Paulownia tomentosa**, mulberry, catalpa, and sycamore around houses and in cities. **Theridula ventillans** is a rather common and widespread species in the southern two-third of Alabama. It ranges from sea level up to the foothills. Season: Females, January to September; males, January to July.

MORPHOLOGY. This species has been known as **Theridula quadripunctata** Keys., but since, as Dr. Gertsch writes, **T. ventillans** Keys. is the male of the same species, the latter name must be used for reasons of priority. Anywhere from two to four light, often greenish-yellow spots are visible on the dorsum of the abdomen of the female. The abdomen is much wider than long, and the lateral horns become blunt in gravid females. Males lack the lateral horns, and the abdomen is orange and without a dorsal spot. Size: Female, 2.5 mm.

Anelosimus **Simon**, 1891.

53. **Anelosimus textrix** (Walckenaer).

Linyphia textrix Walckenaer, Hist. Nat. Ins. Apt., 1841, **2**: 281. **Theridion studiosum** Hentz, Journ. Bost. Soc. Nat. Hist., 1850, **6**: 275, pl. 9, fig. 5.

DISTRIBUTION. Baldwin: Gulf State Park, females, August 23-25, 1940; Hale: Arcola, females, male, June 22, 1941; Madison: Grayson's Spring, Keel Mountain, immatures (egg-sacs), July 1946; Montgomery: Montgomery, females, September 1946; Tuscaloosa: Tuscaloosa, females, summer 1941; Wilcox: Miller's Ferry, females, May 25, 1939. Female, Shelbyville, Tennessee, July 7, 1943.

ECOLOGY. Communal webs, irregular masses of silk binding together terminal branches and leaves of oaks, evergreen shrubs and red cedars; rich hardwoods, oak-hickory, liveoak hammocks, oak-pine

red cedar thickets and glades. This species lives in cedar trees in pastures in north Alabama and central Tennessee. Webs in bamboo and ornamental shrubs around homes, on estates, in cities. The egg sacs are orbicular and white with a maculated surface, but later turn brown. These are placed in the center of the web mass. In this mass are numerous tunnels or passageways. The female stays in the web with the young for a time. Webs of individual females, are sometimes placed close together. Season: May to December.

MORPHOLOGY. Species of this genus have quite a resemblance to larger species of **Theridion.** Size: Female, 4.0 mm. This species has usually been known as **Anelosimus studiosus** Htz.

Stemmops **O. P. Cambridge,** 1894.

54. **Stemmops bicolor** Cambridge.

Stemmops bicolor Cambridge, Biol. Centr. Amer., 1894, **1:** 125, pl. 17, fig. 5.

DISTRIBUTION. Clarke: Thomasville, immature female, February 1941. Female, Centreville, Wilkinson County, Mississippi, April 1944.

ECOLOGY. Taken while sifting leaves of leaf litter on slopes of rich hardwood ravines. This is a very small spider with a brown carapace, and a very dark abdomen having a white spot on the apex above the spinnerets. Size: Female, 2.0 mm.

Chrysso **O. P. Cambridge,** 1882.

55. **Chrysso davisi** Bryant.

Chrysso davisi Bryant, Trans. Conn. Ac. Sci., 1945, **36:** pl. 1, figs. 4, 11.

DISTRIBUTION. Baldwin: Fort Morgan, female, July 30, 1940; Gulf State Park, females, males, August 23-25, 1940; Swift's Landing, Bon Secour River, female, January 17, 1942; Dale: Pea River Project, females, summer 1940; Escambia: Little River State Park, females, spring 1939; Houston: Big Creek, females, August 31, 1940; Mobile: Cedar Creek, immature females. Females, 8 miles NW. of Marianna, Jackson County, December 29, 1939; male, female, Bristol, Calhoun

County, Florida, December 29, 1939. Females, Kisatchie National Forest, Grant Parish, Louisiana, June 1941.

ECOLOGY. Small webs on under surfaces of leaves of hard-leaved shrubs, **Myrica**, privet, yaupon; pin oak, live oak. This species occurs at the edges of hardwood swamps, gum swamps, slashpine woods; also in liveoak hammocks, sandy hammocks, beech-magnolia ravines (limestone areas), in blackjack oak, and in open fields. Season: Females, January to December; males, August to December.

MORPHOLOGY. This species has usually been known as **Chrysso albomaculata** Camb. In coloration it is very different from other Theridiidae. It is a red spider with a caudal hump on the abdomen. The color fades in alcoholic specimens. Size: Females, 2.5 mm.; male, 2.2 mm.

Subfamily Theonoinae.

Key to genera

1. Sternum prolonged behind and between the hind coxae in a truncate lobe. Abdomen of male with well defined scutum around and anterior to spinnerets ..... **Emertonella**, p. 56

1. Sternum abruptly truncate behind, and not extending between hind coxae. Abdomen of male lacking scutum around and anterior to spinnerets ..... **Histagonia** (not in Alabama)

Emertonella **Bryant**, 1945.

56. **Emertonella emertoni** (Bryant).

Euryopis emertoni Bryant, Bull. Mus. Comp. Zool., 1933, **74**: 172, pl. 1, fig. 1. **Emertonella emertoni** Bryant, Psyche, 1945, **52**: 183-184.

DISTRIBUTION. Limestone: Elk River, immature female, April 1940. Male reported from Alabama by Miss Bryant, but with no locality mentioned. Female, Cedars of Lebanon State Park, Wilson County, Tennessee, August 1943.

ECOLOGY. Taken from under stones, rich hardwood ravines.

MORPHOLOGY. The female has a brown carapace and brown

legs, and the abdomen is black except for two pairs of brown muscle impressions. The epigynum is an oval aperture with an internal brown border, and a chitinous body visible at the bottom of the pit. Size: Female, 2.1 mm.; male, 1.8 mm.

Subfamily Pholcommatinae.

Key to genera

1. Dorsum of abdomen raised into a series of humps ..... **Ulesanis**, p. 57

1. Dorsum of abdomen rounded ..... **Paidisca**, p. 58

Ulesanis, **L. Koch**, 1872.

57. **Ulesanis americanus** Emerton, Plate I, figure 4.

Ulesanis americana Emerton, Trans. Conn. Ac. Sci., 1882, **6**: 28, pl. 6, figs. 1-1g.

DISTRIBUTION. Baldwin: Dyas Creek, female, June 25, 1940; Hog Creek, female, November 7, 1940; Dale: South of Ariton, immature female, 1939; Escambia: Little River State Park, male, female October 19, 1939; Jefferson: Shade's Mountain, female, summer 1939; Lawrence: Town Creek, female, October 5, 1940; Mobile: Cedar Creek State Park, female, October 19, 1939; Spring Hill, immature, 1940; Monroe: Claiborne, female, April 11, 1940; Randon's Creek, male, October 19, 1941; Tuscaloosa: Rock Mountain, female, January 1939; Hurricane Creek, females, September 31, 1941. Female, Cedars of Lebanon State Park, Wilson County, Tennessee, August 1943. Male, female, 8 miles NW. of Marianna, Jackson County, Florida, December 29, 1939.

ECOLOGY. On leaves of evergreen oaks, dogwood, gallberry, huckleberry, and other shrubs; on Spanish moss. This species occurs frequently on the borders of woods, and is present in liveoak hammocks, sandy hammocks, woods along branch swamps, evergreen-deciduous hardwoods, oak-hickory, oak-pine, longleaf pine woods, all these in lowlands, in ravines, on hillsides, and on mountains. Season: Females, January to December; males, October to December.

MORPHOLOGY. This species has a hard cuticle and humps on the abdomen, and is very small with short legs. Size: Female, 1.5 mm.; abdomen, 1.5 mm.

Paidisca **Bishop & Crosby**, 1926.

58. **Paidisca marxi** (Crosby).

Histagonia marxi Crosby, Canadian Entom., 1906, **38:** 309, figs. 35-36.

DISTRIBUTION. Baldwin: Gulf State Park, female, August 23-25, 1940; Butler: Fort Dale Cemetery, females, May 26, 1940; Clarke: Thomasville, females, male, October 18, 1941; Colbert: Spring Cave, Maud, male, September 25, 1940; Coosa: Hatchet Creek, female, June 1940; Dallas: Soapstone Creek, female, October 5, 1940; Houston: Big Creek, male, October 21, 1941; Omussee Creek, males, female, October 21, 1941; Jackson: Blowing Cave, Garth, immature, 1940; Jefferson: West Birmingham, females, July 20, 1941; Lauderdale: Cypress Creek, male, September 1940; Lawrence: Town Creek, females, male, October 4, 1941; Limestone: Mount Roszell, females, April 16, 1940; Elk River, female, April 16, 1940; Madison: Monte Sano, females, male, December 1940; Drake's Cove, female, June 1939; Keel Mountain, female, July 25, 1946; Mobile: Mon Louis Island, male, January 9, 1941; Monroe: Randon's Creek, females, male, October 19, 1941; Morgan: Flint Creek, male, October 2, 1940; Pike: Troy, January 15, 1942; Tuscaloosa: Holt, male, female, February 22, 1941; Tuscaloosa, females, males, April 13, 1941; October 11, 1941. Female, Grier's Cave, Randolph County, Georgia, October 22, 1941. Females, males, Cedars of Lebanon State Park, Wilson County, Tennessee, August 1943.

ECOLOGY. Females and males in very small webs under stones and rocks, especially of the limestone and sandstone slab type; under top layer of leaves in leaf litter. This species occurs in evergreen hardwood swamps, hammocks, rich hardwoods, oak-hickory, oak-pine, red cedar glades, and in shortleaf pine woods. It is rather common under old paper and cardboard at the edge of the woods along roads. Under stones and rocks on lawns and embankments, urban areas in north Alaabma. In southern part of the state where rocks are often absent this species seems to resort to leaf litter. It is present in open fields under limestone slabs in the highland regions.

Round, white egg-sacs have been found between April and July. **Paidisca marxi** ranges up into mountains over 1500 feet elevation. Season: Females, February to December; males, January to December.

MORPHOLOGY. This is a small, short-legged species, whose abdomen has a chitinous shield on the dorsum and sides, and a black spot on the dorsum. Size: Female, 1.2 mm.

PLATE I

Fig. 1. **Theridion catapetraeum** Gertsch & Archer. Female. Tuscaloosa, Tuscaloosa County, Alabama.

Fig. 2. **Theridion frondeum** Hentz. Female neotype. Tuscaloosa, Tuscaloosa County, Alabama.

Fig. 3. **Conopistha globosa** (Keyserling). Female. Chattahoochee State Park, Houston County, Alabama.

Fig. 4. **Ulesanis americanus** Emerton. Female. Shade's Mountain, Jefferson County, Alabama.

PLATE II

Fig. 1. **Hentziectypus globosus** (Hentz). Female. Montgomery, Montgomery County, Alabama.

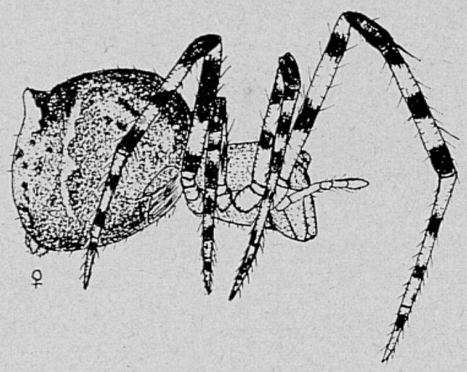
Fig. 2. **Hentziectypus globosus** (Hentz). Egg-sac. Montgomery, Montgomery County, Alabama.

Fig. 3. **Hentziectypus globosus** (Hentz). Epigynum. Oak Mountain State Park, Shelby County, Alabama.

Fig. 4. **Theridion dividuum** Gertsch & Archer. Epigynum. Arcola, Hale County, Alabama.

Fig. 5. **Conopistha nephilae** (Taczanowski). Female. Town Creek, Wheeler Dam, Lawrence County, Alabama.

Fig. 6. **Conopistha globosa** (Keyserling). Right male palpus. Chattahoochee State Park, Houston County, Alabama.



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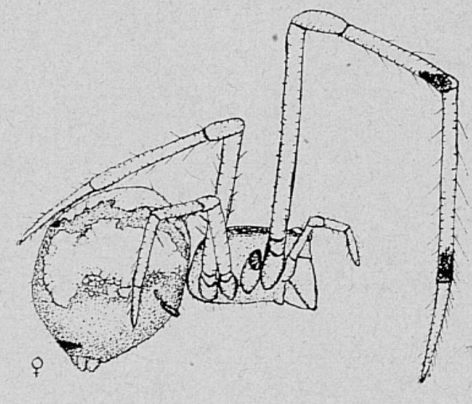

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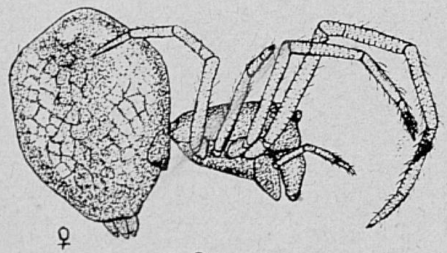

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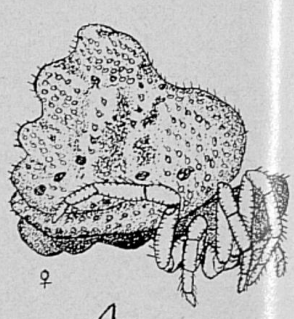

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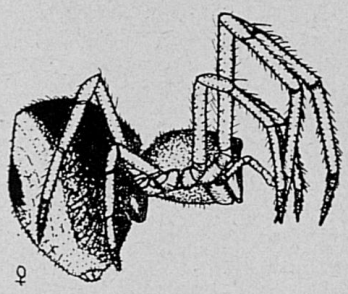

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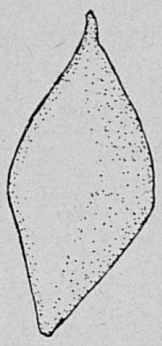

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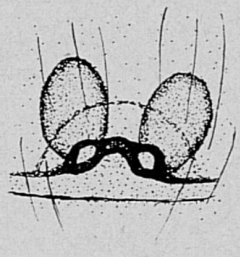

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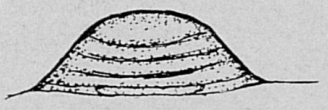

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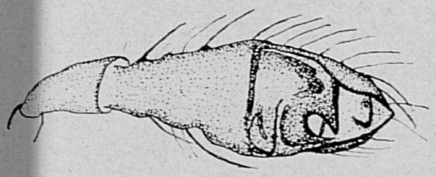

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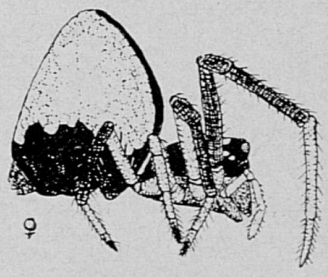

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