

# Spiders from Bommerlund Plantation, a Spruce Forest in South Jutland.

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## Introduction.

In 1863 the distillery at Bommerlund was moved elsewhere with the result that the small community there slowly disappeared. In or about 1885 planting of a spruce forest in the former fields was begun. Deep furrows, still clearly visible in parts of the forest, bear the witness that at least some of the fields were cultivated without previous breaking of the hard-pan which, therefore, had to be broken prior to the planting. Many of the stone fences between the fields escaped destruction, and a few of them still provide a suitable habitat for *Theridion saxatile* and may have housed a population of this species for centuries. Indeed, the majority of the species found in the area may have thrived there long before the forest planting, although a few of them, *Lycosa lugubris*, *Araneus omoedus*, *Entelecara congenera*, *Minyriolus pusillus*, *Drapetisca socialis*, and *Pityohyphantes phrygianus*, probably are newcomers.

However, the afforestation has beyond doubt affected the size of the populations of the various species and given rise to a diversity of habitats in the area, thus greatly facilitating the collection of a large number of species. The young forest, interspersed with considerable areas of untouched bogs, ploughed fire lanes, abandoned fields covered with heather etc., thus provides an opportunity to elucidate the spider fauna of a part of the country.

As a participant in a campaign against the sawfly *Lygaeonematus abietinus* Christ, which had a severe outbreak in Bommerlund Plantation in the years about 1950, I found the possibilities too obvious to be neglected. Little was done in 1950, but in 1951 and 1952 more comprehensive collections were made, and they were followed up by collections at other seasons as will be accounted for below.

### The area investigated.

Bommerlund Plantation is situated about 7 km north of Padborg at the Danish-German frontier (the point with the co-ordinates  $54^{\circ} 53' N$ ,  $9^{\circ} 21' E$  is in the middle of the plantation; see map in Bøggild 1962, locality No 25).

The plantation is a state forest, an area of 663 ha (= 1639 acres) belongs to the state and its border is also the border of the area studied. Thus the material comes not only from the 560 ha of Norway spruce stands but also from Sitka spruce, white spruce, silver fir, Scots pine, oak, heather, a diversity of grasses, from the Sphagnum bogs and the cotton-grass found there, from the naked ground in a glade, from stone fences, ditches and rabbits' burrows, from a narrow stripe of meadow between the forest and the stream Gejlåa, etc. It even comes from the house of the forest-guard, called 'Bommerlundhus'.

As the present investigation was only a by-product of the Lygaeonematus campaign little time was available for detailed accounts of the finds. Since the label often read 'Bommerlund' plus a date, the present paper will not contribute much to the ecology of the species, nor was that the purpose. This is not a survey of spiders living in a spruce stand but a list of spiders from a restricted area the majority of which is covered with spruce, no more. Nevertheless such information is needed for a planned survey of the Danish spider fauna.

### The material collected.

Collections were made in six periods, viz. 3—14. vi. 1950, 29. v—18. vi. 1951, 21. v—17. vi. 1952, 6—11. x. 1954, 25—31. vii. 1955, and 22—23. viii. 1955. In addition some specimens collected by forstkandidat B. Beier Petersen in May and June 1953 as well as some from a very large material collected by mag. scient. Jørgen Dahl in June 1955 have been included. It was out of question to make use of more of this material as mechanical damage, caused by the method of collection necessitated by Mr Dahl's investigations, made the identification very time-consuming.

The material used consists of 1681 determinable specimens of 149 species of which 12 are new to the Danish fauna, viz. *Pirata uliginosus*, *Episinus angulatus*, *Tetragnatha pinicola*, *Ara-neus sturmi*, *Cornicularia vigilax*, *Entelecara media*, *Mioxena blanda*, *Phaulothrix hardyi*, *Centromerus expertus*, *C. prudens*, *C. incilius*,

and *Centromerita concinna*. And no other Danish locality is known for *Silometopus elegans*. Further 25 species are here recorded as new to Jutland in so far as no distinct statement of their occurrence there has been published.

There is no reason to believe that the list is complete. On the contrary, the fact that 31 species are represented by only one specimen, 20 by only two, and 16 species by only three specimens, gives rise to the suspicion that many species that do occur in the area are not represented at all. But no method, other than renewed search, is available to settle the matter.

### List of species found.

#### Amaurobiidae.

*Amaurobius similis* Bl., 6—14. vi. 1951, 4 ♀♀, one of them dropped by a starling at its nest-box; 30. v—8. vi. 1952, 3 ♀♀. All from Bommerlundhus.

#### Dictynidae.

*Dictyna arundinacea* (L.), 12. vi. 1950, 2 ♀♀ in heather; 2—15. vi. 1951, 18 ♀♀, 2 ♂♂; 25. v. 1952, 10 ♀♀, 4 ♂♂; 17. vi. 1952, 1 ♀; 25—31. vii. 1955, 8 ♀♀, 25 juv., one of the females from a young oak. One of the females from 15. vi. 1951, found in heather, had in its retreat 5 egg cocoons containing 21, 19, 22, 19, and 16 eggs. From the stage of development the relative age could be stated with certainty, they are here arranged as to descending age.

#### Dysderidae.

*Segestria senoculata* (L.), 28—31. vii. 1955, 3 ♀♀, 3 juv., from a wooden wall of an outhouse at Bommerlundhus.

#### Gnaphosidae.

*Drassodes lapidosus* (Walck.), 17. vi. 1952, 1 ♀; 26. vii. 1955, 1 ♂.

*Drassodes pubescens* (Th.), 12. vi. 1951, 1 ♀.

*Zelotes pusillus* (C. L. K.), 31. v. 1951, 1 ♀ with 8 eggs laid 31. v. in a white cocoon; 18. vi. 1951, 1 ♀.

*Zelotes subterraneus* (C. L. K.) = *apricorum* (L. Koch), 16. vi. 1952, 1 ♀ with 49 eggs laid in a folded paper bag near Bommerlundhus.

#### Clubionidae.

*Clubiona reclusa* O. P.-C., 16. vi. 1951, 1 ♀, 1 ♂.

*Clubiona subsultans* Th., 11. vi. 1951, 1 ♀; 24. v. 1952, 1 ♂; 6. x. 1954, 1 ♀.

*Clubiona stagnatilis* Kulcz., 29. vii. 1955, 1 ♀. Third Danish record; more localities are known and will be published later (Bøggild 1962).

*Clubiona pallidula* (Cl.), 13. vi. 1951, 1 ♂; 25. vii. 1955, 1 ♀.

*Clubiona terrestris* Westr., 4. vi. 1951, 1 ♂; 27. vii. 1955, 1 ♀ from a young oak.

*Clubiona neglecta* (O. P.-C.), 10. x. 1954, 1 ♀ from a stake, under loose bark. First record from Jutland.

*Clubiona trivialis* C. L. K., 15. vi. 1951, 1 ♂; 24. v. 1952, 1 ♀.

*Cheiracanthium erraticum* (Walck.), 7. vi. 1951, 1 ♂; 15. vi. 1951, 2 ♀♀, 2 ♂♂,

2 ♂-juv. that moulted to adults 20—22. vi.; 17. vi. 1951, 1 ♀-juv., and 1 ♂-juv. which moulted finally the next day; 17. vi. 1952, 1 ♀, 1 ♂; 6—10. x. 1954, 9 ♀♀; 25. vii. 1955, 1 ♀ with 49 eggs; 28. vii. 1955, 2 ♀♀ from a bog, one of them with 92 eggs.

*Agroeca proxima* (O. P.-C.), 10. x. 1954, 1 ♀ from a grass-covered glade; 23. viii. 1955, 1 ♀.

#### Zorididae.

*Zora spinimana* (Sund.), 30. v. 1951, 1 juv.; 15. vi. 1951, 1 ♀; 31. v—4. vi. 1952, 1 ♀, 1 ♂; 7. x. 1954, 1 juv. beaten from sprigs of spruce on the ground in a spruce stand; 10. x. 1954, 1 ♂.

#### Xysticidae.

*Diaea dorsata* (Fabr.), 7—13. vi. 1951, 1 ♂, 1 juv.; 27—29. vii. 1955, 1 ♀, 1 ♂-juv., the female beaten from a young oak. First record from Jutland.

*Xysticus cristatus* (Cl.), 3—17. vi. 1951, 6 ♀♀, 4 ♂♂, 1 juv.; 16. vi. 1952, 1 ♂; 28. vii. 1955, 1 ♀ from a bog.

*Xysticus audax* (Schrank), 5—15. vi. 1951, 4 ♀♀, 1 ♂, 1 juv.; 31. v—7. vi. 1952, 2 ♀♀, 1 ♂; 16. v. 1953, 1 ♀ from spruce (B. Beier Petersen leg.).

*Xysticus erraticus* (Bl.), 16. vi. 1951, 1 ♀; 8. vi. 1952, 1 ♂ that had caught a stem sawfly; 31. vii. 1955, 1 ♀, 1 juv., both hiding below a stone. First record from Jutland.

#### Philodromidae.

*Philodromus aureolus* (Cl.), 9—18. vi. 1951, 8 ♀♀, 1 ♂, 3 ♀-juv. whose epigynes were visible through the cuticle; 9. vi. 1952, 1 ♂; 26. vii. 1955, 1 ♀ with two egg cocoons on a spruce twig, the older contained 89 hatchlings and 4 eggs far from hatching, the younger 36 eggs near hatching and 2 eggs far from hatching.

*Philodromus collinus* C. L. K., 5—12. vi. 1951, 1 ♂, 2 ♀-juv. whose epigynes were visible through the cuticle, and 1 ♂-juv.; 4—17. vi. 1952, 1 ♀, 3 ♂♂, 1 ♀-juv. with visible epigyne; 27—29. vii. 1955, 1 ♀, 2 ♂♂.

*Philodromus histrio* (Latr.), 15. vi. 1951, 1 ♀; 17. vi. 1952, 1 ♀ with 11 eggs in a cocoon on heather; 31. vii. 1955, 9 juv.

*Tibellus oblongus* (Walck.), 1—17. vi. 1951, 8 ♀♀, 5 ♂♂, 1 ♀-juv.; 1. vi. 1952, 1 ♀, 1 ♂; 7—10. x. 1954, 18 ♀-juv., 14 ♂-juv.; 30—31. vii. 1955, 3 ♀♀.

#### Salticidae.

*Salticus scenicus* (Cl.), 8. vi. 1950, 1 ♂; 5—9. vi. 1951, 3 ♀♀, 3 ♂♂; 1. vi. 1952, 2 ♀♀, 1 ♂; 31. vii. 1955, 3 ♀♀. The majority was caught on Bommerlundhus, but one was captured in a spruce stand in a distance of ab. 700 metres from the nearest building.

*Salticus cingulatus* (Panzer), 4—7. vi. 1951, 1 ♀, 1 ♂.

*Heliophanus flavipes* C. L. K., 2—16. vi. 1951, 11 ♀♀, 2 ♂♂, 3 juv.; 22. viii. 1955, 1 ♀.

*Euophrys frontalis* (Walck.), 10—16. vi. 1951, 2 ♂♂; 23. v. 1952, 1 juv.; 26—31. vii. 1955, 3 ♀♀, 1 ♂, two of the females were found below a stone.

*Sitticus caricis* (Westr.), 28. vii. 1955, 1 ♀ from a bog. First record from Jutland. Previous Danish records are all from N.E.-Sealand (Sørensen 1904).

*Evarcha falcata* (Cl.), 10. vi. 1951, 1 ♀; 23. v—15. vi. 1952, 1 ♀, 1 ♂, 1 ♂-juv.

**Lycosidae.**

*Lycosa monticola* (Cl.), 1—18. vi. 1951, 10 ♀♀, 2 ♂♂; 17. vi. 1952, 1 ♂; 30—31. vii. 1955, 2 ♀♀.

*Lycosa tarsalis* Th., 9. vi. 1951, 1 ♀.

*Lycosa pullata* (Cl.), 29. v—18. vi. 1951, 20 ♀♀, 9 ♂♂, 2 ♀-juv.; 21. v—17. vi. 1952, 46 ♀♀, 11 ♂♂; 25—31. vii. 1955, 43 ♀♀, 13 ♂♂; 22. viii. 1955, 7 ♀♀, 1 ♂.

The species was found in a variety of habitats ranging from the Sphagnum carpet in the bogs to the very dry surroundings along the roads (cf. Bøggild 1961).

*Lycosa prativaga* L. Koch, 8—15. vi. 1952, 21 ♀♀, 3 ♂♂; 28. vii. 1955, 12 ♀♀; 23. viii. 1955, 3 ♀♀. This species was found in bogs only, and always or nearly always on the Sphagnum carpet. Insufficient data for a few specimens prevent an unreserved statement concerning the occurrence on Sphagnum.

*Lycosa amentata* (Cl.), 9—17. vi. 1951, 2 ♀♀, 2 ♂♂; 13. vi. 1952, 1 ♀; 31. vii. 1955, 2 ♀♀.

*Lycosa nigriceps* Th., 7—18. vi. 1951, 11 ♀♀, 2 ♂♂; 14—17. vi. 1952, 4 ♀♀; 28—31. vii. 1955, 2 ♀♀.

*Lycosa lugubris* (Walek.), 31. v—18. vi. 1951, 5 ♀♀, 2 ♂♂.

*Xerolycosa nemoralis* (Westr.), 27—29. vii. 1955, 2 ♀♀, 2 ♂♂, 2 ♀-juv., 3 ♂-juv.

*Xerolycosa miniata* (C. L. K.), 3. vi. 1952, 1 ♀.

*Tarentula pulverulenta* (Cl.), 30. v. 1951, 2 ♀♀, 1 ♂; 23. v—16. vi. 1952, 2 ♀♀, 3 ♂♂; 26—27. vii. 1955, 3 ♀♀.

*Tarentula barbipes* (Sund.), 11. x. 1954, 1 ♂.

*Trochosa ruricola* (De Geer), 9. vi. 1951, 1 ♀.

*Trochosa terricola* Th., 29. v—9. vi. 1951, 4 ♀♀; 9. vi. 1952, 7 ♀♀; 10. x. 1954, 1 ♀; 28. vii. 1955, 1 ♀.

*Arctosa perita* (Latr.), 18. vi. 1951, 1 ♀; 11. x. 1954, 6 ♀♀, 4 ♂♂, 1 ♂-juv. from naked sandy ground along one of the roads.

*Pirata piraticus* (Cl.), 8—13. vi. 1952, 7 ♀♀, 7 ♂♂, 4 juv.; 25—28. vii. 1955, 4 ♀♀, 1 ♂. All captured in bogs.

*Pirata piscatorius* (Cl.), 13. vi. 1952, 6 ♀♀, 3 ♂♂, 1 ♀-juv.; 28. vii. 1955, 3 ♀♀; 23. viii. 1955, 1 ♀. All captured in bogs.

*Pirata uliginosus* (Th.), 23. viii. 1955, 1 ♀ from a bog. Its cocoon contained 16 eggs. First Danish record.

**Pisauridae.**

*Pisaura mirabilis* (Cl.), 3—17. vi. 1951, 5 ♀♀, 2 ♂♂; 9. vi. 1952, 1 ♂; 7. x. 1954, 7 juv.; 29. vii. 1955, 1 ♀, the only adult specimen seen, all other webs of this species contained no female late in July.

**Agelenidae.**

*Tegenaria domestica* (Cl.), 9—10. vi. 1951, 2 ♀♀, 3 ♂♂; 27. vii. 1955, 1 ♀, its sternum without the characteristic pattern; 23. viii. 1955, 2 ♀♀. All captured in Bommerlundhus.

*Cryphoea silvicola* (C. L. K.), 29. v—17. vi. 1951, 18 ♀♀, 16 ♂♂, 3 juv.; 10. x. 1954, 1 ♀, 1 ♂; 29. vii. 1955, 3 ♀♀, 1 ♂-juv.; 22. viii. 1955, 2 ♀♀, 3 ♂♂, 2 ♂-juv. Most or all of them from spruce, those found in August were found below bark on dead branches.

**Hahniidae.**

*Antistea elegans* (Bl.), 28. vii. 1955, 1 ♂ from Sphagnum in a bog. First record from Jutland.

**Mimetidae.**

*Ero furcata* (Villers), 11. vi. 1950, 1 ♀; 29. v—4. vi. 1951, 3 ♀♀; 7—10. x. 1954, 1 ♀, 1 juv.

**Theridiidae.**

*Episinus angulatus* (Bl.), 8. vi. 1950, 1 ♀; 1—16. vi. 1951, 1 ♀, 1 ♂; 7. vi. 1952, 1 ♂; 13. vi. 1952, 1 ♀ (B. Beier Petersen leg.); 10. x. 1954, 2 juv. First Danish record. However, the specimens from Asserbo Plantation in North Sealand recorded as *E. truncatus* Latr. by Brændegaard (1928) have been redetermined and turned out to be *E. angulatus* according to Brændegård (in litt.). It remains to be established whether *E. truncatus* has at all been found in Denmark.

*Euryopsis flavomaculata* (C. L. K.), 7. vi. 1951, 1 ♂; 23. v—7. vi. 1952, 2 ♂♂.

*Crustulina guttata* (Wider), 19. vi. 1955, 1 ♀ (J. Dahl leg.).

*Asagena phalerata* (Panzer), 3. vi. 1951, 4 juv., one of them lacking the posterior median eye of the right side, no trace of it being visible on the surface of the cuticle; 9. vi. 1952, 1 ♀ found below moss.

*Steatoda bipunctata* (L.), 10. vi. 1951, 1 ♀, 2 juv., from Bommerlundhus.

*Theridion lunatum* (Cl.), 29. v—18. vi. 1951, 9 ♀♀, 3 ♂♂, 3 juv.; 15. vi. 1952, 1 ♀; 25—28. vii. 1955, 4 ♀♀, three of them guarding eggs and young that had not yet escaped from the cocoon.

*Theridion saxatile* C. L. K., 18. vi. 1951, 6 ♀♀, 1 ♂, all from a stone fence. One of the females had 106 eggs in one cocoon.

*Theridion sisyphium* (Cl.), 1—17. vi. 1951, 25 ♀♀, 13 ♂♂, 4 juv.; 31. v—17. vi. 1952, 9 ♀♀, 6 ♂♂; 3—8. vi. 1953, 5 ♀♀, 2 ♂♂, 2 juv., all eating *Lygaeonematus* larvae (B. Beier Petersen leg.); 25—31. vii. 1955, 11 ♀♀, 8 small juv., at least two of the females guarding eggs. It can not be excluded that some of the immature specimens belong to the next species.

*Theridion impressum* L. Koch, 15. vi. 1952, 1 ♂-juv. that moulted to an adult male ten days later.

*Theridion varians* Hahn, 11. vi. 1951, 1 ♀.

*Theridion tinctum* (Walck.), 14. vi. 1950, 1 ♂; 3—18. vi. 1951, 8 ♀♀, 2 ♂♂, 3 juv.; 23. v. 1952, 1 ♂; 15. vi. 1952, 1 ♀; 6—10. x. 1954, 3 ♀♀; 27. vii. 1955, 1 ♂. Although stated to be common in spruce forests in Denmark (Deichmann 1920) no records from Jutland have been published.

*Theridion ovatum* (Cl.), 6—9. vi. 1951, 7 juv.; 2—9. vi. 1952, 6 juv.; 3—14. vi. 1953, 6 juv. eating *Lygaeonematus* larvae (B. Beier Petersen leg.); 26—29. vii. 1955, 11 ♀♀, 4 ♂♂, partly from young oaks; 22. viii. 1955, 1 ♀.

*Theridion bimaculatum* (L.), 9. vi. 1952, 1 ♂ from moss; 10. x. 1954, 1 ♀; 29. vii. 1955, 1 ♀.

*Robertus lividus* (Bl.), 29. v. 1951, 1 ♀; 4. vi. 1951, 1 ♂; 18. vi. 1951, 1 ♂; 31. vii. 1955, 1 ♀ below a stone.

*Robertus scoticus* Jackson, 1. vi. 1951, 1 ♀; 10. vi. 1951, 1 ♀; 10. x. 1954, 1 ♂. First record from Jutland. The only other Danish locality known is Gribskov in N.E.-Sealand (Nielsen 1932).

**Tetragnathidae.**

- Tetragnatha extensa* (L.), 9—17. vi. 1951, 4 ♀♀; 13. vi. 1952, 1 ♂; 25. vii. 1955, 1 ♂.
- Tetragnatha pinicola* L. Koch, 17. vi. 1951, 1 ♀ that laid 89 eggs the next day. First Danish record.
- Tetragnatha montana* Simon, 8. vi. 1950, 1 ♂; 14—17. vi. 1952, 2 ♀♀, 1 ♂. One of the females lacks the 'blunt excrescence X' and its 'excrescence on fang (Ex)' is only weakly developed (cf. Locket & Millidge 1953, fig. 64, C, F) but the receptacula are typical (as in Tullgren 1947). Although stated to be the most common species of the genus in Denmark by Sørensen (1904), it appears that Skallingen (Cloudsley-Thompson 1955) is the only locality published.
- Tetragnatha obtusa* C. L. K., 14. vi. 1951, 1 ♂; 24. v. 1952, 1 ♀; 1. vi. 1952, 1 ♂.
- Pachygnatha degeeri* Sund., 29. v. 1951, 1 ♂; 7—10. x. 1954, 5 ♀♀, 2 ♂♂.

**Araneidae.**

- Meta segmentata* (Cl.), 29. v—18. vi. 1951, 47 ♀♀, 13 ♂♂, 9 juv.; 26. v—14. vi. 1952, 6 ♂♂; 6—10. x. 1954, 5 ♀♀, 5 ♂♂, 5 juv.; 27. vii. 1955, 1 ♂. The species was very abundant in October 1954, but only the above few specimens were preserved.
- Meta merianae* (Scop.), 29. v—18. vi. 1951, 9 ♀♀, 2 ♂♂, 2 juv., one of the females had its web in the opening of a rabbit's burrow, others were found in a deep, dark ditch; 21—25. v. 1952, 12 ♀♀, 1 ♂; 14—16. vi. 1952, 4 ♀♀.
- Araneus omoedus* (Th.), 9. vi. 1950, 1 ♀-juv.; 10. x. 1954, 1 ♂-juv. The general appearance of the specimens and their size, the male one is 7 mm long, make me believe that they belong to this species and not to *A. gibbosus* (Walck.).
- Araneus diadematus* Cl., 5—18. vi. 1951, 5 juv.; 6. vi. 1952, 1 juv.; 6—7. x. 1954, 3 ♀♀; 27. vii. 1955, 1 ♀, 2 ♂♂.
- Araneus quadratus* Cl., 17. vi. 1952, 1 ♀; 6—10. x. 1954, 19 ♀♀, 5 juv.; 28—31. vii. 1955, 7 ♀♀, 3 ♂♂, 3 juv. One of the males with three curved spines on the patella of the left palp.
- Araneus cornutus* Cl., 9—17. vi. 1951, 26 ♀♀, 2 ♂♂, 4 juv., one of the females with 293 eggs in one cocoon; 13. vi. 1952, 1 ♀; 7. x. 1954, 1 ♀, 1 ♂, 1 ♂-juv.; 26—31. vii. 1955, 3 ♀♀.
- Araneus patagiatus* Cl., 31. v—16. vi. 1951, 2 ♀♀, 1 juv.; 7—15. vi. 1952, 1 ♀, 1 juv.; 10. x. 1954, 1 ♂.
- Araneus umbraticus* Cl., 27. vii. 1955, 2 ♀♀ at Bommerlundhus.
- Araneus redii* (Scop.), 1—7. vi. 1951, 4 ♀♀, 1 ♂; 7—17. vi. 1952, 3 ♀♀; 7—10. x. 1954, 12 ♀-juv., 11 ♂-juv. One of the females, collected 17. vi. 1952, is unusually small: total length 5.2 mm, cephalothorax 2.1 mm, abdomen 3.4 mm.
- Araneus adiantus* (Walck.), 7—17. vi. 1951, 4 juv.; 7. vi. 1952, 2 juv.
- Araneus sturmi* (Hahn), 3—15. vi. 1951, 3 ♀♀, 3 ♂♂, 2 juv.; 24. v—1. vi. 1952, 2 ♀♀, 2 ♂♂; 7—10. x. 1954, 2 juv.; 17. vi. 1955, 2 ♀♀, 1 juv. (J. Dahl leg.); 31. vii. 1955, 1 ♂-juv. First Danish record. However, Sørensen (1904) did not recognize this species as being different from *A. triguttatus* (Fabr.) which he stated to be 'rather frequent' in Denmark. Previous material in Danish collections may, therefore, have been misidentified.

- Araneus cucurbitinus* Cl., 9. vi. 1950, 1 ♀; 30. v—18. vi. 1951, 6 ♀♀, 6 ♂♂, 12 juv.; 24. v—17. vi. 1952, 4 ♀♀, 4 ♂♂; 25—26. vii. 1955, 1 ♀, 1 ♂.
- Araneus alpicus* (L. Koch), 13. vi. 1951, 1 ♂; 21. v—8. vi. 1952, 3 ♂♂.
- Singa pygmaea* (Sund.), 16. vi. 1951, 1 ♀. First record from Jutland.
- Singa hamata* (Cl.), 7—17. vi. 1951, 8 ♀♀, three of them with 66, 67, and 73 eggs respectively; 10. x. 1954, 8 juv.
- Cercidia prominens* (Westr.), 16. vi. 1951, 1 ♂-juv.; 31. v. 1952, 1 ♀; 7. x. 1954, 1 juv.; 26. vii. 1955, 1 juv.
- Zilla atrica* (C. L. K.), 6. x. 1954, 2 ♀♀ from an isolated conifer near Bommerlundhus, further search did not reveal any more; 22. viii. 1955, 2 ♀♀, 4 ♂♂, 3 ♂-juv. from pines in the south-border of the forest. Although the species is regarded as being rather common in Denmark (Sørensen 1904) this is nevertheless the first published record from Jutland.
- Mangora acalypha* (Walck.), 4—16. vi. 1951, 1 ♀, 1 ♂. First record from Jutland.
- Cyclosa conica* (Pallas), 3. vi. 1950, 1 ♀; 30. v—18. vi. 1951, 16 ♀♀, 3 ♂♂, 3 juv.; 25. v—17. vi. 1952, 9 ♀♀, 3 ♂♂; 6. x. 1954, 3 ♀-juv., 1 ♂-juv. Most or all of them taken within the spruce stands.

#### Erigonidae.

- Cornicularia vigilax* (Bl.), 19. vi. 1955, 1 ♀ (J. Dahl leg.). First Danish record.
- Entelecara media* Kulcz., 6. x. 1954, 1 ♀; 19. vi. 1955, 1 ♀ (J. Dahl leg.). First Danish record (but see comments on the same species in Bøggild 1962).
- Entelecara congenera* (O. P.-C.), 3—10. vi. 1952, 2 ♀♀, 1 ♂. The two other Danish localities known are Asserbo Plantation in North Sealand and Svinkløv Plantation in North Jutland (Brændegaard 1928).
- Erigonidium graminicolum* (Sund.), 1. vi. 1951, 1 ♂; 23. v. 1952, 1 ♂; 27. vii. 1955, 1 ♀, 1 ♂. First record from Jutland.
- Gnathonarium dentatum* (Wider), 19. vi. 1955, 1 ♀ (J. Dahl leg.); 31. vii. 1955, 31. vii. 1955, 1 ♀. Recorded from Tokkekøb Hegn and Hillerød in N.E.-Sealand and Skagen in North Jutland (Brændegaard 1928).
- Gongylidium rufipes* (Sund.), 23. viii. 1955, 1 ♀.
- Dismodicus bifrons* (Bl.), 27. vii. 1955, 1 ♀. The two other Danish records are from Fredericia in East Jutland and Spellinge Mose on Bornholm (Nielsen 1932). A number of other localities will be published in a later paper (Bøggild 1962).
- Dismodicus elevatus* (C. L. K.), 12. vi. 1950, 1 ♀ in heather; 4—17. vi. 1951, 7 ♀♀, 3 ♂♂; 1—15. vi. 1952, 9 ♀♀, 9 ♂♂; 19. vi. 1955, 1 ♀, 1 ♂ (J. Dahl leg.); 29—31. vii. 1955, 6 ♀♀. Known from Ulfshale on Møen (Deichmann 1920), Draved Skov (Cloudsley-Thompson 1955), Tranum Klit (Bøggild 1961), and four other localities (Bøggild 1962).
- Enidia bituberculata* (Wider), 1. vi. 1951, 1 ♂.
- Enidia cornuta* (Bl.), 4—13. vi. 1951, 5 ♀♀; 9—16. vi. 1952, 3 ♀♀, 1 ♂.
- Gonatium rubens* (Bl.), 6—7. x. 1954, 2 ♀♀. First record from Jutland.
- Maso sundevalli* (Westr.), 31. vii. 1955, 1 ♀. Known from Tranum Klit (Bøggild 1961) and four localities in N.E.-Sealand (Bøggild 1962).
- Pocadicnemis pumila* (Bl.), 18. vi. 1951, 1 ♂; 1—15. vi. 1952, 2 ♀♀; 19. vi. 1955, 5 ♂♂ (J. Dahl leg.). The only other Danish record is from Tranum Klit (Bøggild 1961) but it has also been found on Sealand (Bøggild 1962).



- Oedothorax apicatus* (Bl.), 3. vi. 1951, 1 ♀; 25—31. vii. 1955, 6 ♀♀, 1 ♂. One female, captured 29. vii. in the field just north of the forest, laid 26 eggs in captivity.
- Lophocarenum parallelum* (Wider), 7. x. 1954, 1 ♀ found together with *Centromerus sylvaticus* (q. v.). Known from five localities in N.E.-Sealand (Brændegaard 1928, Nielsen 1932) but new to Jutland.
- Silometopus elegans* (O. P.-C.), 19. vi. 1955, 3 ♀♀, 1 ♂ (J. Dahl leg.). This is the first Danish locality known. The species was recorded from Denmark 'without further locality' by Deichmann (1920).
- Tiso vagans* (Bl.), 30. vii. 1955, 1 ♂. New to Jutland, all other Danish records are from Sealand (Brændegaard 1928, Nielsen 1932, Bøggild 1962).
- Troxochrus scabriculus* (Westr.), 7. x. 1954, 1 ♀ found together with *Centromerus sylvaticus* (q. v.). New to Jutland. The only other Danish locality published is Saltholm, an island east of Copenhagen, (Nielsen 1932), but further three are known (Bøggild 1962).
- Minyriolus pusillus* (Wider), 10. x. 1954, 1 ♂. First record from Jutland.
- Mioxena blanda* (Simon), 7. x. 1954, 1 ♂, 1 juv., both from the soil surface in a spruce stand. First Danish record.
- Gongylidiellum vivum* (O. P.-C.), 19. vi. 1955, 1 ♀ (J. Dahl leg.). The only other Danish record is from Tranum Klit (Bøggild 1961).
- Micrargus herbigradus* (Bl.), 27. vii. 1955, 1 ♀. First record from Jutland. The only other Danish locality published is Horserød Hegn in N.E.-Sealand (Nielsen 1932).
- Savignia frontata* Bl., 7. x. 1954, 1 ♀ from the soil surface in a spruce stand; 19. vi. 1955, 4 ♀♀ (J. Dahl leg.); 29. vii. 1955, 1 ♀ from the field just north of the forest.
- Diplocephalus latifrons* (O. P.-C.), 30. v—17. vi. 1951, 2 ♀♀; 7. x. 1954, 1 ♀ from the soil surface in a spruce stand. First record from Jutland. The other five Danish localities published are all in N.E.-Sealand (Brændegaard 1928, Nielsen 1932).
- Erigone dentipalpis* (Wider), 30. v. 1951, 1 ♀; 19. vi. 1955, 1 ♀, 2 ♂♂ (J. Dahl leg.); 29—31. vii. 1955, 4 ♀♀.
- Erigone atra* (Bl.), 19. vi. 1955, 1 ♀, 1 ♂ (J. Dahl leg.); 25—31. vii. 1955, 16 ♀♀, 3 ♂♂; 23. viii. 1955, 1 ♀.

#### Linyphiidae.

- Phaulothrix hardyi* (Bl.), 10. x. 1954, 1 ♀ in a glade with very scant vegetation on the poor soil. First Danish record.
- Porrhomma pygmaeum* (Bl.), 19. vi. 1955, 3 ♀♀ (J. Dahl leg.).
- Agymeta conigera* (O. P.-C.), 4—16. vi. 1951, 3 ♂♂. Tranum Klit is the only other Danish locality known (Bøggild 1961).
- Meioneta rurestris* (C. L. K.), 7. x. 1954, 1 ♂; 31. vii. 1955, 1 ♂; 22. viii. 1955, 1 ♂. First record from Jutland.
- Centromerus sylvaticus* (Bl.), 7. x. 1954, 1 ♀ found together with *Lophocarenum parallelum*, *Troxochrus scabriculus* and *Centromerus prudens* at the surface of the soil in low grass vegetation near the main road through the forest; 10. x. 1954, 3 ♀♀ found together with *Centromerus expertus*, *C. dilutus*, *C. incilius* and *Bathypantes gracilis* in the rich low vegetation growing below high dry grass in a glade in the forest.

- Centromerus expertus* (O. P.-C.), 10. x. 1954, 1 ♂ found together with *C. sylvaticus* (q. v.). First Danish record.
- Centromerus prudens* (O. P.-C.), 7. x. 1954, 1 ♂ found together with *C. sylvaticus* (q. v.). First Danish record.
- Centromerus dilutus* (O. P.-C.), 10. x. 1954, 1 ♀ found together with *C. sylvaticus* (q. v.). The only other Danish locality known is Skærbæk at Silkeborg (Nielsen 1932).
- Centromerus incilius* (L. Koch), 10. x. 1954, 2 ♀♀ found together with *C. sylvaticus* (q. v.). First Danish record.
- Centromerita concinna* (Th.), 6—11. x. 1954, 2 ♀♀. First Danish record.
- Macrargus rufus* (Wider), 7—10. x. 1954, 2 ♀♀, 2 ♂♂. First record from Jutland. All previous Danish records are from Sealand (Brændegaard 1928, Nielsen 1932).
- Bathyphantes gracilis* (Bl.), 10. x. 1954, 2 ♀♀ found together with *Centromerus sylvaticus* (q. v.); 19. vi. 1955, 1 ♀, 1 ♂ (J. Dahl leg.); 28—31. vii. 1955, 8 ♀♀, 3 ♂♂; 23. viii. 1955, 1 ♂.
- Bathyphantes parvulus* (Westr.), 26—31. vii. 1955, 3 ♀♀.
- Bathyphantes nigrinus* (Westr.), 26. vii. 1955, 2 ♀♀.
- Poecilometeta globosa* (Wider), 9. vi. 1951, 1 ♀; 25—29. vii. 1955, 2 ♀♀, 1 ♂.
- Drapetisca socialis* (Sund.), 6—10. x. 1954, 16 ♀♀, 7 ♂♂; 22. viii. 1955, 1 ♀.
- Tapinopa longidens* (Wider), 10. x. 1954, 2 ♀♀; 31. vii. 1955, 1 juv. below a stone.
- Floronia bucculenta* (Cl.), 31. vii. 1955, 1 ♀-juv. below a stone; 22. viii. 1955, 1 ♀. First record from Jutland. The two previous Danish records are from N.E.-Sealand (Brændegaard 1928).
- Labulla thoracica* (Wider), 2. vi. 1951, 1 ♂-juv.; 6—7. x. 1954, 6 ♀♀, 1 ♂, 1 ♀-juv. First record from Jutland.
- Lepthyphantes leprosus* (Ohlert), 27. vii. 1955, 1 ♀; 23. viii. 1955, 1 ♀, 1 ♂, from the cow-shed in Bommerlundhus. First record from Jutland.
- Lepthyphantes minutus* (Bl.), 7. x. 1954, 1 ♂; 27. vii. 1955, 1 ♂-juv. that moulted in captivity to an adult male.
- Lepthyphantes alacris* (Bl.), 29. v. 1951, 1 ♀; 5. vi. 1952, 1 ♂; 7—10. x. 1954, 2 ♀♀, 2 ♂♂; 23. viii. 1955, 1 ♀. First record from Jutland.
- Lepthyphantes obscurus* (Bl.), 29. v—10. vi. 1951, 2 ♀♀, 3 ♂♂; 31. v. 1952, 1 ♂; 15. vi. 1952, 1 ♀, 1 ♂; 26—29. vii. 1955, 2 ♀♀.
- Lepthyphantes tenuis* (Bl.), 17. vi. 1951, 1 ♀; 28. vii. 1955, 2 ♀♀.
- Lepthyphantes mengei* Kulcz., 6—10. x. 1954, 6 ♀♀, 3 ♂♂; 19. vi. 1955, 2 ♂♂ (J. Dahl leg.); 26. vii. 1955, 2 ♀♀; 22—23. viii. 1955, 2 ♀♀.
- Lepthyphantes tenebricola* (Wider), 29. v—12. vi. 1951, 2 ♀♀, 3 ♂♂; 23. v—10. vi. 1952, 1 ♀, 1 ♂; 6. x. 1954, 1 ♀. First record from Jutland in so far as an older record from Vejle (Deichmann 1920) was altered by Brændegaard (1928).
- Linyphia triangularis* (Cl.), 6—10. x. 1954, 34 ♀♀, 1 ♂; 27—31. vii. 1955, 1 ♀, 12 ♂♂; 22—23. viii. 1955, 6 ♀♀, 9 ♂♂, 1 ♀-juv.
- Linyphia montana* (Cl.), 4—18. vi. 1951, 3 ♀♀.
- Linyphia clathrata* Sund., 4—17. vi. 1951, 4 ♀♀, 1 ♀-juv.; 12. vi. 1952, 2 ♀♀; 26—29. vii. 1955, 3 ♀♀.
- Linyphia pusilla* Sund., 1—18. vi. 1951, 6 ♀♀, 3 ♂♂; 21. v—15. vi. 1952, 9 ♀♀; 26—28. vii. 1955, 4 ♀♀.

*Pityohyphantes phrygianus* (C. L. K.), 7. vi. 1951, 1 ♀; 21. v. 1952, 1 ♀; 27—28. vii. 1955, 3 ♀♀ two of which had their webs on the low branches of an old spruce at the border of one of the larger roads through the forest.

### Acknowledgements.

Much material was collected for me by mag. scient. Ingerlise Dahl, mag. scient. Jørgen Dahl, forstkandidat B. Bejer Petersen and mag. scient. Erik Rasmussen during the *Lygaeonematus* campaign.

Dr S. L. Tuxen, Zoological Museum, provided me with working facilities during the early part of the determination work and took an interest in it that made me overcome the discouragement caused by the first acquaintance with spider taxonomy (starting with the lycosids).

The late Mr Svend Møller, schoolmaster at Tystofte, Mrs Karen Møller and Miss Inger Nielsen, also of Tystofte, gave me a Leitz stereomicroscope that was used for the majority of the determinations.

Iapetus Steenstrups Legat has supported the work with a grant.

Dr John S. Edwards, Cambridge School of Agriculture, has commented on the manuscript from a linguistic viewpoint.

I wish to express my gratitude for all the help received.

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