

Mededelingen van de Commissie inzake Wetenschappelijk
Onderzoek van de St. Pietersberg. No. 6.

THE ARACHNIDA OF THE ARTIFICIAL CAVES
IN SOUTHERN LIMBURG (NETHERLANDS).

by
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Four years ago we paid some attention to the Arachnida of the artificial caves in southern Limburg. In the course of 1949 the investigations on the fauna and flora of the Sint Pietersberg ("Mount" St. Peter) brought us anew in contact with the subterranean life.

We thought it necessary to make a comparison between the caves of the Sint Pietersberg and the other caves of southern Limburg.

The present paper contains the first results of our work, together with all data on this subject we found in the literature.

Of course there is still much to do. Southern Limburg has about 180 artificial caves, and for a clear apprehension of the occurrence of the Arachnida in these subterranean galleries it is necessary to visit a greater number of caves and to study the distribution of the animals in these caves in relation to the microclimate. Our investigations on this subject are still in course, and we hope to give a more complete report in a following paper.

The data published up to now on the Arachnida of our artificial caves are few. When we leave the Acari out of consideration, on which subject some publications appeared dealing with the parasites of bats, the following data are known.

Van Hasselt (1886) mentions as the only locality of *Meta menardi* the artificial caves in the Sint Pietersberg near Maastricht. In a later paper (1898) he mentions a locality of *Nesticus cellulanus*, near (not in) a cave in the neighbourhood of Valkenburg.

Schmitz (1938) also records *Meta menardi* for the subterranean galleries of the Sint Pietersberg, and remarks that this species is common in our caves, as well as in other.

In the extensive publication by Leruth (1939) on the fauna of the Belgian caves, we find 21 Arachnida non Acari, occurring in Belgian Limburg. Some of his data refer to the "grotte de Castert", situated on both sides of

the Dutch-Belgian frontier, and which is named by us the southern system of the Sint Pietersberg. The only spider collected by him in this cave is *Lepthyphantes leprosus*.

Finally an article appeared from our hand (Van der Hammen, 1947) in which 3 species of phalangids and 3 species of spiders are mentioned, collected in caves near Geulhem and in the Sint Pietersberg.

In 1949 and 1950 these few data were supplemented with material collected during the excursions of the Rijksmuseum van Natuurlijke Historie to southern Limburg. Up to now we have data of 24 localities and the total number of species of Arachnida non Acari found in our caves now comes to 28.

The material of the Acari contains some species collected on bats; some Parasitidae collected in guano of bats; and a number of Oribatidae, belonging to one species, collected in old mushroom beds. The Oribatid species only is mentioned in this article; the other groups have not yet been studied. We think, however, that the greater part of the material of Parasitidae belongs to *Cyrtolaelaps mucronatus* G. et R. Can., also mentioned by Leruth (1939) as extremely abundant in the guano of the bats in the "grotte de Castert".

The classification and numbering of the caves has been taken from a list used by Bels, Bels and Van Schaik for their investigations on bats. This complete list of artificial caves in southern Limburg has not yet been published, but will appear in the future.

In the following list the caves are mentioned in which our material was collected.

List of Caves.

I. Group Louwberg (on the West of the Jeker Valley). Caves behind Neercanne Castle (30, 150). Dry well under Neercanne Castle (without number).

II. Group Sint Pietersberg.

Noordelijk stelsel (Northern system) (2).

Zonnebergstelsel (Zonneberg system) (8).

In our first collections we possibly combined the material of this cave with that of the following.

Zonneberg II. Lateral gallery, right of entrance Zonneberg (9).

Stelsel Slavante (system Slavante) (15, 16).

Zuidelijk stelsel (Southern system). (Under

TABLE I.

[illegible]

a ventilating-shaft; this opening has no number).

Southern system, entrance to the maternity room of the greater horse-shoe bats (20).

III. Group Maasvalley.

We examined the caves or the Heerderberg in the neighbourhood of "Huize Sint Joseph", and a cave near Rijckholt.

Heerderberg:

Scharnderberg (Boerderijgrot) (105). Gallery behind the farmhouse (without number). Nieuwe Berg (44). Mariagrot (Lourdes grot) (45a). "Grot met poortje" (45c). Voorgrot (on the "Kiezelkuil") (46). Oude Berg (47). Cave along the "Holstraat" (48).

Rijckholt:

Steenberg (Holeberg) (116).

V. Group Sibbe.

Vallenberg (Sibber Bosgrot) (57).

VI. Group Valkenburg.

Gemeentegrot (68). Fluwelen grot (64).

VII. Group Geul valley, near Geulhem.

Leraarsgrot (91). Ravengrot (92). Grot van Schenk (163).

Not occurring in the Bels, Bels and Van Schaik list of caves:

Mechelen, air raid shelter in the marl.

A summary of the distribution of the material of the Arachnida non Acari is given in table I.

Among the material there are some species that are rare, or that even are new to our fauna. *Lepthyphantes nebulosus* and *Tegenaria agrestis* are new: *Lepthyphantes pallidus*, *Meta menardi*, *Cicurina cicur*, *Tegenaria silvestris* and *Tegenaria pagana* are known as rare in our country. The phalangids *Nemastoma saxonica* and *Nemastoma quadripunctatum*, collected as new to our fauna in 1946 (Van der Hammen, 1947), were not found again.

The table enables us to draw some preliminary conclusions on the distribution of the Arachnida.

Nesticus cellulanus was collected in 16 of the 24 caves, and by that it is the most frequent species. It was also found in an air raid shelter in the marl near Mechelen, and in the dark, almost dry well under Neercanne Castle.

Meta merianae was collected in 11 caves. It is striking that 8 of these 11 localities are caves in the Heerderberg, where the species was found in all visited caves. Moreover, it is

common there, while in the other caves we only collected a few specimens (Ravengrot 1 ♂, Vallenberg 1 juv., Neercanne 2 juv.).

The other species that were collected in more than one cave are the following (the numbers between brackets point out in how many caves they were found): *Lepthyphantes pallidus*, *Lepthyphantes leprosus* (6); *Amaurobius ferox* (5); *Tegenaria derhami* (4); *Pachygnatha clercki*, *Tegenaria silvestris*, *Tegenaria pagana* (3); *Amaurobius similis*, *Meta menardi* (2).

Leruth (1939) writes that in the artificial caves of Limburg *Lepthyphantes leprosus* takes the place of *Lepthyphantes pallidus*. We collected, however, both species in 6 caves. In one locality, we found both species together (Zonneberg system of the Sint Pietersberg).

Notable is the abundance of *Tegenaria pagana* in the cave behind Neercanne Castle, where hundreds of specimens of this very rare species occur, mainly concentrated in some of the galleries. Moreover this cave has a different character by the absence of *Lepthyphantes pallidus* and the abundance of *Lepthyphantes leprosus*.

Bristowe (1939) writes that spiders are absent from galleries with air currents. This does not agree with our observations. The locality of *Tegenaria pagana* near Neercanne, with its hundreds of specimens, is under the influence of a rather strong air current; the localities of *Lepthyphantes pallidus* in the northern system of the Sint Pietersberg are situated in the neighbourhood of the tunnel through the mountain, where also is a noticeable air movement.

We further think that spiders and harvestmen are less numerous at a greater distance from the entrances, mainly by the absence of food. Possibly this is one of the reasons why we collected few specimens in the Slavante and in the southern system of the Sint Pietersberg.

When we finally compare our list with that of other European caves, we can see that our caves lack the definite troglaphiles. However, there is a pronounced correspondence with the Belgian caves. The greater part of the Arachnida mentioned by Leruth (1939) was also found by us. The main difference is that the troglaphilous species of the genus *Porrhomma* were not yet found by us.

Systematic Review of the Species.

ARANEAE
AMAUROBIIDAE*Amaurobius ferox* (Wlk.).

Caves behind Neercanne Castle, 5-8.V.1949.
2 juv.; 16-19.IX.1949. 1 juv.

Well under Neercanne Castle, 22.IX.1949.
1 juv.

Heerderberg, Cave along the Holstraat, 7.IV.
1950. 1 ♂.

Valkenburg, Gemeentegrot, 28.XII.1949. 1
juv.; Fluwelen Grot, 28.XII.1949. 1 ♂, 1 juv.

Records from foreign caves: Belgium, Eng-
land, France, Germany, Hungary.

Amaurobius similis (Blk.).

Heerderberg, Voorgrot, 7.IV.1950. 1 ♂;
Oude berg, 6.IV.1950. 1 juv.

Records from foreign caves: Belgium, Ger-
many.

CLUBIONIDAE

Clubiona terrestris Westr.

Caves behind Neercanne Castle, 5-8.V.1949.
1 ♀.

PHOLCIDAE

Pholcus phalangioides (Fuessl.)

Sint Pietersberg, Zonneberg system, 21.IX.
1949. 1 juv.

Records from foreign caves: Bulgaria, France,
Italy, Portugal, Spain, Switzerland, Yugoslavia,
Algeria.

THERIDIIDAE

Theridion ovatum (Cl.) [= *redimitum* (L.)]

Geulhem, Grot van Schenk, 6.VIII.1946. 1
juv. (Van der Hammen, 1947, p. 480).

Nesticus cellulanus (Cl.)

Caves behind Neercanne Castle, 5-8.V.1949.
1 ♂, 6 ♀♀, 4 juv.; 10-14.VII.1949. 1 ♀; 30.
XII.1949. 2 ♀♀, 1 juv.

Well under Neercanne Castle, 22.IX.1949.
2 ♀♀, 3 juv.

Sint Pietersberg, Northern system, 22.IX.
1949. 1 ♂, 18 ♀♀; Zonneberg system, 21.IX.
1949. 1 ♂, 5 ♀♀, 8 juv.; Zonneberg II, 22.IV.
1950. 4 ♀♀; Cave 20, 22.IV.1950. 2 ♀♀,
2 juv.

Heerderberg, Gallery behind the farmhouse,
7.IV.1950. 3 juv.; Nieuwe Berg, 7.IV.1950. 1
juv.; Mariagrot, 15.VII.1949. 1 ♀; Voorgrot,
7.IV.1950. 5 ♀♀, 7 juv.; Oude Berg, 7.IV.
1950. 4 ♀♀, 6 juv.

Valkenburg, Fluwelen Grot, 28.XII.1949. 2
♂♂, 1 ♀.

Geuldal near Valkenburg, "prope speluncam"
1 ♀ (Van Hasselt, 1898, p. 7).

Geulhem, Leraarsgrot, 8.VIII.1946. 24 juv.
(Van der Hammen, 1947, p. 480); 27.
XII.1949. 2 juv.; Ravengrot, 27.XII.1949. 1 ♀;
Grot van Schenk, 6.VIII.1946. 2 ♀♀ (Van
der Hammen, 1947, p. 480).

Mechelen, air raid shelter in the marl, 18.
VIII.1949. 6 ♀♀.

Records from foreign caves: Austria, Bel-
gium, Bulgaria, Czechoslovakia, England,
France, Germany, Hungary, Italy, Roumania,
Spain, Switzerland, Yugoslavia.

LINYPHIIDAE

Diplocephalus cristatus (Blk.).

Sint Pietersberg, Southern system, under a
ventilating-shaft, 20.IX.1949. 1 ♂, 1 ♀.

Records from foreign caves: Belgium, Italy,
Yugoslavia.

Erigone dentipalpis (Wider).

Sint Pietersberg, Southern system, under a
ventilating-shaft, 20.IX.1949. 1 ♂.

Record from foreign caves: Roumania.

Lepthyphantes leprosus (Ohlert)

Caves behind Neercanne Castle, 5-8.V.1949.
3 ♀♀, 4 juv.; 10-14.VII.1949. 3 ♀♀, 2 juv.;
16-19.IX.1949. 7 ♂♂, 36 ♀♀, 7 juv.; 30.XII.
1949. 6 ♀♀, 3 juv.

Sint Pietersberg, Zonneberg system, 21.IX.
1949. 3 ♀♀; system Slavante, 24.IV.1950. 6

♀♀, 6 juv.; Southern system, "grotte de Castert" (Leruth, 1939, p. 381); Cave 20, 22.IV.1950. 1 ♀.

Heerderberg, Cave along the Holstraat, 7.IV.1950. 1 juv.

Records from foreign caves: Belgium (including Belgian Limburg), Bulgaria, England, France, Germany, Hungary, Spain, Yugoslavia.

Lepthyphantes nebulosus (Sund.)

Sint Pietersberg, Northern system, 22.IX.1949. 1 ♀.

Records from foreign caves: France, Germany.

This species is new to our faunal list. In the collection of the Rijksmuseum van Natuurlijke Historie there is also a specimen from Leiden.

Lepthyphantes pallidus (Cambr.)

Sint Pietersberg, Northern system, 22.IX.1949. 6 ♂♂, 12 ♀♀, 19 juv.; Zonneberg system. 11.VIII.1946. 1 ♂, 6 ♀♀, 1 juv. (*Lepthyphantes leprosus*, Van der Hammen, 1947, p. 480); 21.IX.1949. 5 ♂♂, 11 ♀♀, 1 juv.

Heerderberg, Scharnderberg, 30.XII.1949. 2 ♀♀; Nieuwe Berg, 7.IV.1950. 1 ♀.

Valkenburg, Fluwelen Grot, 28.XII.1949. 3 ♀♀.

Geulhem, Grot van Schenk, 6.VIII.1946. 1 ♂, 2 ♀♀, 10 juv. (*Lepthyphantes leprosus*, Van der Hammen, 1947, p. 480).

Records from foreign caves: Belgium (including Belgian Limburg), Bulgaria, Czechoslovakia, England, France, Germany, Ireland, Italy, Roumania, Spain, Algeria.

Up to now the only record of this species for the Netherlands was Nijmegen (Van Hasselt, 1886, p. 72).

Lepthyphantes tenuis (Blk.)

Caves behind Neercanne Castle, 16-19.IX.1949. 1 ♀.

Records from foreign caves: Belgium (including Belgian Limburg), Bulgaria.

Stemonyphantes lineatus (L.).

Sint Pietersberg, Northern system, 22.IX.1949. 1 ♂.

TETRAGNATHIDAE

Pachygnatha clercki Sund.

Sint Pietersberg, Zonneberg system, 21.IX.1949. 1 juv.

Heerderberg, Scharnderberg, 7.IV.1950. 2 ♀♀.

Valkenburg, Fluwelen Grot, 28.XII.1949. 1 ♂.

ARGYOPIDAE

Meta menardi (Latr.)

Sint Pietersberg, without further particulars (Van Hasselt, 1886, p. 78; Schmitz 1938, p. 287); Cave 20, 22.IV.1950. 1 ♀, 1 juv.

Rijkholt, Steenberg, 25.IV.1950. 1 ♀, 1 juv.

Records from foreign caves: Austria, Belgium, Bulgaria, England, France, Germany, Greece, Hungary, Ireland, Italy, Poland, Roumania, Russia, Spain, Switzerland, Yugoslavia, Algeria, North America, Madagascar.

This species seems to be rare in our country, even in caves. This is in contradiction to Schmitz (1938), who writes that this species is common in our caves. (Our recent investigations, that will be published in the future, make it clear that this species is restricted to a special type of cave).

Meta merianae (Scop.)

Caves behind Neercanne Castle, 16-19.IX.1949. 1 juv.; 30.XII.1949. 1 juv.

Heerderberg, Scharnderberg, 30.XII.1949. 2 ♀♀; 7.IV.1950. 4 ♂♂, 8 ♀♀, 5 juv.; Gallery behind the farmhouse, 7.IV.1950. 1 ♀, 6 juv.; Nieuwe Berg, 7.IV.1950. 2 ♂♂, 6 ♀♀, 4 juv.; Mariagrot, 15.VII.1949. 5 juv.; "Grot met poortje", 30.XII.1949. 1 ♂, 2 ♀♀, 2 juv.; Voorgrot, 7.IV.1950. 5 juv.; Oude Berg, 30.XII.1949. 3 juv.; 6-7.IV.1950. 1 ♂, 4 ♀♀, 11 juv.; Cave along the "Holstraat", 7.IV.1950. 1 juv.

Sibbe, Vallenberg, 28.XII.1949. 1 juv.

Geulhem, Ravengrot, 27.XII.1949. 1 ♂.

Records from foreign caves: Belgium, Bulgaria, Czechoslovakia, England, France, Germany, Hungary, Ireland, Italy, Poland, Roumania, Spain, Switzerland, Yugoslavia, Algeria, North America.

Meta segmentata (Cl.)

Sint Pietersberg, Zonneberg system, 21.IX. 1949. 1 juv.

Records from foreign caves: Bulgaria, France, Germany, Hungary, Roumania, Spain.

AGELENIDAE

Cicurina cicur (Fabr.)

Valkenburg, Fluwelen Grot, 28.XII.1949. 1 ♂.

Records from foreign caves: Belgium (including Belgian Limburg), France, Germany, Hungary, Italy.

Up to now, the only record from the Netherlands of this species was from Vorden (Van Hasselt, 1898, p. 2).

Tegenaria silvestris (L. Koch)

Sint Pietersberg, Zonneberg system, 21.IX. 1949. 1 ♂.

Heerderberg, Scharnderberg, 7.IV.1950. 1 ♂, 1 ♀; "Grot met poortje", 30.XII.1949. 1 ♂, 1 ♀.

Records from foreign caves: Belgium (including Belgian Limburg), Bulgaria, France, Germany, Italy, Roumania, Yugoslavia.

De Jong (1949) recorded this species as new to our fauna. There are also specimens from other parts of the Netherlands in the collection of the Rijksmuseum van Natuurlijke Historie.

Tegenaria atrica C. L. Koch.

Heerderberg, Voorgrot, 7.IV.1950. 1 ♀.

Records from foreign caves: Belgium, France, Germany, Spain.

Tegenaria derhami (Scop.)

Caves behind Neercanne Castle, 5-8.V.1949. 3 ♂♂, 5 ♀♀, 8 juv.; 10-14.VII.1949. 2 ♀♀; 16-19.IX.1949. 1 ♂, 6 juv.; 30.XII.1949. 1 ♀.

Sint Pietersberg, Zonneberg system, 21.IX. 1949. 1 ♀; system Slavante, 24.IV.1950. 1 juv.

Heerderberg, Voorgrot, 7.IV.1950. 1 ♂.

Records from foreign caves: Bulgaria, Germany, Hungary, Yugoslavia, North America.

Tegenaria pagana C. L. Koch

Caves behind Neercanne Castle, 5-8.V.1949. 4 ♂♂, 33 ♀♀, 10 juv.; 10-14.VII.1949. 18 ♀♀, 13 juv.; 16-19.IX.1949. 2 ♂♂, 17 ♀♀, 40 juv.; 30.XII.1949. 9 ♂♂, 6 ♀♀, 9 juv.

Sint Pietersberg, Zonneberg system, 22.IV. 1950. 1 juv.

Heerderberg, Scharnderberg, 30.XII.1949. 1 juv.

Van Hasselt (1886, pp. 34, 131) records this species as *Tegenaria urbana* from Oost Kapelle and Nijmegen. Simon (1937, pp. 1010, 1041), regards *Tegenaria urbana* as a subspecies of *Tegenaria pagana*. He records *T. pagana* from southern France, *T. pagana urbana* from caves in the greater part of France, and another subspecies from caves in Spain. We have no material to investigate these difficult subspecific relations.

Records from foreign caves: France, Spain, Switzerland, Algeria, Morocco.

Tegenaria agrestis (Wlk.)

Sint Pietersberg, Zonneberg system, 21.IX. 1949. 1 ♂.

Record from foreign caves: Italy.

This species is new to our fauna. It has a southern distribution. Up to now the most northern locality was the Alsace. In September 1948, we collected a female of this species in Vlodrop (northern part of Dutch Limburg).

LYCOSIDAE

Lycosa amentata (Cl.)

Caves behind Neercanne Castle, 30.XII.1949. 1 juv.

OPILIONES

Nemastoma saxonica Hn.

Geulhem, Leraarsgrot, 8.VIII.1946. 1 ♀ (Van der Hammen, 1947, p. 477, fig. 1).

Since our previous paper on this species we found a paper by Husson (1941) in which some more localities of this species are mentioned; one of that is overground. By that the foreign records from caves of this species are: France, Germany.

Nemastoma quadripunctatum (Perty)

Geulhem, Grot van Schenk, 6.VIII.1946. 1 ♂
(Van der Hammen, 1947, p. 479, fig. 2).

Records from foreign caves: Belgium, Roumania, Spain.

Opilio parietinus (De Geer)

Sint Pietersberg, Zonneberg system, 11.VIII.1946. 1 juv. (Van der Hammen, 1947, p. 480).

Records from foreign caves: Austria, Belgium (including Belgian Limburg), Czechoslovakia, Germany, Hungary, Roumania.

Liobunum rotundum (Latr.)

Sint Pietersberg, system Slavante, 21.IX.1949. 1 ♂; southern system (under a ventilating-shaft), 20.IX.1949. 1 ♂.

Records from foreign caves: Belgium (including Belgian Limburg), France, Italy, Spain.

ACARI
ORIBATEI*Oribella pectinata* (Mich.)

Sint Pietersberg, Zonneberg system, in old mushroom beds, 21.IX.1949. 20 ad.

There are no records from caves of this species, but there are some data in literature from mouse- and mole-nests. Oudemans (1912, p. 249, as *Xenillus limburgensis*) mentions one locality in the Netherlands: Sittard (mole-nest).

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Onderzoek van de St. Pietersberg. No. 7.

OVER GRAPHOSOMA LINEATUM (L.),
var. ITALICUM (Muell.)

door
Dr. H. C. BLÖTE

In de „Bouwstoffen voor eene Fauna van Nederland” vinden we in een lijst van „Nederlandsche Hemiptera” door H. W. de Graaf en S. C. Snellen van Vollenhoven (deel I, pag. 169) vermeld:

„*Trigonosoma lineatum* L.” — volgen enige citaten — „Meerdere exempl. in Noord-Brabant gevangen door den Heer van Ittersum, (v. B.).”

Deze mededeling is bijna woordelijk herhaald in de „Tweede Naamlijst van Inlandsche Hemiptera” bijeengebragt door Mr. H. W. de Graaf, G. A. Six en Mr. S. C. Snellen van Vollenhoven, (Tijdschrift voor Entomologie, 3, pag. 170).

Deze opgave lijkt heel geloofwaardig, temeer wanneer wij in aanmerking nemen dat de bedoelde soort — laten wij hem *Graphosoma lineatum* (L.) var. *italicum* (Muell.) noemen — een gemakkelijk herkenbare is, die zelfs door een leek niet met een ander insect zal worden verward.

In de zo onschuldig uitziende toevoeging „(v. B.)” schuilt echter een element van onzekerheid.