

# Some data on *Argenna patula* (Simon), *Perimones arenarius* (Emerton) and other spiders new to the Dutch spider fauna (Arachnida, Araneida)

by

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During field work in the Lauwerszeepolder and in Schiermonnikoog and during various short field trips twelve species of spiders new to the Netherlands were found. Some of these were mentioned before by the present authors (Meijer, 1973a and Van Wingerden, 1973), not knowing it concerned species unknown in Holland; more data are given here. Additional data can be given on the ecology and phenology of the species, which are regularly found in the study areas in the polder and Schiermonnikoog. A description of the study areas and the sampling methods used were given by Meijer (1971 and 1973b) for the Lauwerszeepolder and Van Wingerden (1973) for the Schiermonnikoog area.

## DICTYNIDAE

### *Argenna patula* (Simon)

This species lives in the study areas in the Lauwerszeepolder that have been in use since the polder ran dry in 1969. The first specimen, a male, was found on 17.VI.1969 in pitfall traps on the former saltmarsh near Vierhuizen. Table 1 summarises the catches in the traps in the four study areas in the polder proper.

Table 1. Summary of the catches of *Argenna patula*, *Praestigia duffeyi* and *Lepthyphantes insignis* in the study areas in and around the Lauwerszeepolder.

	Jan	Febr	Mrch	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<i>Argenna patula</i>												
♂ ♂	—	—	—	1	8	3	—	—	—	—	—	—
♀ ♀	—	—	—	1	1	3	2	1	1	1	—	—
juv.	—	—	—	—	—	—	—	—	—	—	1	1
<i>Praestigia duffeyi</i>												
♂ ♂	—	—	1	10	13	—	—	—	—	—	—	—
♀ ♀	—	—	—	3	48	4	—	—	—	—	—	—
juv.	—	—	—	—	—	—	—	1	—	—	—	—
<i>Lepthyphantes insignis</i>												
♂ ♂	—	—	—	—	—	1	—	4	3	1	1	1
♀ ♀	1	—	1	—	2	4	1	7	2	3	3	—

*A. patula* is an inhabitant of the "Strandvlakte", a former part of the North Sea beach enclosed by an artificial sand dike, on the Frisian Island of Schiermonnikoog. It especially occurs in tussocks and swards of *Agrostis stolonifera* L., *Festuca rubra* L. and *Carex extensa* Good., which are somewhat higher and therefore drier than the rest of the area.

Data on population density (Table 2) were obtained by means of a number of series of 40 samples of 625 cm<sup>2</sup> each (Van Wingerden, 1973). As no other dictynid has built up a population in the "Strandvlakte" juvenile specimens of *A. patula* could readily be identified by the calamistrum; carapax width was used to separate juvenile stages. The frequency distribution of the carapax width suggests that specimens with a carapax wider than 0.64 mm belong to the third free-living instar and the subadult instar; it was not possible to distinguish between these stages.

Table 2. Density (numbers per m<sup>2</sup>) of different phases of *Argenna patula* in the "Strandvlakte" on Schiermonnikoog.

	26.IV.1973	18.V.1972	9.VI.1972	30.VI.1972	21.VII.1972	3.IX.1972	8.XII.1972	26.IV.1972
Males	0.2	1.0	1.2	0.5	0.3	—	—	—
Females	0.4	0.2	2.8	1.9	0.9	—	1.2	—
Egg-sacs:								
with developing eggs	—	—	—	0.2	1.9	—	—	—
parasitized	—	—	—	—	0.4	0.2	—	—
empty	—	—	—	—	0.6	1.8	—	—
Eggs	—	—	—	2.0	10.9	—	—	—
Juveniles:								
carapax width < 0.64 mm	1.7	2.2	2.3	—	—	8.1	3.2	2.2
carapax width > 0.64 mm	3.6	1.0	1.4	1.2	1.4	0.4	2.3	2.2

Table 3. Density (numbers per m<sup>2</sup>) of different phases of *Perimones arenarius* in the "Strandvlakte" on Schiermonnikoog.

	26.IV.1972	18.V.1972	9.VI.1972	21.VII.1972	3.IX.1972	23.X.1972	8.XII.1972	26.IV.1973
Males	1.3	0.9	—	—	—	—	—	3.6
Females, non-fertilised	0.2	—	—	—	—	—	—	0.6
Females, fertilised	2.0	1.8	1.2	—	—	—	—	2.6
Egg-sacs:								
with developing eggs	—	0.6	2.8	—	—	—	—	—
parasitized	—	—	0.2	0.3	—	—	—	—
empty	—	—	—	3.0	0.2	—	—	—
Eggs	—	10.9	38.8	—	—	—	—	—
Juveniles	—	—	—	15.8	14.4	—	—	—
♂, subadult	—	—	—	—	—	2.8	2.3	—
♀, subadult	—	—	—	—	—	4.3	1.9	0.2



*A. patula* would seem to have one generation a year; adults occurred regularly from April till July inclusive. Adult females were occasionally found in mid-winter, whereas the third and subadult instar occurred throughout the year. This illustrates the poor synchronization of the *A. patula* population.

Egg-sacs are produced in summer, they contain 4—10 eggs (average 6.2 in 10 cocoons). The hemispherical cocoons are deposited in small hollows among grass roots. Unidentified ichneumonids parasitise on the cocoons.

During feeding experiments female *A. patula* were seen to feed on *Drosophila melanogaster*, the collembolan *Isotoma viridis* (Bourlet) and young spiders; the collembolan *Hypogastrura viatica* Tullb. was not eaten (pers. comm. Miss H. Goddijn).

De Jong (1949) recorded *Argenna pallida* L. Koch on 16.VIII.1946 on the "Boschplaat" of the Frisian Island of Terschelling. On inspection of a vulva preparation prepared by De Jong the specimen proved to be *A. patula*. In the Van Helsdingen collection *A. patula* is present from "De Beer", Hoek van Holland, one male and four females, 18.V.1962 (Nr. 1827).

Knülle (1953), in his study of the spider fauna of river banks and sea shores in Northern Germany, found *A. patula* in that part of the saltmarsh he described as *Agrostetum albae stoloniferae* and *Juncetum gerardi*, a habitat comparable to that in which the Schiermonnikoog specimens were found.

According to Wiehle (1953) this species lives "am Meeresufer, soweit die Salzwirkung reicht"; it is known from England, France, Germany, Spain and Algeria.

## OONOPIDAE

### *Oonops domesticus* De Dalmaz

On 13.VII.1972 the first specimen was found in Grijpskerk, indoors on a wall. Specimens were seen almost daily from mid-August till October and far less regularly during the rest of the year. During later years fewer specimens were seen, and less often than in 1972.

Among the *Oonops*-material in the collections of the Leiden museum *O. domesticus* proved to be present:

Nr. 5099 - one ♀, VIII.1931, Leiden.

Nr. 5101 - one ♀, Leiden, indoors.

Nr. 6858 - eight ♀♀, Holland, no other data known (recorded as *O. pulcher* Templeton).

Nr. 5100 was unjustly identified as *O. domesticus*, is proved to be *O. pulcher*.

Little is known about the general distribution of this species (Wiehle, 1953).

## GNAPHOSIDAE

### *Zelotes apricorum* (L. Koch)

This species, already reported for the Frisian Island of Ameland (Meijer, 1973a), proves to be new for the Dutch fauna. In England it is "generally distributed" (Locket & Millidge, 1951).

## ERIGONIDAE

### *Perimones arenarius* (Emerton)

Dondale and Redner (1972) showed the European *P. britteni* (Jackson) to be identical to the American species.

*P. arenarius* was found on the sand dike on Schiermonnikoog under marram grass on 26.V.1970. Since then it has proved to be rather common in the "Strandvlakte" where it especially occurs in the same habitat as *Argenna patula*. Data on population density (Table 3) were obtained in the same way as in *A. patula*.

*Perimones arenarius* has one generation a year and winters as a subadult. The presence of a sealing of the epigyne indicates whether copulation has taken place (cf. Wiehle, 1953, p. 109). The data in Table 3 show that the copulation period in *P. arenarius* in Schiermonnikoog is in April. Egg-sacs (Fig. 1) are produced in May and June, they are attached to blades of grass up to 15 cm above soil surface and can be found



abundantly especially on *Carex extensa* tussocks. The cocoon has a shining, white silk outer covering and contains 6—21 (average 14.7 in 20 egg-sacs) orange-red eggs.

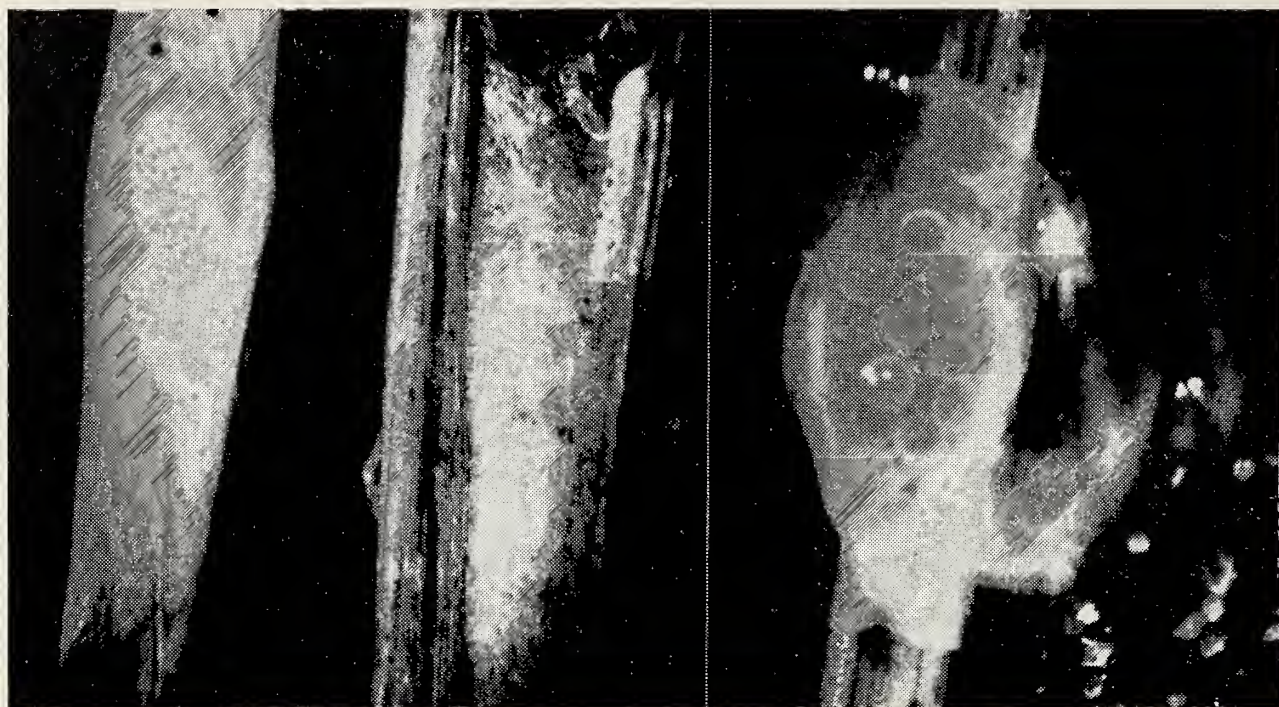


Fig. 1. (from left to right) Egg-sac of *Perimones arenarius*; ditto attached between two blades of grass, seen from behind; egg-sac of *P. arenarius*, opened to show eggs.

The cocoons are parasitised by ichneumonids (*Gelis pumilis* (Foerster) and an unidentified *Gelis* species, det. Miss. A. Hendrikse). If an egg-sac is parasitised, one parasite grows up at the cost of all spider eggs.

*P. arenarius* feeds on the collembolans *Hypogastrura viatica* and *Isotoma viridis*, as well as on juvenile spiders (a.o. *Erigone arctica* White).

Aeronautic behaviour of males was found to occur in May.

European records of this holarctic species: England, Germany and Sweden (Dondale & Redner, 1972).

#### *Praestigia duffeyi* Millidge

Some 75 specimens were caught in 1970 in the Lauwerszeepolder, mostly in the area "Silt" which has the heaviest soil and had at that time the best developed vegetation (a very open stand of *Salicornia europaea* L. with less than 10% cover) of all study areas in the polder. In 1971 only three females and in 1972 only one male and one immature specimen were recorded.

Up till now the species was recorded only in England and Western Germany. According to Heydemann (in Wiehle, 1963) the species lives everywhere on the German North Sea coast saltmarshes. After reclamation of the saltmarshes it stays present as long as the salinity of the soil does not drop below 10‰ and the soil is sufficiently moist. The soil of "Silt" still had a salinity well over 50‰ in September 1972 and was at that time as wet as in 1970. Nevertheless *P. duffeyi* was practically absent from the polder in 1972.

Heydeman's (1960) data on the phenology of this species agree with those in Table 1.

#### *Ceratinopsis stativa* (Simon)

This species was already recorded for Ameland (Meijer, 1973a). A female was caught on 25.V.1972 amongst grass in the Eastern dunes (near the "Kooiboerderij") of Schiermonnikoog. Two other females were caught on 21.VI.1972 and 5.VIII.1972 in the Lauwerszeepolder in a windowtrap and on a fence-wire respectively. Both specimens, at the moment of capture, were apparently engaged in an aeronautic trip.

These records fill a gap in the distribution of the species as it was recorded from



Ireland, England, France, Germany, Switzerland, Czechoslovakia and Yugoslavia (Wiehle, 1960).

*Mioxena blanda* (Simon)

On "Coarse Sand", the study area with the driest, most sandy soil in the Lauwerszeepolder one female was found on 25.X.1972. Wiehle (1960) and Locket & Millidge (1953) mention very wet (river banks, L. & M.) as well as dry (marram grass) habitats. The species is reported from England, Germany, France and Switzerland (Wiehle, 1960).

*Dismodicus bifrons* (Blackwall)

This species, which was reported for a number of localities on Ameland (Meijer, 1973a), also proved to be new to the Netherlands. On Schiermonnikoog the species was found on 28.V.1970 among grass near the "Berkenplas" (one male), on a dune in the central dunes of the island (one male and one female) and on 24.V.1973 eight ♂♂ and four ♀♀ among *Salix repens* L. and *Calamagrostis epigeios* Roth near the "Berkenplas". Finally one male was found on 9.VI.1973 in fir-wood litter on "De Eese" near Steenwijk.

All these habitats fit with the description of Locket & Millidge (1951): "On low bushes and underwood, and amongst moss and undergrowth, usually in or near swampy areas". Wiehle (1960) reported this species from Europe and Siberia.

*Minyrioloides maritimus* Crocker et Parker

A male of this recently described species was found on 28.V.1970 in short turf on top of a dune next to a small slack in the central dunes of Schiermonnikoog. On the same island five ♂♂ and eleven ♀♀ were found in dead marram grass on the sand dike (29.V.1973). In the yellow dunes of Ameland near Hollum one ♂ and seven ♀♀ were found in a tussock of marram grass on 31.V.1971.

Up till now the species has only been recorded in England (Crocker & Parker, 1970), where it is exclusively found in yellow dunes. Van Heerdt & Mörzer Bruyns (1960) recorded *Hypomma bituberculatum* (Wider) for the yellow dunes near Oosterend, Terschelling. Van Helsdingen (1963) reidentified these specimens as *Minyrioloides trifrons* (O.P.-Cambridge). Seven females of the Terschelling material are in the collections of the Leiden Museum (Nr. 3969); on re-inspection they proved to be *M. maritimus*.

*Troxochrus cirriformis* (O.P.-Cambridge)

One male was found on 14.III.1973 in a pitfall trap among nettles, thistles and reed along a ditch in the Westpolder near Vierhuizen. (This area was described by Meijer, 1972). In the same trap three ♂♂ and one ♀ of *T. scabriculus* (Westring) were caught since 1969.

## LINYPHIIDAE

*Lepthyphantes insignis* (O.P.-Cambridge)

From 1969 till 1973 14 specimens of this species were caught in the pitfall traps in the Westpolder, two specimens on the former saltmarsh near Vierhuizen and 19 specimens in the study areas in the Lauwerszeepolder.

This species is very rare in England (Locket & Millidge, 1953) and in Germany: Heydemann (1960) caught five ♂♂ and two ♀♀. He assumed that *L. insignis* is an eurychronous summer species; the data in Table 1 support this assumption.

*L. insignis* was found in England in "undergrowth and in moles' nests", in Northern Germany on saltmarshes (*Festucetum rubrae litoralis*, Heydemann, 1960). The present records, except those in the polder proper, fit in with these data. The occurrence in 1969 of *L. insignis* in the virtually bare study areas in the Lauwerszeepolder shows that dispersal can take this species out of its normal habitat (dense vegetation).

The species is only known from Southern England and Northern Germany (Wiehle, 1963).



*Porrhomma errans* (Blackwall)

A male was found on 20.IV.1968 in a weed-grown, rather dry part of a garden in Grijskerk. This species is recorded in England (Locket & Millidge, 1953), where it is rather rare.

## SUMMARY

Spiders new to the Dutch fauna are reported with some notes on their habitat, phenology and geographical distribution. Details on population density and other aspects of the ecology of *Argenna patula* and *Perimones arenarius* are given.

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