

SPIDERS FROM THE AZORES AND MADEIRA¹

By JACQUES DENIS²

Figs. 1-23, 1 table.

The spiders here dealt with have been kindly sent to me for examination by Prof. Dr. Per Brinck who collected them together with Prof. Dr. Erik Dahl during the Lund University Expedition in 1957 from late February to the middle of April in the archipelago of the Azores and at the end of April in Madeira. The faunas of both archipelagoes are rather different from one another and it has, therefore, been deemed preferable to list species separately according to the localities whence they come.

I. Spiders from the Azores

As compared with Madeira and the Canary Islands, the spider fauna of the Azores is very poor in species. A check-list by Berland (1932) amounts to but 57 species. Amongst these, one, namely *Zodarium* sp., was known only from a very young specimen which was specifically undeterminable; another, *Chiracanthium erraticum* (Walck.), was also recorded from a young specimen the determination of which is doubtful; besides, the so-called *Oonops pulcher* Templ. probably belongs to another species.

Next, Bacelar (1937), publishing a list of 29 species, brought the total number up to 60, adding *Chiracanthium mildei* L. Koch, *Aulacocyba subitanea* (O. P. Cambr.) and *Araneus marmoreus* Clerck.

Finally the whole short list by Schenkel (1938) consists of species formerly recorded from the Azores.

In Berland's opinion, 4 species were supposed to be endemic, a very poor proportion indeed for an island fauna. In fact it was still poorer, as

1) Report No. 36 from the Lund University Expedition in 1957 to the Azores and Madeira.

2) Correspondant du Muséum national d'Histoire naturelle (Paris).

Zelotes oceanicus (Simon) proves to be a synonym of *Z. lyonneti* (Sav. & Aud.), which has been found in Madeira, the Canary Islands, Croatia and Egypt, and *Achaearanea assorensis* (Berl.) was discovered in Portugal in 1932, Madeira and Colorado. Consequently only 2 endemic species remained, *Auximus denticelis* (Simon) and *Anerigone fradeorum* (Berl.), and one variety, *Dipoena testaceomarginata oceanica* (Simon).

At least 53 species are represented in Brinck and Dahl's collection. Unfortunately collecting seems to have been done too early in the season for spiders and a number of young specimens cannot be named with certainty. At all events 34 species had already been recorded from the Azores and 19 are added to the list, which is a considerable improvement to our former knowledge. Among these additions, 3 belong to genera (*Drassodes*, *Telamonia*, *Minicia*) not hitherto known to have representatives in the Azores, 4 are doubtful (*Evophrys erratica*, *Zilla diodia*, *Araneus sturmi* and *Araneus bituberculatus*) and 4 are supposed not to have been described as yet. The last 8 spiders include 4 species living in temperate Europe, 1 (*Leptyphantes stygius*) in South Europe, 2 (*Micaria oceanica* and *Dendryphantes catus*) are in common with Madeira and one probably introduced America, but recently recorded from England and Madeira.

The proportion of endemic species is brought from 3.3 up to 6.4% and remains very poor (ca. 40% for Madeira); two other species only are peculiar to the Atlantic Islands (*Micaria oceanica* and *Dendryphantes catus*).

Fifteen species are added to the fauna of Santa Maria, 15 to São Miguel, 8 to Pico, 11 to Faial, 1 to Terceira and 4 to Flores. As seen from the table below, São Miguel is by far the best known island as far as Spiders are concerned, with 70 species and 88.6% of the total number; this may possibly be a consequence of its comparatively great surface and of a greater variety of biotopes, but undoubtedly results from more intensive collecting. On the other hand the number of spiders known from Terceira or Pico seems not to be in accordance with the number of species that actually live there.

List of species

Fam. *Dysderidae*

Dysdera crocata C. L. Koch, 1839

Santa Maria: Pico Alto, 550 m (loc. 42), 19.III., 1 ♂, under a stone on the top. Água dos Moros, SE of Pico Alto (loc. 43), 19.III., 1 ♂, under a

stone. Aeroporto (loc. 44.45), 19/20.III, 1 ♂, under a stone, on wet sandy ground.

São Miguel: Vila Franca do Campo (loc. 2), niveau IV., 28.II., 2 ♂ 1 ♀, under stones. Charco da Madeira, 6 km N of Ponta Delgada (loc. 4), 1.III., 1 ♂ 3 ♀, on shore. São Pópulo, 7.5 km E of Ponta Delgada (loc. 10), 4.III., 2 ♀ 2 juv., on grassy ground at the sea. Fonte da Rocha, 4.5 km W of Ponta Delgada (loc. 11), 5.III., 1 ♀, at the spring. Fonte Grande, SE Feteiras (loc. 12), 6.III., 1 ♀ 1 juv., at the spring: 5 juv., at the spring in foena: 1 juv., in detritus on the south steep. Caldeira das Sete Cidades (loc. 18), 8.III., 4 ♂ 1 ♀ 1 juv., under stones in the outer tunnel mouth; 1 ♀, in *Cryptomeria* plantation. Lagoa das Furnas (loc. 22), 10.III., 1 juv., in *Cryptomeria* plantation. Relva, tanque da Rocha Quebrada, freshwater lake (loc. 31), 15.III., 1 ♂ 2 ♀ 1 juv., under stones; 1 ♀ 1 juv., under stones on shore. Relva, nascente dos Lagos (loc. 32), 15.III., 4 juv., at the spring. Lagoa do Congro (loc. 34), 16.III., 1 ♂, under a stone in a forest. Fonte at Casas Telhadas, SW of Ribeira Grande (loc. 36), 18.III., 2 ♀ 1 juv., under stones on grassy ground. Caldeira das Sete Cidades, at Lagoa Azul (loc. 50), 21.III., 1 juv., under moss and bark on E crater edge. 1 km W of Ribeira Seca, W of Ribeira Grande (loc. 53), 22.III., 1 ♀, on sandy grassy ground. Lagoa do Fogo (loc. 54), 22.III., 1 juv., under stone under the crater edge. 3 km E of Ribeirinha (N coast) (loc. 63), 25.III., 1 juv., in the ravine. 3 km S of Pico da Pedra (loc. 64), 25.III., 1 ♀, in scrub; 1 juv., under a stone; 1 ♂, under a stone among bushes.

Pico: Volc. Pico, W side, 8.IV., ca. 300 m (loc. 97), 1 ♀, under a stone: ca. 350 m (loc. 99), 1 ♀, under a stone; 1 juv., in the forest. 4 km WNW of Lajes (loc. 101), 9.IV., 1 ♂, under a stone in a wood. 10 km NNW of Lajes (loc. 102), 9.IV., 1 ♀, in *Erica* bush. São João (loc. 103), 9.IV., 1 juv., in volcanic gravel on rocky shore.

Faial: Horta, Ribeira dos Flamengos (loc. 71), 31-III., 1 ♀, under a stone in the ravine. Praia do Almoxarife (loc. 72), 31-III., 1 ♂, under a stone on sandy grassy ground; 1 ♀, on sandy shore; 1.IV., 1 ♂, under a stone on the slope against the shore. 0.5 km WNW of Ribeirinha (loc. 73), 1.IV., 1 ♂ 3 ♀, under stones. Porto da Boca da Ribeira, 1 km E of Ribeirinha (loc. 74), 1.IV., 1 ♂ 1 ♀ 1 juv., under stones. Porto do Salão (loc. 75), 1.IV., 1 ♀, on a rocky steep; 1 ♀, under a stone on shore. Ribeira das Cabras, 1 km NW of Praia do Norte (loc. 76), 2.IV., 1 ♀, under a stone. Fajã, 2 km W of Praia do Norte (loc. 78), 1 ♀, under a stone in an ash field with

moss. 2 km SW of Praia do Norte (loc. 79), 2.IV., 1 ♀, under a stone on recent lava fields. Zona do Mistério, 2 km W of Praia do Norte (loc. 80), 2.IV., 1 ♀, in foerna in a wood; 1 ♀, in detritus in a wood. Costa da Náu, 3 km NW of Capêlo (loc. 88), 4.IV., 1 ♂, under a stone at the road. Cabeço do Canto (loc. 89), 4.IV., 1 ♂, in Erica bush. Pool 1 km ESE of Cabeço do Fogo (loc. 90), 4.IV., 1 ♂ 1 juv., in Erica bush, foerna; 2 juv., in Erica bush; 1 juv., under a stone on grassy ground. 3 km WNW of Pedro Miguel (loc. 92), 5.IV., 1 ♂ 1 ♀, under stones on damp grassy ground at the pond. Nasce Água, 3 km S of Cedros (loc. 93), 5.IV., 1 ♀, on damp grassy ground at a stream. Caldeira (loc. 105), 10.IV., 1 juv., under a stone.

Terceira: Caldeira de Guilherme Moniz (loc. 65), 27.III., 1 ♀, under a stone on the E side. Lagoa do Ginjal (loc. 66), 27.III., 1 ♂, under a stone; 1 ♀, under a stone on shore. 0.5 km E of Angra do Heroísmo (loc. 70), 28.III., 1 ♀, under a stone.

Flores: Ribeira d'Além da Fazenda (loc. 108), 14-IV., 1 ♀ 1 juv., at a stream in a meadow; 1 juv., at a spring near the stream; 1 ♀ in the wet slope down to the stream.

A nearly cosmopolitan spider, recorded from all the Atlantic Islands.

Fam. *Gnaphosidae*

Drassodes sp.

Faial: 0.5 km WNW of Ribeirinha (loc. 73), 1.IV., 1 ♂ subad., under a stone.

No *Drassodes* s. str. had hitherto been recorded from the Azores; the genus has representatives in Madeira and the Salvagê Islands.

Zelotes sp.

São Miguel. Fonte Grande (loc. 12), 6.III., 1 juv., at the spring.

This very young specimen probably belongs either to *Z. lyonnети* (Sav. & Aud.) or *Z. longipes* (L Koch), both of which have been found in São Miguel.

Fam. *Clubionidae*

Micaria sp. (*oceanica* sp. n.)

Santa Maria: 1 km W of Praia, pond I (loc. 46), 20.III., 1 ♀ subad.

A nearly full-grown female which seems to belong to the same species as other specimens collected in Madeira and described below (p. 95).

***Chiracanthium* sp.**

São Miguel: Ribeira da Praia, 3 km W of Vila Franca do Campo (loc. 27), 13.III., 1 juv., swept in vegetation (ferns, Vinca).

A specimen with abdomen wholly greenish yellow, which seems not to agree very well with young ones of *Ch. mildei* L. Koch, previously recorded from São Miguel (Bacelar 1937), when at the same stage of growth.

Fam. ***Thomisidae******Xysticus nubilus* Simon, 1875**

Santa Maria: Limestone area (loc. 48), 20.III., 1 ♂, under a stone, among vegetation.

This spider is widespread in the whole Mediterranean region and occurs in all the Atlantic Islands. A lot of young specimens probably belong to the same species, but this is not quite certain as another one, very similar in appearance, also lives in the Azores:

Santa Maria: Praia (loc. 47), 20.III., 1 juv., under a stone at the ponds; 1 ♂ subad., under a stone at the road. Limestone Area (loc. 48), 20.III., 1 juv., swept in vegetation on the S coast.

São Miguel: Vila Franca do Campo (loc. 2), 28.II., 1 juv., under a stone, niveau IV. São Pópulo, 7.5 km E of Ponta Delgada (loc. 3), 1.III., 1 juv., on sandy grassy ground. Fonte da Rocha (loc. 11), 1 ♂ subad., near rocky spring. Relva, 15.III., tanque da Rocha Quebrada (loc. 31), 1 juv., under a stone; nascente dos Lagos (loc. 32), 1 pull., at the rocks at the spring. Fonte at Casas Telhadas (loc. 36), 18.III., 1 juv., under a stone on grassy ground. Ribeira Seca, W of Ribeira Grande (loc. 37), 18.III., 4 juv., under stones on shore; 3 juv., in dunes; juv., in drift material on a sandy shore. 1 km W of Ribeira Seca (loc. 53), 22.III., 1 juv., under a stone on sandy grassy ground. 3 km E of Ribeirinha (loc. 63), 25.III., 1 juv., under a stone in a ravine.

Faial: Costa da Nau (loc. 88), 4.IV. 1 pull., on Erica bush.

***Xysticus cor* Canestrini, 1873**

Fig. 1.

São Miguel: Lagoa do Páu pique (loc. 15), 15.III., 1 ♀, at the lake,

This determination is rather doubtful; the epigyne (fig. 1) differs somewhat from the usual form, but there is a good deal of variation in the shape of this organ.

The species is widespread in South Europe; if the above identification is correct this species is new to the Atlantic Islands.

Fam. *Salticidae*

Synageles venator (Lucas, 1846)

São Miguel: Relva, nascente dos Lagos (loc. 32), 15.III., 1 ♂ subad., at the spring.

Faial: Praia do Almojarife (loc. 72), I.IV., 1 ♂ subad., under a stone on the slope down to the shore.

A great part of Europe, chiefly in the South, and the Mediterranean region.

Telamonia sp. (?)

Santa Maria: Praia (loc. 47), 20.III., 1 ♀ subad., under a stone.

Characters of this specimen agree tolerably well with the genus *Telamonia*; it may be *T. castresiana* (Grube), but cephalothorax and legs are darker in colour, the former with a short median and narrow marginal, white stripe, and the black parts on its abdomen are very poorly defined. The species occurs in South Europe and Siberia.

Evophrys vafra (Blackwall, 1867)

São Miguel: São Pópulo (loc. 10), 4.III., 1 ♀, on a wall under a succulent. Ribeira dos Lagos, 1 km N of Povoação (loc. 60), 2 ♂ subad., under stones.

Other young specimens possibly belong to the same species, their determination is however doubtful: Nascente dos Lagos at Relva (loc. 32), 15.III., 1 ♀ subad., at the spring; São João (loc. 103), 9.IV., 1 juv., in volcanic gravel on rocky shore.

Mediterranean region, Atlantic Islands (Azores, Madeira).

Evophrys sp.

A young specimen from São João (Pico, loc. 103, 9.IV., on grassy ground) may be *E. erratica* (Walck.), a widespread spider in Europe, but hitherto unknown from the Atlantic Islands.

Chalcoscirtus infimus (Simon, 1868)

São Miguel: Ribeira da Praia (loc. 27), 13.III., 1 ♀ subad., swept in vegetation (ferns, Vinca). Furnas, hot springs (loc. 59), 1 ♂ subad.

Pico: São João (loc. 103), 9.IV., 1 juv., in volcanic gravel on rocky shore; 3 ♂ subad., volcanic sand beach on rocky shore.

Mediterranean region; a few localities in West and Middle Europe.

Neon reticulatus (Blackwall, 1853)

Faial: Cabeço do Fogo (loc. 90), 4.IV., 1 ♂ subad., on Erica bush.

Europe, Siberia; Azores.

Salticus mutabilis Lucas, 1846

São Miguel: Ribeira das três Voltas, near Ribeira Chã 23.III., 1 ♂ 1 juv.

Faial: Praia do Almoxarife (loc. 72). 1.IV., 1 juv., under a stone on the slope down to the shore.

Western Europe and Mediterranean region; Atlantic Islands (Azores, Madeira).

Dendryphantes catus (Blackwall, 1867)

São Miguel: Ribeira da Praia (loc. 27), 13.III., 1 ♀. swept in vegetation (ferns, Vinca).

A spider new to the Azores, hitherto known only from Madeira and the Canary Islands.

Dendryphantes nidicolens (Walckenaer, 1802)

São Miguel: Caldeiras, 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 ♀, among decaying leaves above the hot spring. Probably two young specimens, the former from Lagoa do Fogo (loc. 54, 22.III.) in heath (Calluna, Vaccinium), the latter from 1 km S of Maia (loc. 62, 25.III.) in the ravine.

The whole of Europe and Mediterranean region. In other Atlantic Islands this species is replaced by others.

Phlegra moesta sp. n.

Fig. 2.

♀. Cephal. 1.75 mm.; total length 4.50 mm.

Cephalothorax brown with a black marginal line and the ocular area

black, coated with long, rather thick whitish and orange-red hairs, these pure white on the sides of the thoracic part: a paler, rather narrow stripe in the middle of the thoracic part, not reaching the posterior margin; no other markings. Sternum and palces brownish. Legs pale brownish, furnished with white hairs; darker markings on the upper side of femora, the basis of patellae, a wide basal ring on tibiae and two similar rings, basal and apical, on metatarsi. Palp yellowish, furnished with white hairs. Abdomen dark brownish, thickly coated with whitish and orange-red hairs on the back and sides, wholly white on the underside; on the upperside a few paler, very faintly marked spots, three in front, two more apart from one another about the middle, followed by some transverse chevrons.

Eye-lashes orange-red above the eyes, whitish below. A few long white hairs sparse on the clypeus.

Tibiae I and II provided with 3-3, metatarsi I and II with 2-2 lower spines, without a lateral one.

The epigyne (fig. 2) is quite typical for the genus.

Santa Maria: Praia (loc. 47), 20.III., 1 ♀, under a stone on sandy grassy ground on shore.

No representative of the genus had hitherto been known from the Atlantic Islands; the present species is remarkable in lacking the longitudinal white stripes that are usually found on cephalothorax and abdomen.

Fam. *Pholcidae*

Pholcus phalangioides (Fuessli, 1775)

São Miguel: Furnas, park (loc. 24), 11.III., 1 ♀ 1 juv., in a house.

A cosmopolitan spider, absent however from cold countries; all the Atlantic Islands.

Fam. *Therididae*

Achaearanea assorensis (Berland, 1932)

São Miguel: Lagoa das Furnas (loc. 22), 10.III., 1 ♀, at shore, on burnt land. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 2 ♀, under stones among decaying leaves. Ponta Delgada, 15.III., 1 ♀ subad. 1 juv. (? in very bad state), in house. Relva, nascente dos Lagós (loc. 32), 15.III., 2 ♀, under stones. Tanque 1 km SE of Lagoa do Congro (loc. 33), 16.III., 1 ♀, at the pond. Ribeira das Sete Cidades at Lagoa Azul (loc. 51), 21.III., 1 ♂

subad., from sieved leaves (*Platanus* and *Edyechium*) and moss from the crater edge.

Portugal, Azores, Madeira; California (possibly introduced with grapes).

Achaearana tepidariorum (C. L. Koch, 1841)

São Miguel: Valley of Ribeira Quente, 2 km SE of Furnas (loc. 23), 11.III., 1 ♀, on shore of the river.

A cosmopolitan spider, living in warm out-buildings in cold countries; Madeira.

Theridium bellicosum Simon, 1873

São Miguel: 1 km N of Feteiras (loc. 5), 2.III., 1 ♀, in a ravine in foerna. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 ♂, on grassy ground. River 5 km SSE of Ribeira Grande (loc. 29), 14.III., 1 ♂, swept in vegetation.

West and Middle Europe; Madeira.

Theridium species vary in pattern to such an extent that many young specimens are quite undeterminable. They are for certain neither *Th. rufipes* Luc. nor *Th. denticulatum* (Walck.), both of which have already been recorded from the Azores; they probably belong to at least two different species:

Sp. a. — São Miguel: Sete Cidade, at Lagoa Verde (loc. 8), 2.III., 1 juv., in the steep at the spring; in *Cryptomeria* plantation (loc. 51), 21.III., 1 ♂ subad. Lagoa do Canário (loc. 17), 7.III., 1 juv., at the lake. Lagoa das Furnas (loc. 22), 10.III., 1 juv., on the wall of the hotel. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 ♂ subad. 4 juv., on grassy mossy ground in hot stream of the river. — Faial: Praia do Almozarife (loc. 72), 31.III., 1 juv., niveau III.

Sp. b. — São Miguel: Relva, nascente dos Lagos (loc. 32), 15.III., 1 juv., at the spring. Ribeira das Sete Cidades at Lagoa Azul (loc. 51), 21.III., 1 juv., from sieved leaves and moss from the crater edge. Ribeira das três Voltas (loc. 55), 23.III., 1 juv., niveau III., in rocky tidal zone.

Teutana grossa (C. L. Koch, 1838)

Santa Maria: Aeroporto (loc. 44-45), 19/20.III., 1 juv., under a stone on sandy wet ground.

São Miguel: Ribeira Grande (loc. 1), 27.II., 1 juv., at the edge of dunes;

1 juv., W shore at the edge of dunes. Vila Franca do Campo (loc. 2), 28.II., 1 juv., 4 pulli, niveau IV, under stones. São Pópulo (loc. 3), 1.III., 1 juv., on sandy grassy ground. Sete Cidades at Lagoa Azul (loc. 7), 2.III., 1 ♀, under a stone on the the shore. São Pópulo (loc. 10), 4.III., 1 pull., on grassy ground on the sea shore. Caldeira das Sete Cidades (loc. 18), 8.III., 1 ♀, under a stone in the outer tunnel mouth. Lagoa das Furnas (loc. 22), 10.III., 2 ♀ 2 juv., at shore, on burnt land; 2 ♀, on at shore, on burnt land. Valley of Ribeira Quente (loc. 23), 11.III., on the river bank. Relva, nascente dos Lagos (loc. 32), 15.III., 1 juv., at the spring; 1 juv., under a stone. Ribeira das três Voltas, near Ribeira Chã (loc. 35), 16.III., 2 ♀, under stones on sandy clay; 1 juv., under dry leaves at the road. Ribeira Seca (loc. 37), 18.III., 2 juv. 1 pull., under stones an sandy grassy ground; 1 juv., under a stone on dry grassy ground; 1 ♀, under plant-roots on rocky shore. 1 km W of Ribeira Seca (loc. 53), 22.III., 1 ♂ subad. 1 ♀ 1 juv. 1 pull., on sandy grassy ground.

Pico: São João (loc. 103), 9.IV., 1 ♀, rocky shore, volcanic sand beach; 1 juv., rocky shore, volcanic gravel.

Terceira: 0.5 km E of Angra do Heroísmo (loc. 70), 1 ♀ subad., in a ravine.

A nearly cosmopolitan spider; all the Atlantic Islands.

Euplognatha mandibularis (Lucas, 1846)

São Miguel: São Pópulo, (loc. 3), 1.III., 2 ♀, on sandy grassy ground. Fonte Grande (loc. 12), 6.III., 1 juv., under a crag at the spring. Ribeira Seca (loc. 37), 18.III., 1 ♀, under a stone on dry grassy ground.

A great part of Europe, Mediterranean region. The records from Madeira seem to be erroneous (Denis 1962).

Fam. ***Erigonidae***

Minicia sp.

São Miguel: Pico Verde (loc. 61), 24.III., 1 juv., at the spring.

This young specimen much resembles *M. marginella* (Wider), but cephalothorax and sternum are more stained with blackish than usual; this is possibly a mere individual variation. The genus is easily recognized. It includes four species, two from Europe, one from Algeria and the latter from the Himalayas; another, described from Greenland, is wrong for the

genus and is a synonym of *Hybocoptus dentipalpis* (Em.) [Holm in litt.]. *M. marginella* is widespread in West and Central Europe, but it is lacking in the British Isles.

Erigone vagans Savigny & Audouin, 1825

Santa Maria: 1 km W of Praia, pond I (loc. 46), 20.III., 1 ♂.

Erigone vagans spinosa (O. P. Cambridge, 1872)

Terceira: Freshwater lagoon N of Praia da Victória (loc. 68), 27.III., 1 ♂ 1 ♀.

In the authors opinion these two forms are only allometric growth forms of the same species in the male sex. In fact *E. vagans spinosa* shows a good deal of variation, but I have never met with truly intermediate specimens between this and *E. vagans vagans*: however, Lockett & Millidge (1953) record such individuals from Finchley (London). It is worth noting that every male in a lot from Porto Santo sent by Dr. W. S. Bristowe belongs to the typical form. The only other places of capture I know of are Egypt, Algeria, the Pyrenees and Gironde in France. *E. vagans spinosa* is a very widespread spider in nearly the whole of Europe (except in the North), the Mediterranean region, the Atlantic Islands, South Africa, Singapore and Hawaii.

At any rate it seems quite impossible to distinguish females. In the present collection there are specimens from:

São Miguel: Charco da Madeira (loc. 4), 1.III., 1 ♀, on shore. Lagoa das Furnas (loc. 22), 10.III., 1 ♂ subad. 2 ♀, at shore, on burnt land; 2 ♀, in drift material. Valley of Ribeira Quente (loc. 23), 11.III., 1 ♀, under a stone on shore. 3 km N of Furnas (loc. 25), 11.III., 1 ♀, in heath. Relva, nascente dos Lagos (loc. 32), 15.III., 4 ♀, on sandy ground at the spring.

Erigone dentipalpis (Wider, 1834)

São Miguel: 2 km NW of Ponta Delgada, 3.III., 1 ♀, in a swimming pool. Valley of Ribeira Quente (loc. 23), 11.III., 1 ♂, under a stone on shore. 1 km N of Ribeira Seca (loc. 53), 22.III., 1 ♂, on sandy grassy ground.

A spider widespread throughout Europe and the Mediterranean region; Bristowe (1939) recorded it from the Azores, but I am not acquainted the original reference.

Erigone atra (Blackwall, 1841)

São Miguel: Charco da Madeira (loc. 4), 1.III., 1 ♀. Lagoa das Furnas (loc. 22), 10.III., 1 ♀, at shore, on burnt land; 1 ♀, in drift material. 3 km W of Furnas (loc. 25), 11.III., 1 ♀, in heath. Ponta Delgada, 13.III., 1 ♀ 1 pull., among decaying leaves (Berlese sample).

Europe and Russian Asia as far as Kamchatka, North America, Azores.

Erigone promiscua (O. P. Cambridge, 1872)

São Miguel: São Pópulo (loc. 3), 1.III., 1 ♀, on sandy grassy ground.

British Isles; a few localities in France, Spain, Portugal and Morocco (High Atlas); Faroes.

A subadult male collected under a stone on shore of Lagoa do Fogo (S. Miguel, loc. 54, 22.III.) belongs to *Erigone* s. str.

Aulacocyba subitanea (O. P. Cambridge, 1875)

Santa Maria: Praia (loc. 47), 20.III., 1 ♂, under a stone on shore, sandy grassy ground.

São Miguel: São Pópulo (loc. 3), 1.III., 1 ♀, on sandy grassy ground.

Europe, North Africa; North America (probably introduced); Azores: Graciosa (Bacelar 1937).

It is quite impossible to determine some young specimens belonging to Simon's subfamily *Erigoninae*:

São Miguel: São Pópulo (loc. 3), 1.III., 1 juv., on grassy ground near the sea. Sete Cidades, at Lagoa Verde (loc. 8), 2.III., 1 pull., in drift material. Lagoa das Furnas (loc. 22), 10.III., 1 ♀ subad. 3 pulli, in drift material. Ponta Delgada, 16.III., 2 pulli, on grassy ground in a garden. 1 km W of Ribeira Seca (loc. 53), 22.III., 1 pull., on the dunes.

Ostearius melanopygius (O. P. Cambridge, 1879)

São Miguel: São Pópulo (loc. 3), 1.III., 1 ♂ 1 juv., on sandy grassy ground. Sete Cidades, at Lagoa Azul (loc. 7), 2.III., 1 ♀, under a stone on shore. São Pópulo (loc. 10), 4.III., 1 ♀, on grassy ground at the sea. Lagoa das Furnas (loc. 22), 10.III., 1 ♀ 1 ♀ subad., at shore, on burnt land; 1 ♀ 1 ♀ subad., in drift material; 1 ♀ (a melanic specimen), at shore, on burnt land.

Fonte at Casas Telhadas (loc. 36), 18.III., 1 ♂ 1 ♀, under stones on grassy ground. Ribeira Seca (loc. 37), 18.III., 1 ♂ 1 pull., in drift material on a sandy shore; 1 juv., under a stone on dry grassy ground. Lagoa do Fogo (loc. 54), 22.III., 1 ♀, subad., under a stone on shore. Ribeira das Três Voltas, 23.III., 1 juv.

A spider native of the southern Hemisphere, introduced in England probably from New Zealand; now quite established in Germany, France, Spain, Portugal, Morocco and the Atlantic Islands (Azores, Madeira, Canaries).

Anerigone fradeorum (Berland, 1932) (sub *Parevigone*)

Figs. 3 & 4.

Santa Maria: Valverde (loc. 49), 20.III., 1 ♀.

São Miguel: Lagoa das Furnas (loc. 22), 10.III., 1 ♀, in drift material.

Faial: Baía da Areia das Fontes, 1 km N of Praia do Norte (loc. 77), 2.IV., 1 ♀, under a stone on shore. Pool 1 km ESE of Cabeço do Fogo (loc. 90), 4.IV., 1 ♂, among Hepaticae in Erica bush.

These are the first records since the original description from Furnas.

Tibiae i-iii are armed with 2 spines, tibia iv with only one spine; these are rather thin, but clearly conspicuous, even in the male (contrary to Berland's assertion); on pair iv, eT_4 falls between 0.250 and 0.275; (1:D) T_4 between 1.750 and 2 (♂). All metatarsi bear a trichobothrium set very near the middle, but in the apical half of the joint; tbM_4 less than 0.550.

As a rule the epigyne seems to be very obscure (fig. 3); it consists of a dark plate somewhat raised at its posterior edge; in one specimen (loc. 22) it is more on a level and reaches greatly beyond the epigastric furrow (fig. 4).

The latter specimen is comparatively small (cephal. 1.10 mm; total length 2.45 mm) and dark-coloured, the upper side of its abdomen is nearly entirely blackish with a double row of large greyish spots in front followed by transverse bars.

In pattern the only male collected is intermediate between this dark form and that pictured by Berland. The two other females are quite typical in this respect.

Meioneta rurestris (C. L. Koch, 1836)

São Miguel: São Pópulo (loc. 3), 1.III., 1 ♀, on sandy grassy ground.

Europe and Mediterranean region, Siberia; Atlantic Islands (Azores, ? Madeira, Canaries).

Meioneta fuscipalpis (C. L. Koch, 1836)

Santa Maria: Miradouro dos Picos, 2 km ENE of Almagreira, 440 m (loc. 39), 19.III., 1 ♀, under a stone. Limestone area (loc. 48), 20.III., 1 ♂, under a stone in vegetation; 1 ♂, swept in the vegetation on the S coast.

São Miguel: São Pópulo (loc. 3), 1.III., 1 ♀, on sandy grassy ground.

Europe, but usually less common than the preceding one; North Africa; Azores, Madeira.

A young *Meioneta* from Faial (Cabeço do Fogo, loc. 90, 1.IV., in *Erica* bush, foerna), belongs to either of the above species.

Fam. *Linyphiidae**Leptyphantes tenuis* (Blackwall, 1852)

Santa Maria: Pico Alto, 19.III., 590 m (loc. 40), 1 ♀, in the top vegetation; 550 m (loc. 42), 1 juv., in vegetation at the spring.

São Miguel: Vila Franca do Campo (loc. 2), 28.II., 1 ♀, niveau II, on volcanic sand beach. São Pópulo (loc. 3), 1.III., 1 ♀, on sandy grassy ground. 1 km N of Feteiras (loc. 5), 2.III., 1 ♀ subad., in foerna in a ravine. Lomba da Cruz, 3 km NW of Feteiras (loc. 6), 2.III., 1 ♂, under a stone. Sete Cidades, 2.III., at Lagoa Azul (loc. 7), 1 ♀; at Lagoa Verde (loc. 8), 1 ♂ subad. Fonte Grande (loc. 12), 6.III., 1 ♂ subad., at the spring. Lagoa do Carvão (loc. 13), 7.III., 1 ♂ subad. 1 ♀, under stones. Lagoa do Canário (loc. 17), 7.III., 1 ♂, at the lake. Caldeira das Sete Cidades (loc. 18), 8.III., 1 ♀, under a stone in the outer tunnel mouth; 1 pull., on a stone on the shore of Lagoa Azul; 1 ♀, subad., in *Cryptomeria* plantation. 2 km E of Ribeira Grande (loc. 19), 9.III., 2 juv., on Cruciferae. Lagoa das Furnas (loc. 22), 10.III., 2 ♀, in the hotel park; 1 ♀, under stones and leaves; 1 juv., in drift material. Valley of Ribeira Quente (loc. 23), 11.III., 1 ♂, under stones and dead plants in the river ravine; 1 ♂, no other data; 1 juv., on shore of the river. Furnas, park (loc. 24), 11.III., 1 ♀. Ribeira da Praia (loc. 27, 13.III., 1 ♀, under a stone at the stream. Relva, nascente dos Lagos (loc. 32), 15.III., 1 ♀, at the spring. Tanque 1 km SE of Lagoa do Congro (loc. 33), 16.III., 1 ♂, 1 ♂, subad., at the pond; 1 ♀ 1 juv., under stones. Ribeira Seca (loc. 37), 18.III., 1 juv., under a stone on shore. Caldeira das Sete Cidades at Lagoa Azul (loc. 50), 21.III., 1 ♀, among leaves and stones in *Eucalyptus* forest; 1 ♀, under a stone. Lagoa do Fogo (loc. 54), 22.III., 1 ♀ 1 pull., under stones on the crater edge (*Calluna*); 1 ♀, under a stone on shore. River NW of

Água Retorta (loc. 57), 23.III., 1 ♀, under a stone on the slopes of the river. Ribeira das Três Voltas, 23.III., 4 ♀. 1 km S of Maia (loc. 62), 25.III., 1 ♀, in the stream ravine.

Pico: Volc. Pico, W side, 8.IV., ca. 800 m (loc. 97), 1 ♀; ca. 350 m (loc. 99), 1 ♀; under stones.

Faial: Praia do Almoxarife (loc. 72), 31.III., 2 ♀, under stones on a dune; 1 ♀, under a stone on sandy grassy ground; II.V., 1 ♀, under a stone on grassy ground. 0.5 km WNW of Ribeirinha (loc. 73), 1.IV., 1 ♀, under stones and plants; 1 pull., in plant roots in a damp ravine. Porto do Salão (loc. 75), 1.IV., 1 juv., under a stone on shore. Ribeira das Cabras (loc. 76), 2.IV., 1 ♀, under a stone. Baía da Areia das Fontes (loc. 77), 2.IV., 1 ♀, under a stone. Costa da Náu (loc. 88), 4.IV., 1 ♂ 1 ♂ subad. 2 juv., in Erica bush; 1 ♀, no other data. Cabeço do Canto (loc. 89), 4.IV., 1 ♂ subad., in Erica bush. Cabeço do Fogo (loc. 90), 4.IV., 1 juv., in Erica bush, foerna. 3 km WNW of Pedro Miguel (loc. 92), 5.IV., 1 ♀, under a stone in a damp meadow at the pond. Caldeira (loc. 105), 10.IV., 1 pull., swept in Juniperus.

Flores: Ribeira d'Além da Fazenda (loc. 108), 14.IV., 1 ♀, on dry grassy ground; 1 ♀, at a stream on a meadow.

Since this species seems to be the only representative of its group in the Azores, inadult specimens collected have been supposed to belong to it. There is however an exception: 3 young specimens from Nasce Água (Faial, loc. 93, 5.IV., under boards) bear a similar pattern, but their legs are rather darkened with tibiae, metatarsi and tarsi entirely brownish, and femora striped with brownish on their sides; they possibly belong to another species.

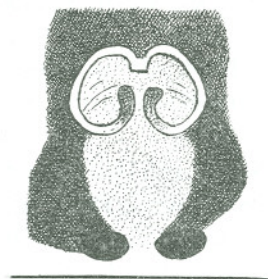
L. tenuis is a very common spider, widespread in the whole of Europe and Russian Asia; Azores, Madeira.

Leptyphantes stygius Simon, 1884

Figs. 5-9.

São Miguel: Lagoa do Congro (loc. 34), 16.III., 1 ♂, under a stone in a forest. Lagoa do Fogo (loc. 54), 22.III., 1 ♂, under a stone on shore.

Fig. 1. - *Xysticus cor* Canestr. (?), epigyne. Fig. 2. - *Phlegra moesta* sp. n., epigyne. Fig. 3-4. - *Anerigone fradeorum* (Berl.), epigyne. Fig. 5. - *Leptyphantes stygius* E. S., male palp from outer side. Fig. 6. - *Id.*, male palp with bulb expanded. Fig. 7. - *Id.*, epigyne from above. Fig. 8. - *Id.*, epigyne from behind. Fig. 9. - *Id.*, genital tubercle from side.



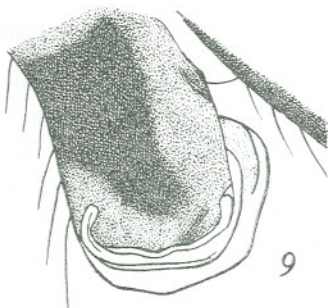
1



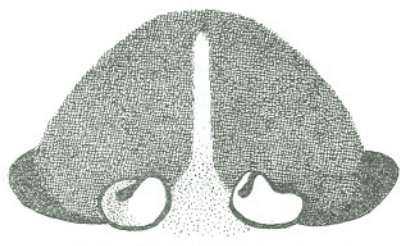
6



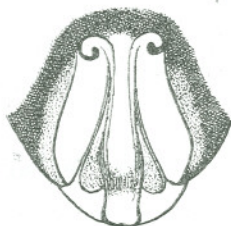
5



9



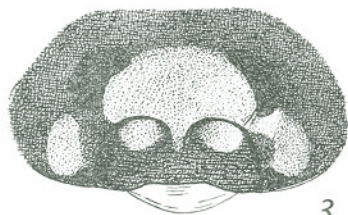
2



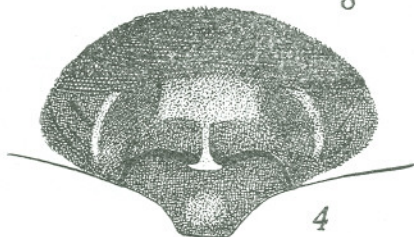
7



8



3



4

Faial: Baía da Areia das Fontes (loc. 77), 2.IV., 1 ♀, under a stone. 2 km SW of Praia do Norte (loc. 79), 2.IV., 1 ♀, under a stone on recent lava fields.

Species known from caves in the South of France, Spain and Baleares; it lives also in the open air on the French Mediterranean coast and in Portugal.

The male palp (fig. 5-6) is very characteristic; however in Azorean specimens the subapical tooth of the lamella is very reduced, almost lacking. No drawing of the genital tubercle of the female has ever been published so I figure here (figs. 7-9) the three usual aspects of this organ.

Fam. *Nesticidae*

Nesticus pallidus Emerton, 1875

Santa Maria: Fonte do Mourato, 3 km NE of Vila do Porto (loc. 38), 19.III., 1 ♀, under a stone in a garden.

São Miguel: 3 km N of Furnas (loc. 25), 11.III., 1 ♀, in the heath. 1 km W of Ribeira Seca (loc. 53), 22.III., 1 ♀, on sandy grassy ground.

The geographical distribution of this spider is a rather puzzling one; for a long time it has been known only from America (as far South as Brazil, and as far North as British Columbia and Nova Scotia), the West Indies, Bermudas and Hawaii. It was discovered in 1951 in England (Cumberland) and found in 1957 both in Madeira and the Azores. It has possibly been introduced recently in Europe and the Atlantic Islands.

Fam. *Tetragnathidae*

Meta merianae (Scopoli, 1763)

São Miguel: Sete Cidades, 2.III., at Lagoa Azul (loc. 7), 1 juv., under a stone on the shore; at Lagoa Verde (loc. 8), 1 ♀, in the steep at the spring. Lagoa do Pau Pique (loc. 15), 7.III., 1 ♂ subad. 1 ♀ 1 juv., at the lake. Ribeira da Praia (loc. 27), 13.III., 2 juv., on the river bank; 2 juv., under stones below the bridge. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 pull. (?), at hot stream on grassy mossy ground; 1 juv., near the river. River 5 km SSE of Ribeira Grande (loc. 29), 14.III., 1 juv., sieved from leaves of Eucalyptus and Edyechium. Relva, nascente dos Lagos (loc. 32), 15.III., 1 ♀ 1 ♀ subad., at the spring. Sete Cidades (loc. 51), 21.III., 1 ♀, in Cryptomeria plantation. Lagoa do Fogo (loc. 54), 22.III.,

4 pulli, under stones under the crater edge; 10 pulli, swept in vegetation (Calluna, Vaccinium) in wet heath. 1.5 km S of Maia (loc. 62), 25.III., 2 pulli, in ravine. 3 km S of Pico da Pedra (loc. 64), 25.III., 1 juv., under a stone among bushes.

Faial: Nasce Água, 3 km S of Cedros (loc. 93), 5.IV., 1 juv., near the river; 1 juv., under moss on a rock with overflowing water. Caldeira (loc. 105), 10.IV., 2 pulli, swept in Juniperus.

No doubt individuals that were found under stones or on the ground had fallen from their webs after being disturbed; such is the case also with other orb-weaver spiders below.

M. merianae is widespread in Europe and the West Mediterranean region; it has been recorded from Madeira.

***Tetragnatha* sp. (*extensa* Linné, 1758)**

Only rather young specimens were collected; they are supposed to belong to *T. extensa* which has already been recorded from the Azores. It is a holarctic spider.

São Miguel: Charco da Madeira (loc. 4), 1.III., 21 juv., and pulli, on shore. Lagoa das Furnas (loc. 22), 10.III., 5 juv., on vegetation. Ribeira da Praia (loc. 27), 13.III., 4 juv., swept in vegetation (ferns, Vinca); 1 pull., on the river bank. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 juv., near a hot spring. Caldeira das Sete Cidades at Lagoa Azul (loc. 50), 21.III., 3 juv., on flowers on the shore; 1 ♂ subad., on the shore. 1 km W of Ribeira Seca (loc. 53), 22.III., 1 juv., on sandy grassy ground. Furnas, hot springs (loc. 59), 24.III., 1 juv.

Flores: Central plateau S and SE of Caldeira Comprida (loc. 109), 14.IV., 2 pulli.

Fam. ***Argiopidae***

***Zygiella x-notata* (Clerck, 1757)**

A very young specimen from the shore of Tanque da Rocha Quebrada at Relva (loc. 31, 15.III.) certainly belongs to this holarctic species, the only one of this genus to have been recorded from the Azores, Madeira and the Canary Islands.

***Mangora acalypha* (Walckenaer, 1802)**

São Miguel: São Pópulo (loc. 10), 4.III., 1 ♂ subad., on grassy ground at the sea. Ribeira da Praia (loc. 27), 13.III., 1 ♂ subad. 1 ♀ subad. 3 juv.,

swept in vegetation (ferns, Vinca). Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 juv., in hot ravine; 1 ♂ subad., near the river. River 5 km SSE of Ribeira Grande (loc. 29), 14.III., 1 ♂ subad. 5 juv., swept in vegetation. Relva, nascente dos Lagos (loc. 32), 15.III., 1 ♂ 2 juv., 3 pulli, at the spring. Ribeira Seca (loc. 37), 1 ♀ subad., on grass on the dunes 20 m above the sea; 2 ♀, on grassy ground in the dunes 15-20 m above the sea. Lagoa do Fogo (loc. 54), 22.III., 14 juv., in heath (*Calluna*, *Vaccinium*); 3 ♂ subad. 25 juv. and pulli, swept in vegetation (*Calluna*, *Vaccinium*) in wet heath; 1 juv., under a stone under the crater edge; 1 ♀ subad., on shore of a freshwater lake.

Faial: Praia do Almoxarife (loc. 72), 31.III., 1 ♂ subad., 1 juv., 1 pull., niveau III.

Flores: Central plateau S and SE of Caldeira Comprida (loc. 109), 14.IV., 1 juv.

Palaeartic region; all the Atlantic Islands.

Zilla diodia (Walckenaer, 1802) (?)

São Miguel; River NW Água Retorta (loc. 57), 23.III., 1 juv., on shore. Europe, except in the North; Mediterranean region.

Araneus redii (Scopoli, 1763)

São Miguel: Ribeira Seca (loc. 37), 18.III., 1 ♂, on grass in the dunes, 20 m above the sea.

Palaeartic region; all the Atlantic Islands; West and Equatorial Africa; Saint Helena.

Araneus sturmi v-notata (Thorell, 1875) (?)

São Miguel: Valley of Ribeira Quente (loc. 23), 11.III., 1 juv.

A. sturmi (Hahn) is widespread nearly all over Europe, its subspecies *v-notata* occurs in the Mediterranean region.

Araneus bituberculatus (Walckenaer, 1802) (?)

Faial: Caldeira (loc. 105), 10.IV., 1 juv., under a stone on grass y ground
Palaeartic region.

Fam. *Mimetidae**Ero flammeola* Simon, 1881

São Miguel: Ponta Delgada, 15.III., 1 ♀, in a house.

A cephalothorax only, from Ribeira dos Lagos at Povoação (loc. 60, 24.III.), probably belongs to this species.

Southern Europe, Algeria; Azores, Madeira.

Fam. *Agelenidae**Tegenaria domestica* (Clerck, 1757)

Santa Maria: Miradouro dos Picos, 440 m (loc. 39), 19.III., 1 ♂, under a stone; 1 ♀ 3 juv., under stones and dead plants. Aeroporto (loc. 44.45), 19/20.III., 1 ♀ 1 juv., under stones.

São Miguel: São Pópulo (loc. 3), 1.III., 1 ♀ 1 juv., on shore in grass and Mesembryanthemum. Lagoa das Furnas (loc. 22), 10.III., 4 ♀, in the hotel park.

Tegenaria pagana C. L. Koch, 1841

Santa Maria: Aeroporto (loc. 44.45), 19/20.III., 1 ♀, under stones.

São Miguel: Sete Cidades at Lagoa Verde (loc. 8), 2.III., 1 ♀, in the steep at the spring. Caldeira das Sete Cidades (loc. 18), 8.III., 1 ♂ subad. 1 ♀ juv., under stones in the outer tunnel mouth; 1 ♀ 1 juv., at a bay. Valley of Ribeira Quente (loc. 23), 11.III., 1 ♀, on shore of the river; 1 ♂, on shore of a stream. 2 km SW of Porto Formoso (loc. 25 b), 11.III., 1 ♀, in a stone pit. Ribeira da Praia (loc. 27), 13.III., 1 ♀, under a stone below the bridge. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 2 ♀ 1 juv., under stones. Relva, nascente dos Lagos (loc. 32), 15.III., 1 ♀ 1 pull., at the spring. Lagoa do Congro (loc. 34), 16.III., 1 ♀, in a forest. Bodes Mountains, SE of Furnas, 23.III., 1 ♀, in a stony steep.

Pico: 4 km WNW of Lajes (loc. 101), 9.IV., 1 ♀ 1 juv., under stones.

Faial: Cabeço do Canto (loc. 89), 1 ♂ subad. 1 ♀ 1 juv., on Erica bush.

Middle and West Europe, Mediterranean region, all the Atlantic Islands, Saint-Helena.

These two latter species much resemble one another; the basal joint of upper spinnerets is usually darkened in *T. pagana*, but this character is not perfectly developed. This circumstance prevents me from attributing quite a lot of young specimens to either species, so much the more as

both are sometimes found close together (Aeroporto of Santa Maria).

São Miguel. Vila Franca do Campo (loc. 2). 28.II., 1 juv., niveau II, on volcanic sand beach. São Pópulo (loc. 3). 1.III., 1 juv. on sandy grassy ground; (loc. 10), 6.III., 1 pull., on grassy ground at the sea. Fonte Grande (loc. 12), 6.III., 3 juv., at the spring. Caldeira das Sete Cidades (loc. 18). 2 juv., 1 pull., at a freshwater lake. Lagoa das Furnas (loc. 22), 10.III., 1 ♀ subad., under stones and leaves. Caldeira 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 juv., above the hot spring. Relva, tanque da Rocha Quebrada (loc. 31), 15.III., 1 ♂ subad. 1 juv., under stones; 1 pull., at a freshwater lake. Ribeira das três Voltas, 23.III., 2 juv. Bodes Mts., SE of Furnas, 23.III., 1 ♀ subad., in a stony steep. 3 km S of Pico da Pedra (loc. 64), 25.III., 1 juv., in scrub; 2 juv., under stones in scrub; 1 juv., under a stone.

Santa Maria: Pico Alto, 590 m (loc. 40), 19.III., 1 juv., under a stone at the top. Praia (loc. 47), 20.III., 1 pull., under a stone on sandy grassy ground on the shore.

Faial: Praia do Almoxarife (loc. 72), 31.III., 1 juv., under a stone on the shore; 1 juv., under a stone on grassy ground; 1 juv., under a stone on the slope against the shore. Porto da Boca da Ribeira (loc. 74), 1.IV., 2 ♀ subad., under stones. 2 km SE of Praia do Norte (loc. 79), 2.IV., 3 juv., under stones. Ribeira dos Flamengos, 2 km WNW of Flamengos (loc. 91), 4. IV., 2 pulli, in drift material in a ravine on the shore. Three km WNW of Pedro Miguel (loc. 92), 5.IV., 1 juv., under a stone in a damp meadow at the pond.

Flores: Ribeira d'Além da Fazenda (loc. 108), 14.IV., 1 pull., on dry grassy ground; 1 ♂ subad. 2 juv., at a stream in a meadow; 1 ♀ subad., in the wet slope down to the stream.

Textrix coarctata (Dufour, 1820)

Santa Maria: Aeroporto (loc. 44.45), 19/20.III., 1 ♀, under a stone in wet heath (*Juncus*); 1 ♀, under a stone; 1 ♀, under a stone on sandy grassy ground. Limestone area (loc. 48), 20.III., 1 ♀, under a stone in vegetation.

São Miguel: Vila Franca do Campo (loc. 2). 28.II., 1 ♀, niveau II, on volcanic sand beach; 1 ♀, niveau IV, under a stone. São Pópulo (loc. 10), 4.III., 1 ♀, on grassy ground at the sea. Relva, 15.III., tanque da Rocha Quebrada (loc. 31), 1 ♀, under a stone; nascente dos Lagos (loc. 32), 1 ♀, under a stone. Ribeira Seca (loc. 37), 18.III., 1 ♀, under a stone on dry grassy ground.

Mediterranean region; all the Atlantic Islands.

Fam. *Pisauridae**Pisaura mirabilis* (Clerck, 1757)

São Miguel: River 5 km SSE of Ribeira Grande (loc. 29), 14.III., 1 juv., swept in vegetation.

Faial: Costa da Náu (loc. 88), 4.IV., 1 ♂ subad., on Erica bush; 1 juv., in foena.

Europe and Mediterranean region; all the Atlantic Islands.

Two young specimens collected at Lagoa do Fogo (loc. 54, 22.III.) in heath (*Calluna*, *Vaccinium*) and on the crater edge belong to the genus *Pisaura*, but they rather differ in pattern from the typical form of the species above. The longitudinal pale stripe of their cephalothorax is much wider than usual and extends only from the ocular area to the thoracic fovea: the dorsal brown stripe of their abdomen is rather reduced and cleared in its middle line by a series of wide chevrons lengthening to the spinnerets. Variable as *P. mirabilis* is, I have never seen a form like the present one.

Fam. *Lycosidae**Pardosa proxima* (C. L. Koch, 1848)

Santa Maria: Miradouro dos Picos, 440 m (loc. 39), 19.III., 1 ♀, under stones and dead plants. Pico Alto, 19.III., 590 m (loc. 40), 2 ♂, in the vegetation of the top; 575 m (loc. 41), 1 ♂, under a stone in *Calluna* heath; 550 m (loc. 42), 1 ♀, in vegetation at the spring. Águas dos Mouros (loc. 43), 19.III., 1 ♂, under a stone.

São Miguel: Charco do Madeira (loc. 4), 1.III., 2 ♀ 2 juv., on the shore. Two km NE of Ponta Delgada, 5.III., 1 ♂, in a swimming pool. Lagoa do Páu Pique (loc. 15), 7.III., 1 ♀, at the lake. Caldeira das Sete Cidades (loc. 18), 8.III., 1 ♀, under a stone in the outer tunnel mouth. Lagoa das Furnas (loc. 22), 10.III., 1 ♂, at shore, on burnt land; 1 ♂ subad., at shore, on burnt land; 2 ♂, in drift material; 1 ♂ 4 ♀, one egg-cocoon, no other data. Valley of Ribeira Quente (loc. 23), 11.III., 1 ♂ 1 ♀ subad., under stones on shore. Three km N of Furnas (loc. 25), 11.III., 2 ♂ 1 ♀ subad., in heath. Relva, 15.III., tanque da Rocha Quebrada, freshwater lake (loc. 31), 1 ♂ 1 ♀, under stones; nascente dos Lagos (loc. 32), 1 juv. 1 cephal., at the spring. Tanque 1 km SE of Lagoa do Congro (loc. 33), 16.III., 1 ♀, at the pond. Ribeira Seca (loc. 37), 18.III., 1 ♂, in dunes. 1 km W of Ribeira Seca (loc. 53),

22.III., 1 ♂, on grassy ground; 1 ♀ 1 ♀ subad., on sandy grassy ground. Lagoa do Fogo (loc. 54), 22.III., 1 ♀, under a stone on the crater edge; 1 ♂, at the crater edge; 1 pull., under a stone at shore. Bodes Mts., SE of Furnas, 23.III., 1 ♂ 1 ♀, in a stony steep. Pico Verde (loc. 61), 24.III., 1 juv., at the spring. Three km S of Pico da Pedra (loc. 64), 25.III., 1 ♂ 1 ♀ with its egg-coccon, 1 ♀ subad., in scrub.

Pico: Volc. Pico, 8.IV., ca. 1000-1100 m (loc. 95), 1 ♂, in Erica bush, at the snow-line; ca. 800 m (loc. 97), 1 ♂ 1 ♀, under stones; ca. 350 m (loc. 99), 1 ♂ 2 ♀, in the forest. São João (loc. 103), 9.IV., 1 juv., on volcanic sand beach, rocky shore.

Faial: Praia do Almoxarife (loc. 72), 31.III., 1 ♂, under a stone on sandy grassy ground; 1 ♂ 1 ♀ subad., under stones on the shore; 1 ♀ subad., on stony shore. Horta, Ribeira dos Flamengos (loc. 71), 1.IV., 1 ♂. 5 km WNW of Ribeirinha (loc. 73), 1.IV., 1 ♀ subad., under a stone in a forest. Porto da Boca da Ribeira (loc. 74), 1.IV., 1 ♀ with its egg-coccon, under a stone. Ribeira dos Flamengos. 2 km WNW of Flamengos (loc. 91), 4.IV., 1 ♀, in drift material in a ravine on the shore.

Terceira: Caldeira de Guilherme Moniz (loc. 65), 27.III., 1 ♀ subad., under a stone; 1 juv., at a cold spring. Lagoa do Ginjal (loc. 66), 27.III., 1 ♀ subad., under a stone at the road.

Flores: Central Plateau S and SE of Caldeira Comprida (loc. 109), 14.IV., 1 ♀, under a stone at a fresh-water pool.

A great part of Europe; Mediterranean region; all the Atlantic Islands.

There is a good deal of variation in this species, with many intermediate forms in pattern as well as in epigyne. Two were described by Simon (1883), *P. assorensis* and *P. furtadoi*, which Berland (1932) considered synonyms of *P. proxima*; this was not the opinion of Bacelar (1937) who kept *P. assorensis* as a distinct species. In the present large material I find it quite impossible to distinguish plainly two or several species, while not a single specimen agrees exactly with the typical form.

Pardosa albiventris sp. n.

Figs. 10 & 11.

♀. Cephal. 3 mm; total length 8.5 mm.

Cephalothorax dark brown with a wide yellowish median stripe; this extending between intermediate and posterior eyes, forked in front, then widely dilated into a large quadrangle marked in front with two blackish

oblong spots, and followed by a much narrower, parallel stripe pointed behind; lateral stripes reduced to three very small spots on each side of the thoracic part. Sternum dark brown with a median light stripe in its anterior half. Maxillae and palps somewhat paler, the latter stained with

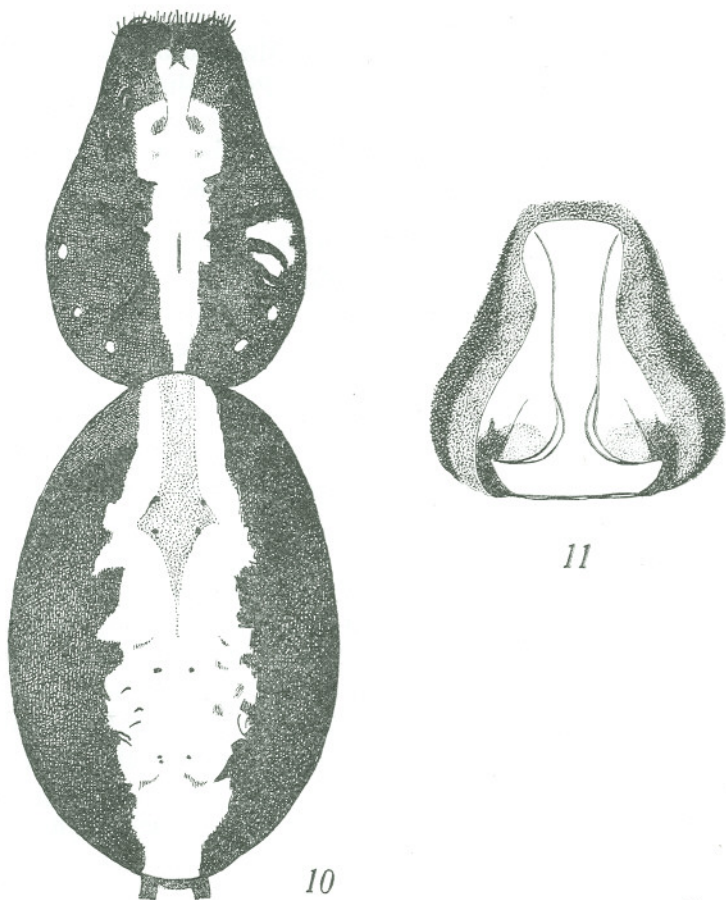


Fig. 10-11. - *Pardosa albiventris* sp.n. 10, dorsal view. 11, epigyne.

reddish brown. Legs pale yellow brown with dark red brown spots or stripes on coxae, femora and patellae, and wide rings on tibiae and metatarsi. Abdomen dark brown with a wide yellowish white stripe on its back, somewhat indented on the sides and reaching the spinnerets; un-

derside with a wide, very white stripe, regularly and scarcely narrower from the epigastric fold to the spinnerets.

Metatarsi armed with 3 pairs of spines on their underside, the basal and submedian ones being very long.

Epigyne (fig. 11) rather near that of *P. proxima*, with the anterior part of the septum rather wide and parallel.

Santa Maria: 2 km ENE of Almagreira, Miradouro dos Picos, 440 m (loc. 39), 19.III., 1 ♀ (type), under a stone. Pico Alto, 550 m (loc. 42), 19.III., 1 juv., in vegetation at the spring.

I do not know of another species showing such a striking pattern and this seems not to be an extreme variation of the preceding one.

Fam. *Dictynidae*

Lathys rubrovittata sp. n.

Figs. 12-16.

♂. Cephal. 1.15 mm; total length 2.25 mm. ♀ Cephal. 0.95 mm; total length 2.20 mm.

Cephalothorax rather bright yellow, very faintly suffused with greyish; two blackish lines limiting the cephalic part and a third one parting it in its middle; a very narrow, widely broken blackish stripe along its margin; a median row of long, erected bristles.

Front median eyes almost half as large as lateral ones, scarcely their own diameter apart, their interval to the lateral ones equalling their diameter or less (0.666 diameter in the male). Hind median eyes scarcely less than their diameter apart, their interval to the lateral eyes scarcely more (♂) or less (♀) than their diameter. Ocular trapezium as high as wide behind, much wider behind than in front (B:b falls between 1.500 and 1.700). Clypeus as wide as the diameter of the front median eyes or scarcely less.

Sternum rather bright yellow, more or less stained with very pale greyish towards its margin, with a black marginal line.

Falces coloured as the cephalothorax.

Legs pale yellow with brownish on femora (two spots on their underside), patellae, tibiae (two wide rings, subbasal and subapical) and metatarsi (as tibiae); rings on tibiae and metatarsi are sometimes broken up, especially the subbasal one on tibiae. Long spines, well defined, on femora, patellae, tibiae and metatarsi, more numerous but rather inordinate on tibiae and metatarsi of posterior legs.

♂. Profile of cephalothorax fig. 12. Falces strong, but not projecting; their upper margin provided with very minute, inordinate warts bearing very fine hairs, their lower margin with a row of 6 minute teeth; on their outer side a row of very minute warts.

Palp (fig. 13-14) pale yellow; patella slightly higher than tibia at its anterior edge, but without any apophysis; tibia bearing two apophysis, a lateral one twisted as a corkscrew and a long anterior upper one sharp spur-like directed downwards and outwards.

Upper side of the abdomen brownish with a wide, longitudinal, lighter reddish stripe dotted with white: in front of this stripe is a short brownish lanceolate spot which is followed by a rather indefinite red line reaching the spinnerets. Underside paler in colour, stained with pale brownish. Spinnerets reddish.

♀. Cephalothorax (fig. 15) more regular in profile than in the male, its highest point being farther from the clypeus. Upper margin of falces furnished with minute, irregular teeth.

Abdomen somewhat paler in colour, the median stripe wider and wholly reddish with white sides; the anterior brownish spot very reduced.

Epigyne fig. 16.

São Miguel: Ribeira da Praia (loc. 27), 13.III., 1 ♀ (allotype), on shore. Lagoa do Fogo, 22.III., (loc. 54), 1 ♀ subad., in peat-moss on the outer crateredge; 1 ♂ (holotype).

The twisted tibial apophysis much resembles that of *L. taczanowskyi* (O. P. Cambr.), from Eastern Siberia, but the male of the latter species lacks any apical apophysis; such a well-developed apophysis as in *L. rubrovittata* seems to be quite an unusual character.

In the same lot as the male described are 1 ♂ subad. 1 ♀ subad., somewhat larger in size, the abdominal pattern of which is dark and very obscure; this is nearer to that of *L. affinis* (Bl.), from Madeira; however in the female there is a very faint appearance of a reddish longitudinal line. This pattern also differs from that of the following species and no evidence exists as to which species these specimens belong.

***Lathys alboretromaculata* sp. n.**

Fig. 17.

♀. Cephal. 0.90-0.95 mm; total length 2.25-2.50 mm.

This species resemble the preceding one in every respect except for its abdominal pattern and epigyne (fig. 17).

The abdomen is brownish with, in its anterior half, a broad white area in front of which is a dark brown, forked, rather short spot; in front of the spinnerets is a large, very white spot in the form of a trapezium with its narrower base behind. In another specimen the abdomen is more dark-coloured and the lighter areas are pale brownish, but deeply dotted with whitish.

São Miguel: Caldeira das Sete Cidades, at Lagoa Azul (loc. 50), 21.III., 1 ♀, on shore. River NW of Água Retorta (loc. 57), 23.III., 1 ♀ (type), on the shore.

Dictyna flavescens (Walckenaer, 1825)

Santa Maria: Limestone Area (loc. 48), 20.III., 1 ♂ subad. 1 ♀, swept in the vegetation on the S coast.

São Miguel: Fonte Grande, SE Feteiras (loc. 12), 6.III., 1 ♂ subad. 1 ♀ 2 juv., at the spring. Caldeiras 5 km SE of Ribeira Grande (loc. 28), 14.III., 1 juv., swept in vegetation. Relva, nascente dos Lagos (loc. 32), 15.III., 1 juv., at the spring. Furnas, hot springs (loc. 59), 24.III., 3 juv., in wet heath.

A great part of Europe, but not in the North; Madeira.

Two specimens, 1 ♂ subad. (in rather bad condition) and 1 pull., collected on shore at Praia do Almoxarife (Faial, loc. 72, 31.III.) belong to the same group (*Ergatis* Bl.), but whether really to the same species remains doubtful.

II. Spiders from Madeira

The collection of spiders made by Drs. Brinck and Dahl in the main island of Madeira consists of only 10 specimens belonging to 8 species. But, in spite of this small number, one is to be added to the fauna of the archipelago and a genus hitherto recorded only from a young individual is represented by an adult female, which thus makes it possible to describe the species.

Zelotes sp.

Arieiro Mts., ca. 1700 m (loc. 114), 21.IV., 1 ♂ subad., under a stone.

Legs of this specimen are dark brown with metatarsi and tarsi very much paler in colour, the anterior ones being yellowish; tibiae i and ii are spineless, metatarsi i and ii are provided with 2-1 lower spines (2 basal and 1 submedian on the posterior side). These characters agree with

two adult males from Porto Santo sent by Dr. W. S. Bristowe, which are undescribed as yet and very probably belong to *Z. schmitzi* Kulcz. (sp. 25 in my 1962 list)

***Micaria oceanica* sp. n.**

Figs. 18-22.

Arieiro Mts., ca. 1400 m (loc. 113), Ribeira das Cales, 21.IV., 1 ♀ (type).

The only record (Kulczynsky 1899) from Madeira for the genus *Micaria* (sp. 27) was that of a very young example, but Dr. Bristowe has provided me with several adults of both sexes he collected in Porto Santo in June 1962. The female here referred to belongs to the same species. Such seems also to be the case with the young female recorded above from Santa Maria (Azores). This species differs in colour from *Micaria gomerensis* Strand which was described after an inadult specimen found in the Canary Islands and is compared by its author with *Micariolepis dives* (Lucas).

♀. Cephal. 1 mm; total length 2.75 mm.

Cephalothorax dark brown, coated with rather scattered fine hairs, with an iridescent sheen; narrow and long (width:length=0.63).

Front median eyes almost twice smaller than the lateral ones, 1.333 their diameter apart, their interval to the lateral ones equalling 0.333 diameter. Hind median eyes 1.250 their diameter apart, their interval to the lateral ones equalling half their diameter. Ocular trapezium much wider behind than in front ($B:b=1.800$), about as high as wide behind. Width of the clypeus twice the diameter of the front median eyes under these, scarcely more than this diameter under the lateral ones.

Sternum dark red-brown; falces somewhat paler.

Legs yellowish with all femora dark brown; coxae i and ii brown, iii brownish, iv brownish on their sides; patellae iii and iv, tibiae iii and iv and metatarsi iv brownish, at least on their sides. Palp brownish with yellowish tarsus.

Tibia i bearing on its underside 3-3 very thin, little spines almost imperceptible, close to one another near its apex; tibia ii spineless; metatarsi and tarsi i and ii furnished on their underside with a double row of short apatulate spines extending only to the apical two-thirds of length of metatarsi and followed by an isolated pair. Tibia iv with 1-1 lower spines, one about the middle, and the other at the apex; metatarsus iv with 1-1 lower spines.

Abdomen long oval, comparatively wide, clothed with fine pubes-

cence, with an iridescent sheen; two white spots in the anterior half; about the middle two other white spots more apart from one another with a small transverse bar just before them, the whole forming a broken belt.

Epigyne fig. 18.

This species varies a good deal in size (cephal. 0.90-1 mm; total length 2.25-3 mm) as well as in other characters: sometimes the cephalothorax is red brown and the spines under tibiae i are wholly un conspicuous, tibiae ii may bear 1 or more often 1-1 lower $\bar{\sigma}$ spines; spines on posterior legs rather instable and there may be an unbroken belt on the abdomen. Also the epigyne differs more or less from the type (fig. 19).

I would like to ask Dr. Bristowe to forgive me for availing myself of the opportunity to give here briefly some characters of males he collected:

$\bar{\sigma}$. Cephal. 0.70-1.05 mm; total length 1.70-2.25 mm.

Similar to female when eventual variations are taken into account.

Palp (fig. 21-22): tibia longer than patella, but rather short, armed at its anterior edge with an upper, sharp spur-like apophysis, directed inwards when seen from above (fig. 20); this is unusually well developed and very characteristic; the tarsus is long and slender.

Phrurolithus grandis sp. n.

Fig. 23.

Funchal, Ribeiro Seco (loc. III), 19.IV., 1 $\bar{\sigma}$ (type), in a ravine.

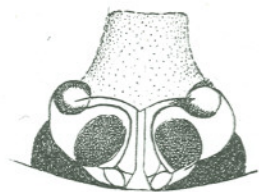
$\bar{\sigma}$. Cephal. 1.55 mm; total length 4.60 mm.

Cephalothorax dark reddish brown, clothed with short, thick, white hairs, rather sparse except along the margin where they form a well defined line.

Front median eyes smaller than lateral ones by one-third, less than their diameter apart, nearly contiguous to lateral ones. Hind median eyes larger than front ones by one-fifth, but much smaller than hind lateral ones (ratio = 0.6), their diameter apart, their interval to laterals equalling 0.666 diameter.

Sternum reddish brown, falces not so dark coloured.

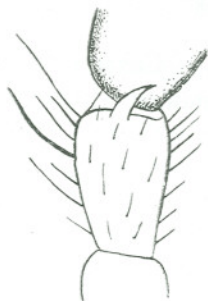
Fig. 12. - *Lathys rubrovittata* sp. n., cephalothorax of male in profile. Fig. 13. - *Id.*, patella and tibia of male palp from outer side. Fig. 14. - *Id.*, apex of tibia of male palp from above. Fig. 15. - *Id.*, cephalothorax of female in profile. Fig. 16. - *Id.*, epigyne. Fig. 17. - *Lathys alboretromaculata* sp. n., epigyne. Fig. 18. - *Micaria oceanica* sp. n., epigyne (type). Fig. 19. - *Id.*, epigyne (from an example of Porto Santo). Fig. 20. - *Id.*, tibia of male palp from above.



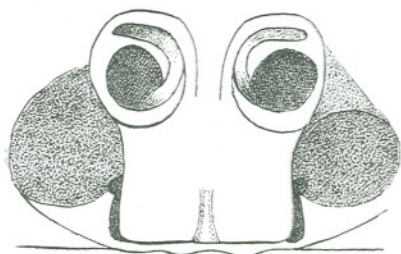
18



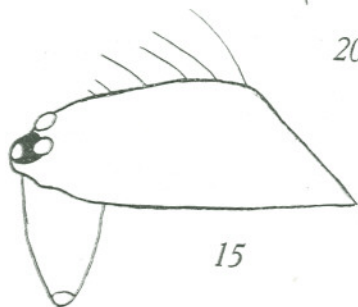
19



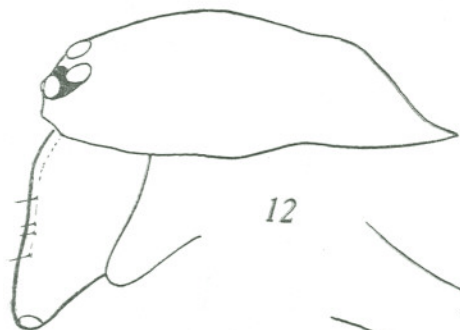
20



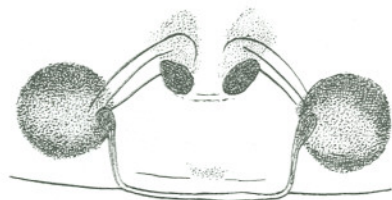
17



15



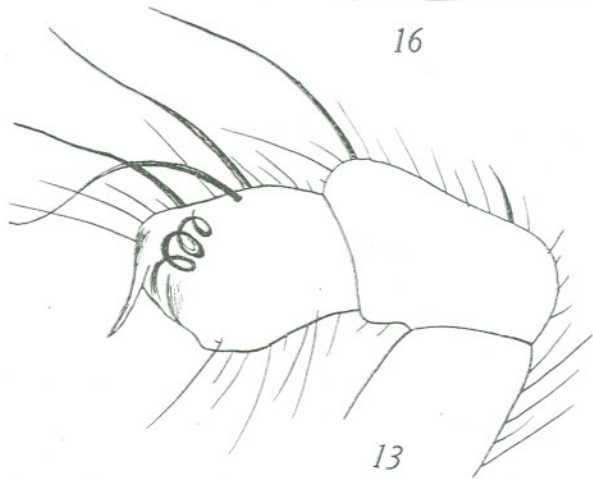
12



16



14



13

Coxae i brownish, ii, iii and iv light brownish yellow more or less stained with brown. Femora, patellae and tibiae (except at their apical end) i dark brown, metatarsi brownish yellow, tarsi yellowish; joints of pair ii less dark coloured, especially metatarsi; femora and patellae iii brownish, tibiae brownish on their sides, metatarsi and tarsi yellowish; legs of pair iv coloured as pair i with metatarsi darker except at their apical end. Palp rather pale brownish with tarsus yellowish.

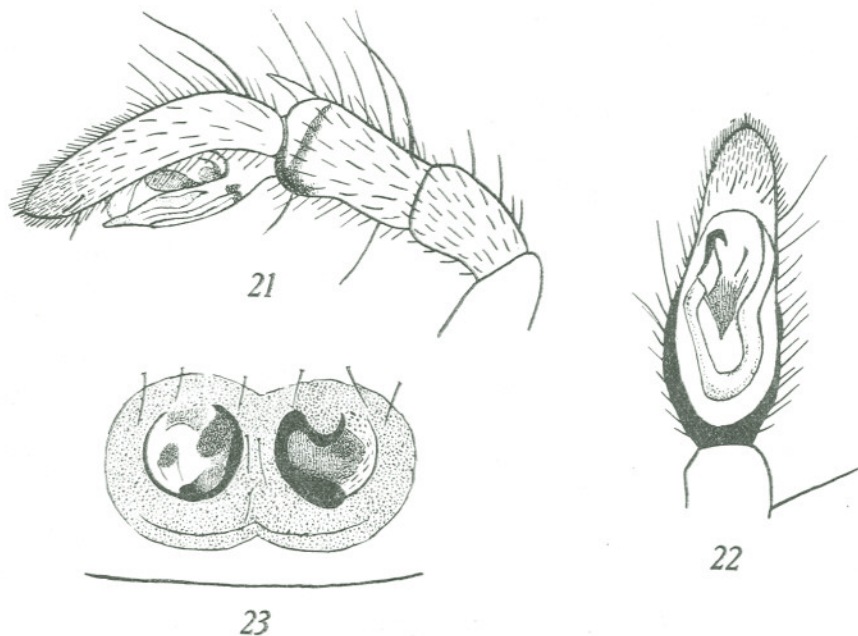


Fig. 21. - *Micaria oceanica* sp. n., male palp from outer side. Fig. 22. - *Id.*, tarsus of male palp from below. Fig. 23. - *Phrurolithus grandis* sp. n., epigyne.

Tibiae i armed with 7-7, tibiae ii with 6-6, metatarsi i with 5-5, metatarsi ii with 5-3 (posterior) lower spines. Femora i bearing a strong, long spine about the middle of their anterior side, other femora a rather weak, dorsal spine near their basis. Other joints spineless.

Abdomen blackish, clothed with a few whitish hairs, with faint iridescent sheen; at its very anterior edge is a very narrow line of white hairs, rather inconspicuous when seen exactly from above, widely broken in the middle, extending on each side and joining a large clearing up of tegument

along and behind the epigastric furrow: about the middle two triangular white spots rather widely apart from one another (?); behind, but rather far from the spinnerets, a small recurved, transverse bar of very white hairs.

Epigyne (fig. 23), an unusually characteristic one for the genus, with two large, well-marked dimples strongly chitinized on sides.

At first I wondered whether this specimen might not be the unknown female of *Phrurolithus tibialis* (Simon), from the Iberic Peninsula, so much the more as species belonging to the genus *Phrurolithus* are often very widespread. On giving this further consideration, it did not seem to be the case. In fact, all tibiae (and also most of the metatarsi) are darkened, and not only the anterior ones, the spines are more numerous, the arrangement of the eyes is different and the abdomen exhibits white markings (hairs have possibly fallen from the abdomen of the male type); these differences might merely be due to individual or sexual variations. However, both sexes in the genus are usually about the same in size and the male of *Phr. tibialis* is as small as most European species (except *Phr. flavitarsis*) whereas the female here described is an exceptionally large one.

This is the first record for the genus from an Atlantic Island.

Misumena spinifera (Blackwall, 1862) (sp. 34)

Casa das Queimadas, 880 m (loc. 122), 24.IV., 1 ♂, in a ravine near a stream.

Evophrys sp.

Arieiro Mts., Ribeira das Cales, 1400 m (loc. 113), 21.IV., 1 ♂ subad.

This specimen seems to differ from *E. vafra* (Bl.), the only species to have been recorded from Madeira (sp. 44); it rather resembles *Chalcoscirtus sublestus* (Bl.) (sp. 45); but the inner margin of its falces is armed with a sharp, little tooth whereas no tooth exists in *Chalcoscirtus*.

Pellenes maderianus Kulczynski, 1905 (sp. 51)

Arieiro Mts., Ribeira das Cales, 1400 m (loc. 113), 21.IV., 1 ♀.

Erigone vagans Savigny & Audouin, 1825 (sp. 78).

Terreiro da Luta, 850 m (loc. 112), 20.IV., 1 ♀ 1 juv., near the shore of a river. Faial, at the mouth of Ribeira do Faial (loc. 116), 21.IV., 1 ♀, under a stone.

Oecobius annulipes (Lucas, 1846) (sp. 137)

Funchal, Ribeiro Seco (loc. 111), 19.IV., 1 ♂ subad., in a ravine.

46. *Anerigone fradeorum* (Berl.)
47. *Meioneta rurestris* (C. L. K.)
48. *Meioneta fuscipalpis* (C. L. K.)
49. *Microneta viaria* (Bl.)
50. *Leptyphantes tenuis* (Bl.)
51. ***Leptyphantes stygius* E. S.**
52. ***Nesticus pallidus* Em.**
53. *Meta merianae* (Scop.)
54. *Tetragnatha extensa* L.)
55. *Zygiella x-notata* (Cl.)
56. *Mangora acalypha* (Walck.)
57. ? *Zilla diodia* (Walck.)
58. *Araneus angulatus* Cl.
59. *Araneus marmoreus* Cl.
60. *Araneus redii* (Scop.)
61. ? *Araneus sturmi v-notatus* (Th.)
62. ? *Araneus bituberculatus* (Walck.)
63. *Metargoiope bruennichi* (Scop.)
64. *Ero flammeola* E. S.
65. *Tegenaria parietina* (Fourcr.)
66. *Tegenaria domestica* (Cl.)
67. *Tegenaria pagana* C. L. K.
68. *Textrix coarctata* (Dufour)
69. *Pisaura mirabilis* (Cl.)
70. *Pardosa proxima* (C. L. K.)
71. ***Pardosa albiventris* sp. n.**
72. *Arctosa perita* (Latr.)
73. *Auximus dentichelis* (E. S.)
74. ***Lathys rubrovittata* sp. n.**
75. ***Lathys alboretromaculata* sp. n.**
76. *Dictyna flavescens* (Walck.)
77. *Oecobius annulipes* (Lucas)
78. *Filistata insidiatrix* (Forsk.)
79. *Filistata pallida* Kulcz.

	Santa Maria	São Miguel	Pico	Faial	São Jorge	Terceira	Graciosa	Flores	Corvo
46	—	—	—	—	—	—	—	—	—
47	—	—	—	—	—	—	—	—	—
48	—	—	—	—	—	—	—	—	—
49	—	—	—	—	—	—	—	—	—
50	—	—	—	—	—	—	—	—	—
51	—	—	—	—	—	—	—	—	—
52	—	—	—	—	—	—	—	—	—
53	—	—	—	—	—	—	—	—	—
54	—	—	—	—	—	—	—	—	—
55	—	—	—	—	—	—	—	—	—
56	—	—	—	—	—	—	—	—	—
57	—	—	—	—	—	—	—	—	—
58	—	—	—	—	—	—	—	—	—
59	—	—	—	—	—	—	—	—	—
60	—	—	—	—	—	—	—	—	—
61	—	—	—	—	—	—	—	—	—
62	—	—	—	—	—	—	—	—	—
63	—	—	—	—	—	—	—	—	—
64	—	—	—	—	—	—	—	—	—
65	—	—	—	—	—	—	—	—	—
66	—	—	—	—	—	—	—	—	—
67	—	—	—	—	—	—	—	—	—
68	—	—	—	—	—	—	—	—	—
69	—	—	—	—	—	—	—	—	—
70	—	—	—	—	—	—	—	—	—
71	—	—	—	—	—	—	—	—	—
72	—	—	—	—	—	—	—	—	—
73	—	—	—	—	—	—	—	—	—
74	—	—	—	—	—	—	—	—	—
75	—	—	—	—	—	—	—	—	—
76	—	—	—	—	—	—	—	—	—
77	—	—	—	—	—	—	—	—	—
78	—	—	—	—	—	—	—	—	—
79	—	—	—	—	—	—	—	—	—
number of species	24	70	13	27	7	19	15	14	6

Dysdera crocata C. L. K. = species formerly recorded from the Azores and found again by Drs. Brinck and Dahl.

Segestria florentina (Rossi) = species formerly recorded from the Azores, not found again by Drs. Brinck and Dahl.

***Xysticus cor* Can.** = species recorded from the Azores for the first time here.

— former record for the island.

= former and new records for the island.

— first record for the island.

REFERENCES

- Bacelar, Amélia:
1937. Contribuição para o estudo da fauna aracnológica dos Açores e da Madeira (*Arq. Mus. Bocage*, VIII, pp. 155-164).
- Berland, Lucien:
1932. Voyage de MM. L. Chopard et A. Méquignon aux Açores (août-septembre 1930). II. Araignées (*Ann. Soc. entom. France*, CI, pp. 69-84).
- Bristowe, William Syer:
1939. The comity of Spiders. Vol. 1 (Ray Soc., cxxvi, x + 228 pp., pl. 1-11x).
- Denis, Jacques:
1962. Les Araignées de l'Archipel de Madère (mission du Professeur Vandel) (*Publ. Inst. Zool. Porto*. LXXIX, pp. 9-118, pl. 1-111).
- Kulczynski, Wladislas:
1899. Arachnoidea opera Rev. E. Schmitz collecta in insulis Maderianis et in insulis Selvages dictis (*Rozpr. spraw. mat. przyrod. Akad. umiej.*, xxxvi, pp. 319-461, pl. VI-IX).
- Locket, G. H. & A. F. Millidge:
1953. British Spiders. Vol. 11 (Ray Soc., cxxxvi, vii + 449 pp.).
- Schenkel, Ehrenfried:
1938. Die Arthropodenfauna von Madeira nach den Ergebnissen der Reise von Prof. Dr. O. Lundblad. Juli-August 1935. IV *Araneae, Opiliones* und *Pseudoscorpiones* (*Ark. f. Zool.*, xxx A, No. 7, pp. 1-42, pl. 1-IV).
- Simon, Eugène:
1883. Etudes arachnologiques. 14^e mémoire. XXI. Matériaux pour servir à la faune arachnologique des îles de l'Océan Atlantique (Açores, Madère, Salvages, Canaries, Cap Vert, Sainte-Hélène et Bermudes) (*Ann. Soc. entom. France*, (6) 111, pp. 259-314, pl. VIII).