

SYMPHYLA FROM THE AZORES AND MADEIRA¹

By ULF SCHELLER²

INTRODUCTION

In 1957 Dr. and Mrs. Per Brinck and Dr. and Mrs. Erik Dahl brought together a large collection of Symphyla from the islands Santa Maria, São Miguel, Pico, Faial, Terceira and Flores of the Azorean group and from the main island of Madeira. Their collecting was carried out with a high degree of accuracy: there are several samples from each island usually representing many different biotopes. Thus there is little chance to discover more species besides those three recorded below.

I am indebted to Dr. Brinck and Dr. Dahl for their permission to examine the material.

MATERIAL EXAMINED

Family SCOLOPENDRELLIDAE

Symphylellopsis subnuda (Hansen, 1903)

Azores, Santa Maria: Aeroporto, on damp gravel-ground, under stone, 1 ad.,³ 3 juv. II, 19-20.III. (Loc. 44,45).

Azores, Flores: Ribeira d'Além da Fazenda, in a ravine near a stream, under stone, 1 ad., 1 juv. II, 1 stage?, 14.IV. (Loc. 108); *Ibidem*, on a shady steep, under stone, 1 ad., 1 juv. II, 14.IV. (Loc. 103).

Madeira: Serra d'Água, Powerstation, alt. 600 m, grassy ground, under stone, 1 ad., 23.IV. (Loc. 120); ravine near Ribeira das Cales, alt.

1) Report No. 17 from the Lund University Expedition in 1957 to the Azores and Madeira.

2) Institute of Zoology, University of Lund, Sweden; present address Lundsberg, Sweden.

3) Abbreviations: ad., a specimen with the maximum number of legs; juv., ... a juvenile specimen with the number of pairs of legs indicated. These numbers include the rudimentary first pair of *Symphylella*.

1.200 m, bay-forest. 3 juv. 11, 4 juv. 10, 3 juv. 8, 26.IV. (Loc. 127); Ribeira da Lapa, E of Pico do Serrado, alt. 900 m, ravine, under stone, 1 ad., 3 juv. 11, 27.IV. (Loc. 132); Eoca da Encumeada, alt. 1.000 m, 1 ad., 1 juv. 10, 28.IV. (Loc. 134); 1 km E of Encumeada, alt. ca. 800 m, 1 juv. 10, 28.IV. (Loc. 135).

27 specimens in all.

Symphylellopsis subnuda is widely distributed in Europe and North Africa but it has also been recorded from Réunion.

Symphylella vulgaris (Hansen, 1903)

Azores, Santa Maria: Aeroporto, under stone, 1 juv. 11, 1 juv. 10, 19.III. (Loc. 44); *Ibidem*, on damp gravel-ground, under stone, 1 juv. 9, 19-20.III. (Loc. 44, 45).

Azores, Pico: Volc. Pico, W side, alt. ca. 350 m, grassy ground, under stone, 1 ad., 9.IV. (Loc. 100); 4 km WNW of Lajes, in a forest, under stone, 1 ad., 9.IV. (Loc. 101).

Madeira: Serra de Água, Powerstation, alt. 600 m, grassy ground, under stone, 1 ad., 1 juv. 8, 23.IV. (Loc. 120).

7 specimens in all.

Symphylella vulgaris has a wider distributional area than any other species of Symphyla. It has been collected in different parts of Europe, in the northern and the tropical belt of the African continent and on Madagascar and Réunion. Moreover it has been stated from North America, New Zealand and Japan.

Family SCUTIGERELLIDAE

Scutigereilla immaculata (Newport, 1845; *partim* Michelbacher, 1942)

Azores, São Miguel: Vila Franca do Campo, niveau IV, volcanic sand beach, 2 ad., 28.II. (Loc. 2); São Pópulo, 7.5 km E of Ponta Delgada, sandy grassy ground near the sea, 3 ad., 1.III. (Loc. 3); *Ibidem*, sandy grassy ground, 1 ad., 1.III. (Loc. 3); Charco do Madeira, 6 km N of Ponta Delgada, 1 ad., 1 ad.?, 1.III. (Loc. 4); Lomba da Cruz, 3 km NW of Feteiras, in dead plants, 4 ad., 2.III. (Loc. 6); São Pópulo, 7.5 km E of Ponta Delgada, grassy ground at the sea shore, 1 ad., 4.III. (Loc. 10); at Lagoa

das Furnas, on a burn-beaten land, 1 ad., 10.III. (Loc. 22); 2 km SW of Porto Formoso, stone-pit, 1 ad., 11.III. (Loc. without number); Caldeiras 5 km SE of Ribeira Grande, grassy ground, under stone, 3 ad., 14.III. (Loc. 28); Relva, tanque da Rocha Quebrada, on shore, 1 ad., 15.III. (Loc. 31); 1 km W of Ribeira Seca, W of Ribeira Grande, sandy grassy ground, under stone, 3 ad., 22.III. (Loc. 53); at Lagoa do Fogo, on shore, under stone, 8 ad., 1 ad.?, 1 juv. 11, 22.III. (Loc. 54); *Ibidem*, in *Sphagnum* on the outer crater edge, 1 ad., 22.III. (Loc. 54); SE Furnas, Bodes Mts, stony steep, 1 ad., 23.III. (Loc. without number).

Azores, Santa Maria: 3 km NE Vila do Porto, Fonte do Mourato, in a garden, under stone, 1 ad., 19.III. (Loc. 38); Pico Alto, alt. 575 m, on *Calluna*-heath, under stone, 1 ad., 19.III. (Loc. 41); Águas dos Mouros, SE of Pico Alto, under stone, 1 ad., 19.III. (Loc. 43); Aeroporto, under stone, 2 ad., 1 juv. 8, 19.III. (Loc. 44); *Ibidem*, on damp gravel-ground, under stone, 1 ad., 19-20.III. (Loc. 44,45); *Ibidem*, under stone, 3 ad., 19-20.III. (Loc. 44,45); *Ibidem*, under stone, 5 ad., 4 juv. 11, 2 juv. 10, 2 juv. 8, 20.III. (Loc. 45).

Azores, Terceira: Caldeira de Guilherme Moniz, under stone, 1 ad., 1 stage?, 27.III. (Loc. 65); 0.5 km E of Angra do Heroísmo, ravine, 1 ad., 1 stage?, 28.III. (Loc. 70).

Azores, Faial: Praia do Almoxarife, on shore, under stone, 1 ad., 1 juv. 11, 1 stage?, 31.III. (Loc. 72); *Ibidem*, sandy grassy ground, under stone, 1 juv. 11, 1 juv. 9?, 1 juv. 7, 1 stage?, 31.III. (Loc. 72); *Ibidem*, under stone, 7 ad., 1.IV. (Loc. 72); Porto da Boca da Ribeira, 1 km E of Ribeirinha, under stone, 1 ad., 1.IV. (Loc. 74); Porto do Salão, on a rocky steep, 1 ad., 1.IV. (Loc. 75); Ribeira das Cabras, 1 km NE of Praia do Norte, ravine, under stone, 1 ad., 2.IV. (Loc. 76); Baía da Areia das Fontes, 1 km N of Praia do Norte, grassy ground on shore, under stone, 3 ad., 2.IV. (Loc. 77); *Ibidem*, under stone, 3 ad., 2.IV. (Loc. 77); Fajã, 2 km W of Praia do Norte, ash field with moss, under stone, 1 ad., 1 juv. 9, 2.IV. (Loc. 78); Costa da Náu, 3 km NW of Capêlo, *Erica* bush, 1 ad., 4.IV. (Loc. 88); *Ibidem*, ash plain, 1 ad., 4.IV. (Loc. 88); *Ibidem*, on an ash field, 1 ad., 1 juv. 11, 1 juv. 10, 4.IV. (Loc. 88); Cabeço do Canto, *Erica* bush, 1 ad., 4.IV. (Loc. 89); pool, 1 km ESE of Cabeço do Fogo, *Erica* bush, 1 ad., 4.IV. (Loc. 90); *Ibidem*, *Erica* bush, in moss, 1 ad., 4.IV. (Loc. 90); *Ibidem*, *Erica* bush, among *Hepaticae*, 1 ad., 4.IV. (Loc. 90); 3 km WNW of Pedro Miguel, on damp grassy ground at the pond, under stone, 1 ad., 5.IV. (Loc. 92); Horta, Porto Pim, volcanic sand beach, 1 ad.,

7.IV. (Loc. 94); Caldeira, under stone, 4 ad., 10.IV. (Loc. 105); *Ibidem*, grassy ground, under stone, 1 ad., 10.IV. (Loc. 105).

Azores, Pico: Volc. Pico, W side, alt. 800 m, under stone, 2 ad., 8.IV. (Loc. 97); *Ibidem*, alt. ca. 350 m, on a little meadow in a forest, under stone, 1 ad., 8.IV. (Loc. 99); *Ibidem*, under stone, 1 ad., 8.IV. (Loc. 99); *Ibidem*, grassy ground, under stone, 1 ad., 1 ad.?, 9.IV. (Loc. 100); 4 km WNW of Lajes, in a forest, under stone, 3 ad., 9.IV. (Loc. 101); 10 km NNW of Lajes, *Erica* bush, 1 ad., 9.IV. (Loc. 102); São João, rocky shore, volcanic gravel, 4 ad., 9.IV. (Loc. 103).

Azores, Flores: Ribeira d'Além da Fazenda, on meadow at steep, above stream, 2 ad., 14.IV. (Loc. 108); *Ibidem*, above the mouth, in a rocky steep, dry grass ground, under stone, 1 stage?, 14.IV. (Loc. 108).

Madeira: Terreiro da Luta, alt. 850 m, at the stream, under stone, 3 ad., 1 juv. 9, 3 juv. 8, 20.IV. (Loc. 112); Arieiro Mts, alt. ca. 1700 m, under stone, 1 ad., 21.IV. (Loc. 114); Porto Novo, Ribeira do Porto Novo, in ravine, under stones, 1 ad., 1 ad.? 1 juv. 8, 22.IV. (Loc. 119); near Ribeira das Cales, alt. 1.200 m, ravine, 1 ad., 26.IV. (Loc. 127); Boca do Serrado, at Gr. Curral, alt. 1.000 m, 5 ad., 1 ad.?, 1 stage?, 27.IV. (Loc. 131); Ribeira da Lapa, E of Pico do Serrado, alt. 900 m, 1 ad., 1 juv. 9, 27.IV. (Loc. 132); *Ibidem*, ravine, under stone, 1 ad., 1 juv. 10, 1 juv. 9, 3 juv. 8, 2 juv. 7, 2 juv. 6, 27.IV. (Loc. 132); Boca da Encumeada, alt. 1.000 m, 1 ad., 28.IV. (Loc. 134); 1 km E of Encumeada, alt. ca. 800m, 1 ad., 28.IV. (Loc. 135);

In all 152 specimens.

Scutigereilla immaculata in the sense of Newport, often called the garden centipede, is known from nearly all parts of Europe and from the northern part of Africa where the southern limit lies between Colomb-Béchar and Golea in the north and Tadjemout and Hoggar in the south. It is also mentioned from America and probably it occurs in Asia too, at least introduced.

DISCUSSION

There are very few previous records of Symphyla from the Azores and Madeira. The only species which has been announced earlier is *Scutigereilla immaculata*. Its occurrence on the Azores was reported by Silvestri (1896, p.147), but without any precise locality. His record has been repeated several times by various authors. Some zoologists (e. g. Remy 1943) men-

tion that the species has been found also on Madeira. These early records apply to *S. immaculata* as described by Newport (1845) and redescribed by Hansen (1903). In 1942, however Michelbacher split it in a series of species, only one of which occurs in the islands viz. the one which has taken over, I think rightly, the name which Newport gave to the large and common species most often met with in Europe. No other species of *Scutigereilla* was found by the Brinck and Dahl expedition for which reason it seems that the earlier records of *immaculata* Newport belong to *immaculata* Newport (*sensu* Michelbacher).

Besides this long and swiftly moving species of *Scutigereillidae* also two small and slow representatives of the family *Scolopendrellidae* were met with. Neither of them (*Symphylellopsis subnuda* and *Symphylella vulgaris*) have been found by previous collectors.

The actual observations of *Symphyla* of the Azores and Madeira show that the number of species is small and that the few species occurring there are all of mainly European-North African origin. Geologically it seems sure that the *Symphyla* are relatively recent settlers on the islands, and as the evolution rate of the group is low the species have not been isolated long enough, after the ancestral European or African basic stock (or stocks) invaded the islands, for endemic forms to appear. It is always confusing to determine the taxonomic status of forms of a species which has spread over several isolated districts rapidly and comparatively recently so that no outstanding characters have evolved in the various areas. It might safely be stated, however, that all the *Symphyla* of the Azores and Madeira show a high degree of homogeneity with regard to structures. However, they have been successful in starting new colonies. This applies especially to *Scutigereilla immaculata*. As seen above it is widely distributed on several islands in many habitats and at various altitudes.

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