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NOTES ON THE THYSANURA (INSECTA,  
APTERYGOTA) OF THE CANARY ISLANDS

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(with 16 text-figures)

34 Contribution to the knowledge of the Fauna of the Canary Islands, edited by  
P. D. L. Uyttenboogaart, and continued by Dr. C. O. van Regteren Altena<sup>1)</sup>

The present paper constitutes a report on the Machilidae and Lepismatida collected by Dr. C. O. van Regteren Altena in the Canary Islands in the spring of 1947. We are much obliged to Dr. van Regteren Altena for allowing us to study these interesting specimens.

The first notice on Thysanura from the Canary Islands seems to be the mentioning of *Machilis maritima* by Lucas (1836-44). Unfortunately it is quite impossible nowadays to identify that species as understood by Lucas

Ridley (1881) mentions three species from the Canary Islands, viz *Lepisma saccharina* L., from Tenerife and Gran Canaria; *Lepisma mauritanica* Lucas, from Las Palmas (Gran Canaria) and *Lepisma catonii* Ridley from Tenerife. *L. saccharina* has apparently not been found again on the Islands; anyhow we do not see any reason to doubt its presence there. *Lepisma mauritanica*, actually included in the genus *Ctenolepisma*, is a species that is rare as well as very difficult to identify; Ridley's specimens were most probably nothing else but dark *Ctenolepisma lineata*, a species common in the Islands. Finally *Lepisma catonii*, whose correct name should be *Ctenolepisma lineata catonii*, is nothing more than a colour form of *Ctenolepisma lineata*, which may not deserve even subspecific rank.

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1) Contribution No. 33 has been published in Tijdschr. v. Entom., vol. 92 (for 1949) 1950, pp. 248-250.

Escherich (1905) also mentions *Ctenolepisma lineata eatonii* from Tenerife.

Silvestri (1910) gives the first record for *Lepisma myrmecobia* Silvestri from the Islands (Gran Canaria and Tenerife).

Wygodzinsky (1941) described *Dilta insulicola* from Tenerife.

In the present paper an additional species of *Dilta*, *Dilta attenai* sp. n. is described from Tenerife, and several of the formerly known species of Thysanura are mentioned.

The total of accepted species of Thysanura from the Canary Islands is therefore as follows:

Family Machilidae

*Dilta insulicola* Wygodzinsky, 1941

*Dilta attenai* sp. n.

Family Lepismatidae

*Ctenolepisma lineata* (Fabricius, 1775)

*Lepisma myrmecobia* Silvestri, 1908.

*Lepisma saccharina* L., 1758

Our knowledge of the Thysanura of the Atlantic Islands is still very incomplete; thus we think it premature to make comparisons between their respective faunas. From what we know to date, it might be said that the Thysanura of the Canary Islands, the Azores, and Madeira have exclusively palaeartic affinities; as to the Cape Verde Islands, we find mixed palaeartic and ethiopic elements.

It is almost certain that the two species of *Dilta* found in the Canary Islands are endemic; but as the genus is exclusively palaeartic, the general picture is not changed.

***Dilta insulicola* Wygodzinsky, 1941**

This species is based upon the description of a not too well preserved imbc. We have now seen three females, which allow us to complete the diagnosis of the species. The following description contains only those characters peculiar to the female, or those of general interest which it was not possible to examine in the male.

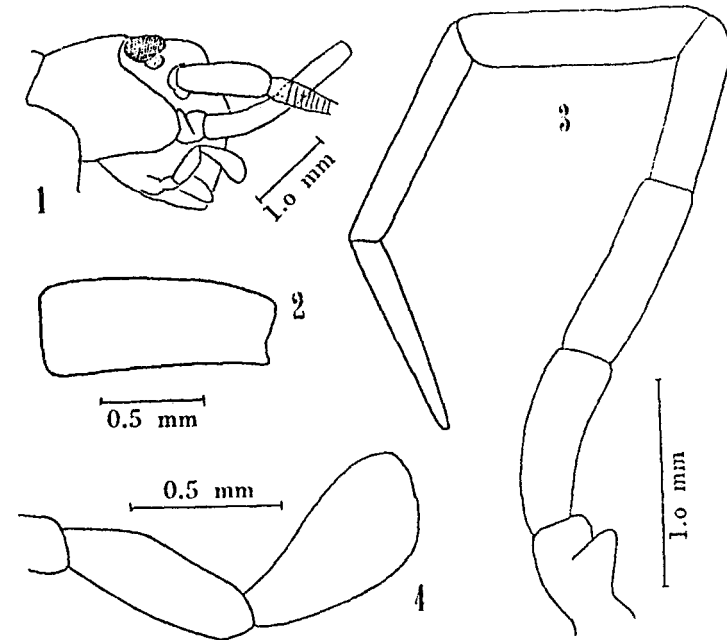
Female. Maximum length 15 mm.

Antennae longer than body (preserved portion 17 mm), not distinctly thickened near base. Scapus very elongate (figs. 1, 2), in lateral aspect of head distinctly more than twice as long as eye. Distal articles divided into eight subjoirits.

Maxillary palp long and stout, the shape and relative length of its articles as in fig. 3. Labial palp as in fig. 4, its apical joint slightly triangularly widened.

Legs long and stout, ventral surface of articles with long and numerous bristles. Coxal appendages on legs II and III.

Relation length of stylet: length of coxite, on segments II-VII = 0.45, VIII = 0.7, IX = 0.6. Ovipositor simple, surpassing stylets of segment IX



*Dilta insulicola* Wygodzinsky, female. Fig. 1, head, lateral view; fig. 2, scapus; fig. 3, maxillary palp; fig. 4, labial palp. Wygodzinsky del.

by the whole length of the latter. Chaetotaxy of gonapophyses as typical for the genus. Anterior gonapophyses with 70-80 joints.

Material examined: Tenerife, Barranco west of Icod el Alto, 25-III-1947 (1 female, allotype, Mus. Leiden; 1 female, author's collection); Tenerife, Barranco Andura or Andola, south of Realejo Alto, 17-III-1947 (1 female, Mus. Leiden); Tenerife, Barranco Ruiz, west of Realejo Bajo, 1-IV-1947 (1 female, Mus. Leiden).

As mentioned in the original description of this species, *D. insulicola* differs from the remainder of the species of the genus by its large size, the very stout and elongate palpi and legs, and, as we may now add, by the antennae, whose length surpasses that of the body, and which are not notice-

ably thickened at their base. We do not, however, consider these characters sufficient for the erection of a new superspecific unit, e.g., a subgenus or genus, at any rate until we learn of the existence of additional species with identical characters.

*Dilta altenai* sp. n.

Maximum length of male 8, of female 10 mm.

Colour pattern unknown.

Eyes black; line of contact: length = 0.5. Length: width = 0.4. Ocelli subquadrate, dark coloured.

Antennae shorter than body, very stout, as usual in the genus; apical joints composed of 6-9 subjoints.

Maxillary palp of male with moderately long ciliate hairs on the ventral surface of all joints, somewhat more numerous at apex of last joint. Shape and relative length of joints as in fig. 13. Maxillary palp of female simple, shape and relative length of joints as in fig. 14.

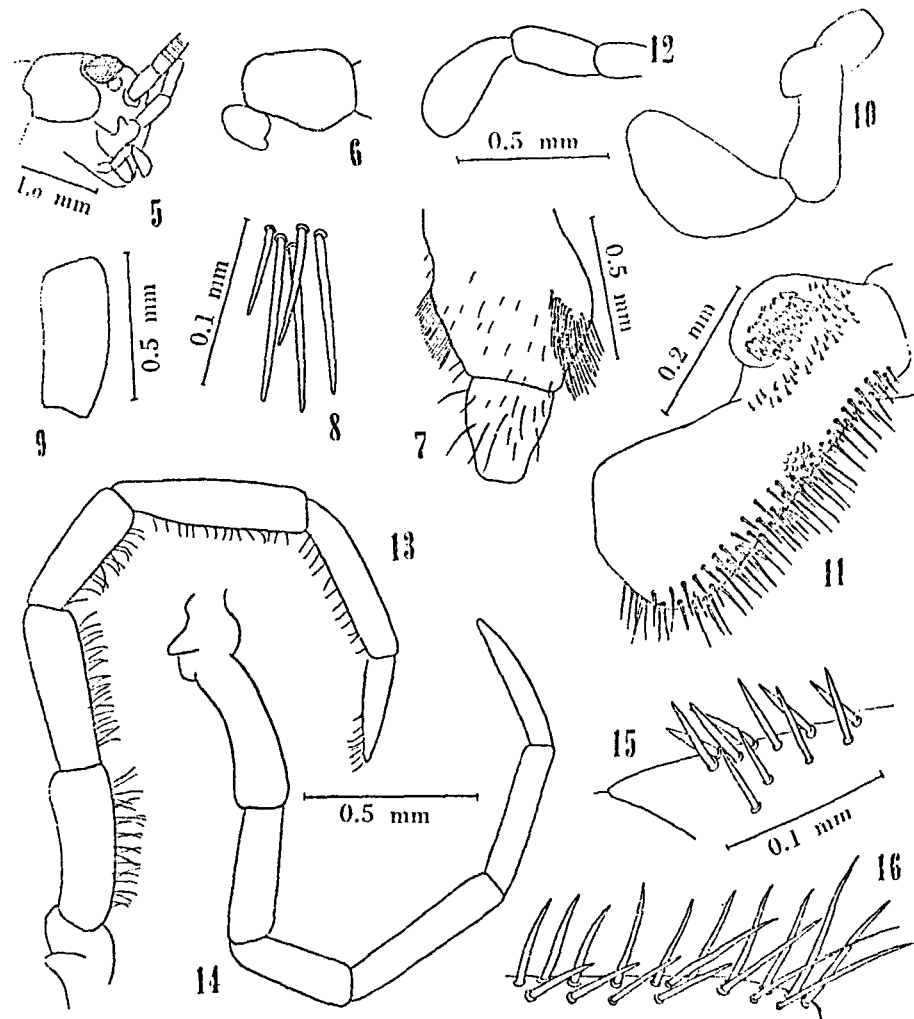
Second joint of labial palp of male with a rounded salience subbasally on anterior surface; this salience bears a number of short conical hyaline spines which come into contact with the spine tuft of the clypeus (see below); near the base of this salience there is a longitudinal fasciculus of numerous tiny delicate bristles. Posterior surface of second joint with a fasciculus of numerous long and stout bristles which also exist on the posterior surface of basal joint. Centre of posterior surface of second joint with a slightly dorsally situated group of subglobular papillae. Third joint of labial palp of male strongly triangularly widened, its posterior surface with numerous long bristles like those on second joint; sensory spines of anterior surface numerous. Labial palp of female as in fig. 12.

Clypeus of male with 1 + 1 lateral tufts of slender, slightly pigmented spines (fig. 7, 8); clypeus of female simple.

Apical region of inner surface of fore femur of male and the whole of the inner surface of fore tibia with numerous delicate sensory bristles. Ventral surface of fore trochanter and femur of male with numerous spine-like bristles, very short on trochanter and base of femur (fig. 15), longer towards apex of the latter (fig. 16). Mid and hind legs of male without special characters. — Legs of female without special characters, the setae on ventral surface of fore legs slender and not numerous.

Hairs on urosternites in moderate number. Relation length of stylet: length of coxite, in the male, on segments II-VII = 0.4, VIII = 0.6, IX = 0.6; in the female, on segments II-VII = 0.4, VIII = 0.8, IX =

0.6. Ovipositor simple, slightly surpassing the apex of terminal setae of stylet IX. Gonapophyses VIII with 55-60 joints, their chaetotaxy as usual



*Dilta altenai* sp. n. Fig. 5, head of female, lateral aspect; fig. 6, eye and ocellus, frontal view; fig. 7, clypeus and labrum of male; fig. 8, setae of tufts of clypeus of male, high magnification; fig. 9, scapus of female; fig. 10, labial palp of male, with its bristles; fig. 12, labial palp of female; fig. 13, maxillary palp of male, with its ciliate hairs; fig. 14, maxillary palp of female; fig. 15, spine-like setae on ventral surface of fore trochanter of male; fig. 16, idem, on apex of fore femur. Wygodzinsky del.

in the genus. Anterior parameres of male with 5-6 joints, posterior ones with about 8. Penis reaching to tip of posterior parameres.

Material examined: Tenerife, Barranco Andura or Andola, south of Realejo Alto, 17-III-1947 (1 male, holotype, 1 female, allotype, 2 males and 3 females, paratypes, Mus. Leiden); Tenerife, Agua Garcia, above Tacoronto, ± 800 m, 15-III-1947 (2 females, paratypes, Mus. Leiden); Tenerife, beach east of La Paz, near Puerto Orotava, 19-III-1947 (5 females, paratypes, Mus. Leiden); Tenerife, Agua Mansa-Portillo, 2260-2100 m, 2-V-1947 (1 female, Mus. Leiden); Tenerife, Las Mercedes, ± 650 m, 22-III-1947 (1 female, Mus. Leiden).

The new species which we have great pleasure in dedicating to its collector, differs completely in the male from all formerly described *Dilla*; the peculiar armature of the clypeus and the shape and setae of the labial palpus are very characteristic. There are very few morphological characters for the determination of most of the females of *Dilla*, the chief feature of specific value being probably the colour pattern, generally not perceptible in preserved specimens. The female of *altenai* differs from the other Canarian species, *insulicola* Wygodzinsky, by the characters mentioned in our key; as to the remainder of the genus, *altenai* can only be separated from the females of *hibernica* (Carpenter) and *succica* Agrell, whose anterior gonapophyses are composed of a much smaller number of joints than in the present species; as to the remainder of the species of the genus, no good differential characters are available.

The following key for the determination of the species of *Dilla* described to date, must only be applied to mature specimens; especially since the secondary sexual characters of the male make their appearance in that stage only. If only females are known from a certain locality, it will be advisable to list them as *Dilla* spec., unless males be found later or more becomes known on the colour pattern or other characters that might lead to a specific identification in this sex.

Key for the males of *Dilla*

1. Second joint of labial palp simple, viz., without processes or specialized bristles 2
- Second joint of labial palp with peculiar processes and/or specialized bristles 3
2. Very large, stout species (12 mm or more); antennae longer than body; scapus twice as long as eye, in lateral aspect (fig. 1); fore tibia with an extensive field of short sensory bristles; palpi strong and elongate, last joint of labial palp strongly triangularly widened *insulicola* Wygodzinsky
- Smaller species (less than 12 mm); antennae shorter than body; scapus not much longer than eye, in lateral aspect (as in fig. 5); fore tibia without sensory bristles; palpi short, last joint of labial palp clavate *lundbladi* Agrell
3. Base of second joint of labial palp with a large rounded process on which there

- are inserted numerous conical sensory spines (fig. 11); clypeus with a group of sensory spines (figs. 7, 8)
- Base of second joint of labial palp without such a process; clypeus without group of sensory spines
- 4. Centre of anterior border of second joint of labial palp with a group of sensory spines 12 stout
- No such group on anterior border of second joint of labial palpus of short
- 5. Lateral surface of second joint of labial palp with a longitudinal row of sensory spines, in addition to a similar fascia on posterior surface *littoralis* Womersley
- Lateral surface of second joint of labial palp without the mentioned row (Grass)
- 6. Anterior surface of second joint of labial palp without spiniform setae long as
- Anterior surface of second joint of labial palp with an irregular fascia of strong spiniform setae *hibernica* Carpenter
- 7. Posterior border of second joint of labial palp with delicate and relatively spiniform setae; ventral surface of trochanter, femur, and tibia of fore legs with very elongate spiniform setae; internal surface of anterior femur and tibia with large number of delicate sensory hairs *thornleyi* Womersley
- Posterior border of second joint of labial palpus with short and stout spiniform setae; ventral surface of trochanter, femur, and tibia of fore legs with very short spiniform setae only the internal surface of fore tibia with numerous sensory hairs *saxicola* Womersley

Key for the females of *Dilla*

1. Large and stout species (15 mm); antennae longer than body; scapus twice as long as eye, in lateral aspect (fig. 1); ovipositor surpassing apex of stylet IX by the whole length of the latter; gonapophyses with 70-80 joints *insulicola* Wygodzinsky
- Smaller and more delicate species; antennae shorter than body; scapus not much longer than eye, in lateral aspect (as in fig. 5); ovipositor not or only slightly surpassing apex of stylets IX; gonapophyses with smaller number of joints
2. Anterior gonapophyses with 37-46 segments
- Anterior gonapophyses with not less than 47 joints *italica* (Grassi); *littoralis* (Womersley); *lundbladi* Agrell; *saxicola* (Womersley); *thornleyi* (Womersley) and *altenai* sp. Carpenter
3. Anterior gonapophyses with 37-45 joints *hibernica* Carpenter
- Anterior gonapophyses with 43-46 joints *succica* Agrell

*Lepisma myrmecobia* Silvestri, 1908

Material examined: Tenerife, Barranco near Tacoronto, 10-III-1947 (1 male, Mus. Leiden).

*Ctenolepisma lineata* (Fabricius, 1775)

The specimens seen are very variable in the intensity of their pigmentation, those from higher altitudes being much darker than those captured or near sea-level. We are convinced that the var. *catonii* Ridley, 1881, does not deserve taxonomic rank, and thus consider it as a simple synonym of *lineata*.

Material examined: Tenerife, Las Cañadas and Pico del Teide, 2100-3100 m, 28/29-III-1947 (5 females, Mus. Leiden); Barranco west of Realejo, at the coast, 2-IV-1947 (1 male, Mus. Leiden); Tenerife, Icod de los Vinos, 5-IV-1947 (1 male, 1 female, 1 small specimen, Mus. Leiden); Tenerife, Barranco Martianez, east of Puerto Orotava, 27-III-1947 (1 male, Mus. Leiden); Tenerife, between Guimar and Socorro, 12-IV-1947 (1 male, 2 females, Mus. Leiden); Tenerife, Los Cristianos, 16-IV-1947 (1 male, 2 females, Mus. Leiden).

### RESUMEN

Se examinan los tisanuros coleccionados por el Dr. C. O. van Regteren Altena en las Islas Canarias, en la primavera de 1947. Hasta la fecha se conocen de las Islas Canarias los lepismátidos *Ctenolepisma lineata*, *Lepisma myrmecobia* and *Lepisma saccharina*, y los maquilidos *Dilla insulicola* y *Dilla attenai*, siendo esta última especie descrita como nueva. Aunque nuestros conocimientos no permiten conclusiones zoogeográficas muy amplias, podemos decir que la fauna de tisanuros de estas islas tiene afinidades puramente palearecticas.

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luego

$$l_{10 \cdot 3} = \frac{2(10.1)}{(10.3)} \quad 3 \quad \sqrt{5}.$$

DODECÁGONO DE QUINTA ESPECIE.—Siendo  $\widehat{AC}$  la dozava parte de la circunferencia ( $\sigma$ ), si por los puntos  $A$ ,  $C$  trazamos en sentido contrario las cuerdas  $AB$ ,  $CD$  iguales á (12.5), siendo  $m$  su punto de intersección, trazando la cuerda  $BD$  como el triángulo  $AmC$  es equilátero, resulta

$$l_{12 \cdot 5} = 2(12.1) = 2\sqrt{2 - \sqrt{3}}.$$

De un modo análogo se hallan sencillamente los lados aparentes de los pentadecágonos regulares no convexos.

### XXIX.—Catálogo descriptivo de los Insectos Neurópteros de las Islas Canarias.

POR EL R. P. LONGINOS NAVÁS, S. J.

### INTRODUCCION

Naturalistas extranjeros han dado cuenta, de vez en cuando, de algunos insectos Neurópteros de Canarias, que habían llegado á su noticia; mas no sabemos **quie** ningún español haya tomado este trabajo. Habiendo tenido ocasión de estudiar diversos Neurópteros de aquellas islas, me he decidido á formar **este** Catálogo, por incompleto que él sea todavía. En él he reunido lo que he encontrado esparcido en los