

## THYSANURA FROM JUAN FERNANDEZ ISLAND

(Apterygota)

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El autor informa sobre una colección de *Thysanura*, obtenida en Masatierra, Juan Fernández, por el Rev. P. Guillermo Kuschel. Se encontró un Lepismátido, *Isolepisma annectens* Silvestri 1923, conocido exclusivamente de estas islas, así como *Kuschelochilis ochagaviae* gen. n. sp. n., un Maquílido cuya descripción detallada se presenta. Este género, que pertenece a los *Meinertellinae*, difiere de todos los otros géneros de la familia por la completa ausencia de vesículas evaginables sobre los urosternitos. El género parece estar relacionado con *Allomachilis* Silvestri y *Nesomachilis* Tillyard, ambos de la región australiana. Debido a nuestros conocimientos muy incompletos de la fauna de *Machilidae* de la orla pacífica de Sudamérica, este hallazgo no se presta todavía a conclusiones zoogeográficas definitivas.

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During his stay on Juan Fernández, the Rev. G. Kuschel obtained a small and valuable collection of *Thysanura* which we have now before us; our sincere thanks are due to the Rev. Kuschel for permitting us to study these insects.

Our former knowledge of the *Thysanura* of Juan Fernández is limited to a paper by Silvestri (1923) who described *Isolepisma annectens* sp. n. from Masatierra and Masafuera, and which we also found among the specimens now examined; there is further a new genus and species of *Machilidae*, which we describe below.

## Family LEPISMATIDAE

*Isolepisma annectens* Silvestri, 1923

This species has been well described by its author; so far it is known only from Juan Fernández.

Material examined: bahía Cumberland, Masatierra, Juan Fernández, under bark of trees, 12 III-1951, Kuschel col. (2 ♂♂, 5 ♀♀, in the collection of Investigaciones Entomológicas, Facultad de Filosofía y Educación, Universidad de Chile; 2 ♂♂, 1 ♀, author's collection).

## Family MACHILIDAE

*Kuschelochilis* gen. n.

*Meinertellinae*. — Size large, antennae and caudal appendages elongate, palpi and legs relatively short. Body and caudal appendages with, mouthparts, antennae and abdominal stylets without scales.

Eyes slightly wider than long. Ocelli subtriangular, small, situated submedially before the eyes. Antennae longer than body, delicate, slightly widened at base, the distal joints divided into numerous subjoints, these with strong bristles, fine hairs and peculiar sensoria. Mandibles normal, with four teeth. Maxillary palp of male with specialized bristles. Last joint of labial palp elongate, in both sexes.

Legs of second and third pair with stylets. First pair of male not distinctly stouter than others.

Sternites of abdominal segments very tiny. Urosternites II-IX with one pair of stylets each; exsertile vesicles completely absent. Terminal spine of stylets shorter than half the length of stylet. Coxites without spine-like bristles. Parameres of male absent; penis short and stout, the basal portion transverse, the apical portion subtriangular. Ovipositor of female delicate, elongate, of primary type.

*Filum terminale* longer than body, *cerci* shorter than half the length of the *filum terminale*. Caudal appendages with scales only, without hairs or bristles. Apex of *cerci* with two spiniform processes of different size.

Type of genus: *Kuschelochilis ochagaviae* sp. n.

We take special pleasure in naming this extraordinary genus for its discoverer.

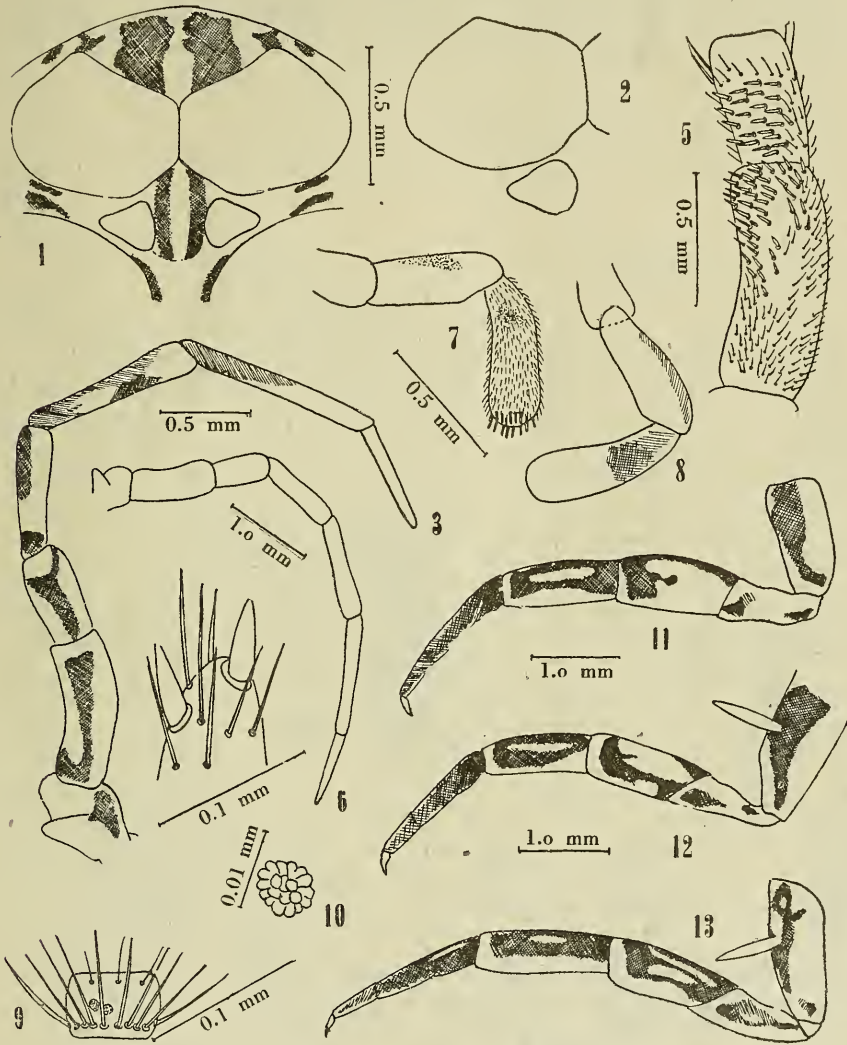
The present state of our knowledge of the *Machilidae* does not permit to fix exactly the systematic position of *Kuschelochilis*. The genus which belongs to the *Meinertellinae*, seems somewhat related to *Allomachilis* Silvestri, 1906, from New South Wales, a machilid with subtriangular submedian ocelli, and with exsertile vesicles only on abdominal segments II-IV, but without stylets on its legs. *Kuschelochilis* approaches also *Nesomachilis* Tillyard, 1924, a genus from the Australian region, on account of the shape and position of its ocelli and the specialized bristles of the male maxillary palp. We do not know any American genus that might be compared to *Kuschelochilis*. Owing to our very incomplete knowledge of the *Machilidae* from the Pacific coast of South America, however, no zoogeographical conclusions can be based upon these findings.

The most typical character of *Kuschelochilis*, which does not repeat itself in any other genus of the family, is the complete absence of exsertile vesicles on the abdominal urosternites, a fact which seems to indicate specialization, but not a primitive condition. Verhoeff (1910) who considered the actual *Meinertellinae* as a family, *Meinertellidae*, founded upon *Allomachilis*—a genus characterized by the very reduced number of its exsertile vesicles—a separate subfamily, *Allomachilinae*. If we adopted Verhoeff's point of view, *Kuschelochilis* should be made the type of a further supergeneric group. We do not adopt this course as we consider the number or even the presence or absence of exsertile vesicles as a purely secondary character which has no value for the characterization of higher groups (Wygodzinsky, 1941).

*Kuschelochilis ochagaviae* sp. n.

Body length of male (without caudal appendages) 14.0, of female 16.0 mm. Pattern formed by scales unknown. Intense hypodermal pigment present on various region of the body and the appendages.

Pattern of eyes unknown. Relation length : width of eyes = 0.8; line of contact : length = 0.35. Ocelli as in generic description and figs. 1 and 2; their color reddish.

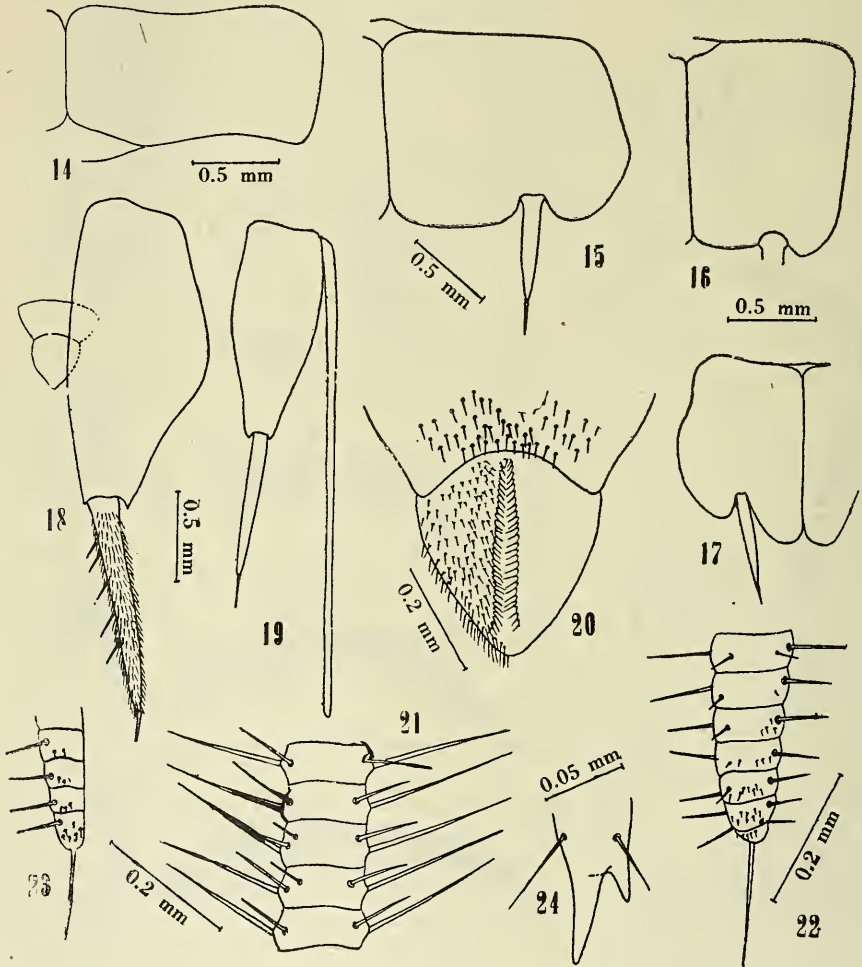


Wygodzinsky, *Thysanura* of Juan Fernandez,

*Kuschelochilis ochagaviae*.—Fig. 1, Head, frontal view; fig. 2, eye and ocellus, lateral aspect; fig. 3, maxillary palp of male; fig. 4, idem, apex of last joint; fig. 5, idem, internal surface of joints III and IV; fig. 6, maxillary palp of female, pigment not shown; fig. 7, labial palp of male; fig. 8, labial palp of female; fig. 9, subjoint of distal portion of antenna; fig. 10, sensorium of distal subjoint of antennae; fig. 11, anterior leg of male; fig. 12, median leg of male; fig. 13, posterior leg of male.—Wygodzinsky del.

Hairs of head short, not numerous. Hypodermal pigment as in fig. 1.

Antennae longer than body (maximum length observed 25 mm.). *Scapus* and *pedicellus* with extensive pigmentation. Joints of *flagellum* uniformly light brownish, the intermediate subjoint whitish. Joints of distal portion of *flagellum* divided into 25 subjoints (fig. 9); these with



*Kuschelechilis ochagaviae*.—Fig. 14, Urosternite I of male; fig. 15, urosternite V of male; fig. 16, urosternite VIII of male; fig. 17, urosternite VII of female; fig. 18, urosternite IX of male; fig. 19, urosternite IX of female; fig. 20, penis; fig. 21, segments of the median portion of anterior gonapophyses of female; fig. 22, apical segments of anterior gonapophyses of male; fig. 23, apical segments of posterior gonapophyses; fig. 24, apical spines of *cercus*.—Wygodzinsky del.



a basal wreath of strong bristles, some rather delicate apical hairs and a few peculiarly shaped sensoria (fig. 10).

Shape and pigmentation of maxillary palp of male as in fig. 3; length of last joint about half that of penultimate, its spines of medium size (fig. 4). Bristles of palp short and not numerous; internal surface of joints III and IV with specialized hairs and bristles (fig. 5). Shape of maxillary palp of female as in fig. 6, its pigmentation similar to that of male, somewhat more intense. Labial palpus of male as in fig. 7, its last joint elongate, not distinctly widened apically; all bristles short. Pigment reduced to small spots on joints II and III. Shape of labial palp of female as in fig. 8; its pigmentation more extensive and stronger than in male.

Shape and pigmentation of legs of male as in figs. 11-13; special sensory organs absent. Legs of female as in male. Bristles short, quite numerous; ventral spiniform bristles absent.

Shape of urosternites as in figs. 14-19. Relation of length of stylet : coxite of male, on segments II-VII = 0.6, VIII = 0.7, IX = 0.7; in the female, on segments II-VII = 0.6, VIII = 0.7, IX = 0.75. Stylets with faint pigment; its bristles numerous, rather delicate; stylets of last segment (fig. 18) on internal surface with some elongate spiniform bristles. Apical spine hyaline, shorter than half the length of stylet.

Penis of male short and stout (fig. 18), its apical portion subtriangular, slightly longer than basal one, its opening ventrally and longitudinally; its surface with very numerous short hairs (fig. 20). — Ovipositor of female surpassing slightly the apex of stylet IX, delicate, parallelsided. Anterior gonapophyses with about 60 segments; the basal 10-15 segments bare, or with one bristle at its inner border, the remaining segments (fig. 21) with 2 large bristles, one on each side, and 2-3 smaller ones; the lateral bristles become progressively longer towards apex. Distal segments with some tiny sensorial hairs (fig. 22). Apical spine delicate, as long as the 4-5 last segments together. Posterior gonapophyses bare on their basal two thirds, the apical segments with one large bristle and some short hairs (fig. 23).

Maximum length of *filum terminale* 20, of *cerci* 7 mm. Apical spines of *cerci* as in fig. 24.

Material examined: El Camote, Mt. Yunque, Masatierra, Juan Fernández, 600 m., 17-III-1951, Kuschel col. (1 holotype, 1 allotype, 1 ♂, 3 ♀♀, 1 juv., paratypes, in the collection of University of Chile; 1 ♂, 2 ♀♀, paratypes, in the author's collection).

**Biology.**—We were informed by the collector that he obtained these insects beating leaves and rosettes of the bromeliad *Ochagavia elegans*, where *Kuschelochilis* finds protection against the very strong winds and the almost continuous mist and rain which are prevalent on the slopes of Mt. Yunque.

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## IX. CONGRESO INTERNACIONAL DE ENTOMOLOGIA

Los congresos internacionales de entomología, que antes de la última conflagración mundial alcanzaron a organizarse con regularidad en número de siete, quedaron durante diez años interrumpidos hasta abrirse la nueva serie que comenzó en 1948 en Estocolmo (Suecia). Acaba de celebrarse en Amsterdam (Holanda) el IX Congreso Internacional, el segundo de postguerra, los días 17 a 24 de agosto. Tuvo este Congreso una notable concurrencia y un programa nutrido de estudios, simposios y excursiones. Los diferentes tópicos se repartían en catorce secciones con una gama variable de sistemática, nomenclatura, genética, fisiología, etología, ecología, zoogeografía, entomología agrícola y forestal, etc. La Sociedad Chilena de Entomología adhirió al Congreso y se suscribió a las publicaciones, lamentando al mismo tiempo que no haya podido hacerse representar por ningún delegado chileno. (G. K.)