ORTHOPTEROLOGICAL NOTES III

THE PHYLLOPHORINAE (ORTHOPTERA, TETTIGONIIDAE) IN Mr. WILLEMSE'S COLLECTION (EIJGELSHOVEN, LIMBURG) AND IN THE NATUURHISTORISCH MUSEUM, ROTTERDAM

by

Dr. C. DE JONG

In 1946, after the war, I had the opportunity again to visit my friend Mr. C. Willemse, and to study the Phyllophorinae in his collection. At the same time I could examine two specimens from the Rotterdam Museum, belonging to the subfamily, which had been sent to him for identification. Especially these last mentioned two specimens are very interesting, the one being the still unknown ♂ of *Sasima areolata* Bol., the second a somewhat aberrant ♀ specimen of *Phyllophora keyica* Brunner v. Watt.

For the literature I may refer to Orthopterological Notes II (De Jong, 1946). The sequence of the species is according to Karny (1924)

Sasima spinosa Brunner von Wattenwyl

Mr. C. Willemse's Collection:
New Guinea: 1 ? (abdomen damaged).

Sasima lactuca Bolívar

Mr. C. Willemse's Collection:
New Guinea: 1 ♂, Sattelberg, leg. H. Rolle.

Sasima areolata Bolívar

Mr. J. H. Jurriaanse's Collection, in Rotterdam Museum:
New Guinea: 1 ♂, Roon Island, N. of New Guinea (plesioallotype).

In the general characters the specimen belongs to *Sasima*. In Karny's key it runs to *S. areolata* Bol. of which the ♀ was known in only one adult

specimen (Bolívar, 1903) and one immature specimen (Griffini, 1908). According to the shape and armament of the pronotum, the shape of the elytra, and the transverse wrinkles on the dorsal surface of the femora, the present ♂ should undoubtedly be reckoned to *areolata*. However, there are some differences with the ♀. In the ♀ the armament of the pronotum consists of alternating strong and smaller thorns on the lateral ribs of the posterior part. In the ♂ these small thorns are hardly visible except near the apex. The shape of the elytra (fig. 1) is well characterized by Bolívar (comp. Karny, 1924, p. 34).

The head, pronotum and elytra are of a lively green, a shade towards bluish, with a few yellowish patches. Probably these patches occurred after the animal had died, in consequence of beginning fermentation. The anterior and intermediate legs are more or less greenish-bronze. The posterior legs are yellowish with a dark spot on the femora just above the knee. The thorns on all legs are concolourous, with the utmost apex only dark brown to black. The venae in the wings are light green. The thorax except the pronotum, and the abdomen are yellowish, probably discoloured after death. The ♂ abdominal appendages show a streak of green ventrally. From these details concerning the colour we may assume that the living animal was nearly totally green.

The head is coarsely punctate dorsally. The front too shows dense coarse punctures. The genae are more or less smooth. The antennal scrobes are rather flat, not prominent. The first antennal joint is cylindrical, about 1½ times as long as broad, and nearly 3 times as thick as the 3rd and further joints. The second joint is somewhat shorter than the 1st and more or less inverted pear-shaped. The third joint is thin, cylindrical, about 3 times as long as broad, and as long as the 4th and 5th joints together. The following joints slightly vary in length (breadth: length = 1:1 to 1:1¾). In the ♂ type the antennae are broken off at about 2 cm from the base. In all probability the length is nearly equal to that of the elytra.

The armament of the legs is as follows:

anterior legs: femora dorsally smooth except some transverse rugulosities, ventral internal 3½-3½ thorns, external 4-4; tibiae smooth on dorsal internal carina, dorsal external with 3-3 small spines, ventral internal 5-5 and external 4-4 thin thorns.

intermediate legs: femora dorsally smooth as anterior ones, ventral internal 4-4, external 4-4; tibiae dorsally smooth on external edge, internal ridge with 5-5 small thorns, ventral internal 7-7, external 7-7 small thorns.

posterior legs: femora dorsally smooth, but with distinct transverse wrinkles in the basal half, ventral external 8-8 strong thorns and internal

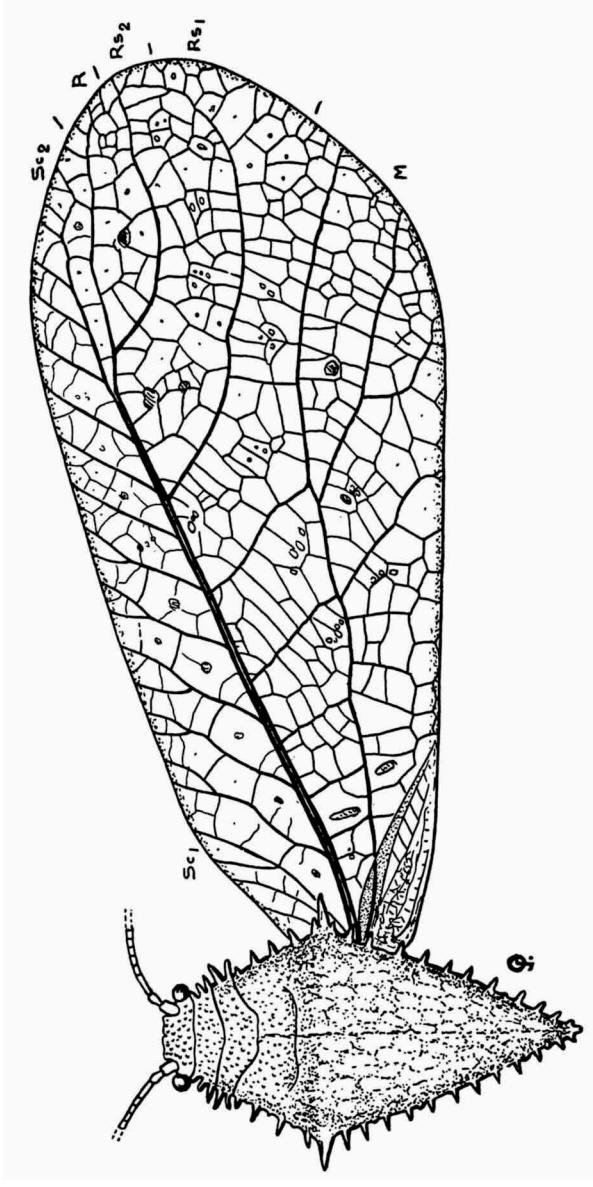

Fig. 1. *Sasima arcolata* Bol., ♂ (plesioallotype), head, pronotum and right elyton. × 1½.

5-6 somewhat smaller ones; tibiae dorsal internal 14-15, external 7-9 small thorns, ventral internal 8-8, external 8-8 small thorns.

The ♂ abdominal appendages (fig. 2) are very similar to those of the allied species. The subgenital plate is rather long and slender, broadest at the base, slightly tapering to $^2/_5$ of its length, then widening again towards the strongly incised top. The lobes of the subgenital plate each taper in their apical half which in this specimen is dorsally bent towards the body. I do not know whether this situation is natural or artificial. On their internal side, just before the apex on which the styli are placed, a rather strong

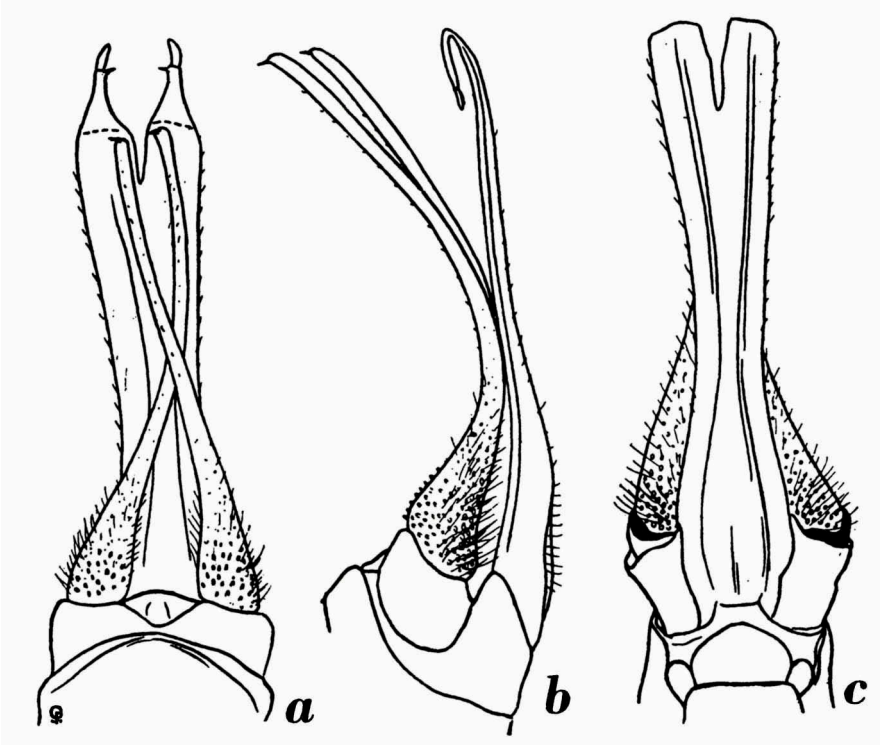

Fig. 2. *Sasima areolata* Bol., ♂ (plesioallotype), abdominal appendages: a, dorsal view, b, lateral view, c, ventral view. × 5.

dark thorn is found. Karny mentions such a thorn in other species in the genus. The cerci are broad at their base, strongly tapering conically in their basal quarter part, then remain about of equal breadth towards their apex which bears a short thorn. The cerci are curved upwards. The strongest curve is found at one fourth from the base, the remaining part is bent rather faintly, but the apical thorn is pointing upwards. The base of the cerci bears a number of small blunt protuberances on the dorsal surface. The supraanal plate is only small, shield-shaped.

Measurements (in mm) of the plesioallotype compared with those of the holotype and the specimen described by Griffini:

	plesio-allotype ♂	Bolívar, 1903 type ♀	Griffini, 1908 immature ♀
total length (incl. subgenital plate)	58	—	—
total length with folded wings included	—	—	113
length body (front to subgen. plate)	41½	55	—
length pronotum	33	45	42
length anterior part (before hum. thorns)	13½	—	—
length posterior part (behind hum. thorns)	22	30	—
breadth pronotum incl. hum. thorns	24	27	—
largest breadth without hum. thorns	19	—	—
breadth pronotum anteriorly	6½	—	—
length antennae	?	—	—
length elytra	80	96	98
breadth elytra	35½	37	40
length wings	74	—	—
breadth wings	34	—	—
length anterior femora	18	—	—
length anterior tibiae	20	—	—
length intermediate femora	21	—	—
length intermediate tibiae	22	—	—
length posterior femora	42	48	53
length posterior tibiae	44	—	—
length subgenital plate ♂	17	—	—
length cerci	13½	—	—
length ovipositor	—	32	35

Sasima angulipennis Karny

Mr. C. Willemse's Collection:
Locality unknown: 1 ♀.

In all respects this specimen fits in with the description, the only difference is found in the intermediate thorns on the lateral borders of the pronotum, which are little distinct. As this is also the case in the ♂ of *S. areolata* Bol. I presume that this character is less distinctly visible in the ♂♂ than in the ♀♀.

Phyllophora keyica Brunner von Wattenwyl

Mr. J. H. Jurriaanse's Collection, in Rotterdam Museum:
Key Islands: 1 ♀, Toeal, Smaller Key Islands, 1920.

I compared the specimen with the descriptions of both species known from the Key Islands in the genus, viz., *Ph. retroflexa* Karny and *Ph. keyica* Brunner v. Watt. From the first mentioned species the present specimen differs very strongly in the shape of the pronotum, which is more distinctly

lozenge-shaped with nearly straight borders; in *retroflexa* the lateral borders of the pronotum are rather strongly convex. The shape of the elytra in both mentioned species is rather similar, but in *retroflexa* the posterior border shows a distinct concave curve before the apex. In the present specimen and in *keyica* this concavity is more superficial, nearly a straight line. In almost all characters the specimen corresponds with *keyica* more than with *retroflexa*, viz., the shape of the tegmina, the armament of the legs and the pronotum, the extension of black on the knee caps. However, one distinct difference is found with *keyica* which causes some trouble, namely the shape of the pronotum. In the present specimen it is more slender than figured by Karny (1924, fig. 17), though the measurements remain within the limits given by Brunner von Wattenwyl, Karny (1924, p. 71), and Kästner (1933, p. 184). For comparison I give them again:

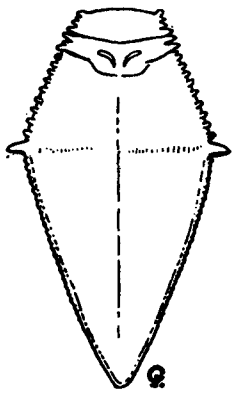

Fig. 3. *Phyllophora keyica* Brunner v. Watt., ♀, pronotum. × 1½.

Measurements in mm:

	Br. v. W. ♀ type	Karny ♀♀	♀ coll. Jurr.	Kästner ♀
length body, incl. subgenital plate	43	34—48	44	42
length pronotum	33	30—33	33	30
breadth pronotum, incl. hum. spines	22	19—22	19	20
length posterior part pronotum	23	19—21½	21½	21½
length elytra	67	67—73	70	69
breadth elytra	28	27—29	29	29
length posterior femora	—	31—36	36	35
length cerci	—	3	3	—
length subgenital plate	—	3	3	—
length ovipositor	31	37—39	33	30

Considering the above measurements I do not feel justified to separate the specimen from *keyica*, though after the shape of the pronotum it might be regarded as a transition towards *retroflexa*.

Phyllophora lanceolata Brunner v. Watt. var. **dubia** Karny

Mr. C. Willemse's Collection:
New Guinea: 1 ♀.

Phyllophorella transiens Karny

Mr. C. Willemse's Collection:
New Guinea: 1 ♀, Sattelberg, leg. H. Rolle.

The specimen corresponds in all details with Karny's description, but it has some white markings on the elytra: at the left at base between R and M, at the right much smaller before Sc 2.

LITERATURE

BOLÍVAR, I., 1903. Contributions à l'étude des Mecopodinae. Ann. Mus. Nat. Hungar., vol. 1, pp. 161-178.

GRIFFINI, A., 1908. Phyllophorinae del Museo civico di Storia Naturale di Genova. Zool. Anz., vol. 32, pp. 641-649.

DE JONG, C., 1946. Orthopterological Notes II, The Phyllophorinae (Orthoptera, Tettigoniidae) in the Rijksmuseum van Natuurlijke Historie, Leiden and in the Zoölogisch Museum, Amsterdam. Zool. Meded., vol. 26, pp. 211-230, 5 figs.

KARNY, H. H., 1924. Monographie der Phyllophorinen. Treubia, vol. 5, suppl.

KÄSTNER, A., 1933. Die Tettigoniidae des Stettiner Museums. 2. Phyllophorinae. Konowia, vol. 12, pp. 161-191, 15 figs., 2 pls.