臺灣總督府

農業試驗所報告

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臺灣總督府農業試驗所

昭和十六年三月

REPORT No. 78 March, 1941

GOVERNMENT AGRICULTURAL RESEARCH INSTITUTE
TAIWAN, NIPPON (JAPAN)

Prof. KISABURO SHIBUYA, *Director*

SOME INJURIOUS INSECTS OF AGRICULTURAL PLANTS AND FOREST TREES IN SIAM AND INDO-CHINA, I APHIDIDAE

BY

Ryoichi TAKAHASHI

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Under the circumstances of the world, Siam, French Indo-China and other countries i. the south-eastern part of Asia are destined to be more intimately related to our Empire economically. Then we, agricultural scientists in Taiwan (Formosa), are interested especially in the agriculture and other sciences of plant industry in this region.

The author of this report has recently made an entomological expedition to Siam and French Indo-China, and one of the results of his efforts is here presented.

The Aphididae or plant lice cause serious damage by feeding on the sap of economic plants and by transmitting their virus diseases; and black moulds developing on the excrements of these insects interfere with the functioning of the leaves.

The present report on this important group of injurious insects will contribute not only to the economic entomology, but also to the agriculture and forestry of Siam, French Indo-China and the neighbouring territories, where the study of these insects has been much neglected.

Prof. Dr. Kisaburo SHIBUYA,
Director.

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SOME INJURIOUS INSECTS OF AGRICULTURAL PLANTS AND FOREST TREES IN SIAM AND INDO-CHINA, I APHIDIDAE

By

Ryoichi TAKAHASHI

INTRODUCTION

The injurious insects of agricultural plants and forest trees in Siam (Thailand) have been explored by W. R. S. LADELL (1927, 1930, 1932),[1] S. BELLER and P. BHENCHITR (1936),[2] and others, but the survey of these insects is only in its initial stage.

In French Indo-China many reports have been written on various insect pests of economic plants, but our present knowledge of them is still very far from complete.

I had the opportunities of staying in Siam for about three months from late March onward, and of making a trip to Cambodia, Indo-China, in 1940, and was able to pay attention to these insects, especially to the small forms, which have been practically neglected in these countries.

In the present paper an account is given of Aphididae or plant lice observed during my expedition. This group of insects includes many species of economic importance, but little has been known of them in these regions. So far as I am aware a single species, *Aphis gossypii* GLOV. attacking the cotton plant, has been recorded from Siam, and four species, *Toxoptera aurantii* BOYER, *Ceratovacuna lanigera* ZEHNT., *Geoica lucifuga* ZEHNT. and *Melaphis chinensis* BELL, from Indo-China.

In this paper about thirty species from Siam and five from Indo-China are listed, with biological notes on, or supplementary descriptions of, some of the species; and eight new species and a new variety are discussed.

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(1) Jl. Siam Soc., Nat. Hist. Suppl., VII, no. 2, pp. 101–105 (1927); IX, no. 2, pp. 161–172 (1933); Siam, Nature and Industry, Bangkok, pp. 42–50 (1930).

(2) Dept. Agr. & Fish., Bangkok, Tech. Bull. 1 (1936).

The aphid fauna of this part of south-eastern Asia is similar to that of Formosa, comrpising some species previously known only from the island. The period of my journey was from the late part of the dry hot season to the beginning of the rainy season, and the aerial parts of many herbaceous plants were withered or died, and the aphids were scarce in species and in individuals on them. The aleyrodiform females of some species, which are adapted to aestivation, with the body derm being strongly sclerotised, were, however, abundant on certain trees. The dwarf forms of the apterous females, which appear in the dry hot season, were also met with in several species.

The materials, upon which the present study is based, are preserved in the writer's collection.

My expedition was made possible by the cooperation of the Nippon Shellac-Manufacturing Company, Osaka, Japan, and my sincere thanks are due to the managers of the company.

Subfamily **LACHNINAE**

Eulachnus taiwanus TAKAHASHI.

Proc. Ent. Soc. Washington, XXXIV, p. 152 (1932).

(Apterous viviparous female) Head with 6 dorsal setae in a row between the eyes, and 4 setae in each of 2 rows between the antennae, which setae are slightly capitate and nearly as long as the basal antennal segment. Distal segment of hind tarsi a little less than twice as long as the basal segment.

Host—*Pinus* sp., attacking the leaf.

Indo-China: Angkor, Cambodia; some apterous forms (23. IV. 1940).

Previously known only from Formosa.

Some black apterous females of *Lachnus* sp. parasitised by a wasp and some similar forms of *Cinara* sp. killed by a parasite were observed on a tree of the Fagaceae and on *Pinus* sp., respectively, on Mt. Sutep near Chiengmai, Siam, on April 9, 1940.

Aiceona siamensis n. sp.

(Alate viviparous female) Brown. Body with many long fine setae. Head lacking granules, with over 25 dorsal setae, which are longer than the basal antennal segment. Antennae long, with many long fine setae, the longer ones of which are as long as the 2nd segment; the 2nd segment a little longer than

the 1st, about 1.5 times as long as wide; the 3rd long, longer than the width of head including the eyes, somewhat stouter than the middle part of fore tibia, not imbricated, with 40–45 small or moderate circular sensoria scattered along the whole length, which are a little protruding; the 4th a little striate, with 16 similar sensoria; the 5th with 6 similar ones on the basal half, the primary sensorium circular, moderate, not surrounded with setae; the 6th wanting secondary sensoria, not narrowed at the base of the distal part; the 4th—6th gradually narrowed at the base; the relative length of segments about as follows: III–42, IV–22, V–20, VI–9+5. Eyes with distinct ocular tubercles. Rostrum not reaching the middle coxae, the distal segment distinctly longer than the penultimate. Abdomen not sclerotised, with setae as long as those on the head. Cornicles large in diameter, on sclerotised cones, which are with many setae, that are long, fine and equal in size, but shorter than those on the abdomen. Cauda short, rounded, hairy. Legs long, dark, with many long fine setae; trochanters distinct; tibiae slender, lacking spines at the apex, with setae, with are longer than the width of tibiae; hind tibiae not striate, with longer setae; tarsi with a median stout seta and some fine ones on the basal segment; hind tarsi nearly as long as the last anntennal segment, not imbricated, with the distal segment about 4 times as long as the basal; empodial setae simple. Wings imbricated, fore wings with many long fine setae on the subcosta; stigma truncate; veins not reaching the margin, the 3rd oblique twice branched, obsolete at the base; hind wings with 2 divergent veins which are separated, hooklets 3 or 5.

Body about 2.5 mm., antenna 1.72 mm., 2nd antennal segment 0.092 mm., 3rd antennal segment 0.69 mm. long, 0.046 mm. wide, fore wing about 3 mm., cornicle 0.092 mm. in diameter at tip, cone of cornicle 0.185 mm. wide at base, hair on cone of cornicle 0.095 mm., hind tibia 1.45 mm. long, 0.046 mm. wide at middle, hind tarsus 0.23 mm.

Host—A plant of the Lauraceae, attacking the lower side of leaf.

Siam: Mt. Sutep near Chiengmai; single specimen (9. IV. 1940).

This species is very closely related to *Aiceona actinodaphnis* TAKAH., but differs as follows: Wings paler. The 3rd antennal segment with more ensorias,



Fig. 1.
Aiceona siamensis n. sp. (Alate viviparous female) Last 2 antennal segments.

the 5th with sensoria on the basal half, the 6th distinctly shorter than the 5th, not narrowed at the base of the distal part. In *A. actinodaphnis* TAKAH. the 6th antennal segment as long as the 5th, with the distal part narrowed at the base, and the wings dark.

Subfamily **GREENIDEINAE**

Greenidea sutepensis n. sp.

(Apterous viviparous female) Green, with a longitudinal dark brown patch at the center of abdomen; antennae pale, dusky on the distal part; cornicles pale, dusky at the apex. Body elongate, with many long stout setae, which are fimbriated at the tip. Head nearly straight on the front, with about 10 dorsal setae, which are nearly as long as, or a little longer than, the basal antennal segment and a little curved. Frontal tubercles absent. Antennae long, slender, imbricated; the 2nd segment a little shorter than the 1st, with a long seta on the mesal side; the 3rd long, longer than the width of head including the eyes, as stout as the tibiae, with about 25 setae, some of which are long, slightly fimbriated, and as long as the dorsal setae of head; the 4th with about 8 setae; the 5th with about 7 setae; the relative length of segments about as follows: III-38, IV-18, V-18, VI-14+30. Eyes normal. Rostrum slender, reaching the hind coxae. Thorax with granules on the venter. Abdomen rounded on the side, but much longer than wide, with many granules on the venter, a little sclerotised on the dorsum; a large median area of dorsum defined from the marginal area on the anterior half; dorsal setae stout, stiff or a little curved, in irregular rows, not numerous, much larger and fewer than the ventral setae, a pair present between the cornicles. Cornicles very long, cylindrical, gradually tapering, somewhat longer than the hind tibiae, about twice as long as the 3rd antennal segment, reticulate except on the distal part, with many rows of microtrichiae on the distal part, and many long stout setae except on the basal and distal small parts, a few of which are fimbriated. Caudal segment with a distinct process, which is as long as, or longer than, wide. Legs long, slender; femora imbricated, with many simple setae, which are as long as, or shorter than, the width of femora; tibiae very narrow, with 3 spine-like setae at the tip, and setae as long as, or shorter than, the width of tibiae, the longer ones of which are fimbriated; hind tibiae and tarsi striate.

Body 2.1 mm., 1.0 mm. wide, antenna 1.9 mm., head including eyes 0.46 mm. wide, cornicle 1.1 mm., 0.074 mm. wide at base, 0.083 mm. wide near base,

0.046 mm. wide at apex excluding flange, longest seta on cornicle 0.17 mm., caudal process 0.023 mm., hind tibia 0.95 mm., 0.028 mm. wide at middle, hind tarsus 0.138 mm., dorsal seta of abdomen 0.078–0.092 mm.

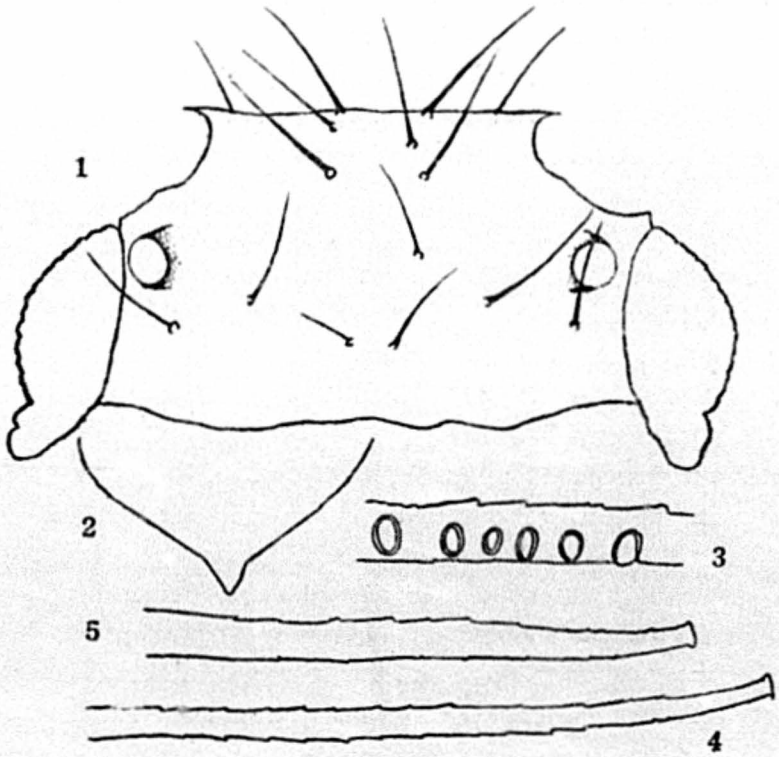


Fig. 2.
Greenidea sutepensis n. sp.
(Alate viviparous female)
1. Head. 2. Caudal segment. 3. 3rd antennal segment.
4. Cornicle (outline).
(Apterous viviparous female) 5. Cornicle (outline).

(Alate viviparous female) Blackish, antennae and cornicles black. Head nearly straight on the front, with about 11 dorsal setae, which are simple and as long as, or shorter than, the basal antennal segment. The 2nd antennal segment with a long blunt seta on the mesal side; the 3rd imbricated, a little stouter than the fore tibiae, with about 20 long simple setae, and with 16–26, usually 22–24, circular or oval sensoria in a row along the whole length except on the distal small part, which are small, moderate, or rather large, and separated from each other; the relative length of segments about as follows: III–45, IV–21, V–21, V–16+32. Cornicles very long, cylindrical, somewhat

tapering, longer than the hind tibiae, much longer than the abdomen, nearly as stout as the hind femora, striate except on the distal small part, with rows of microtrichiae on the distal part, and many very long simple setae except on the basal and apical small parts. Caudal segment with 4 pairs of long submarginal curved setae, and a distinct process, which is as long as wide. Abdomen with some shorter simple setae on the median area of dorsum. Legs long, slender; tibiae with many simple setae, 3 spine-like setae at the tip, and some microtrichiae on the distal part; hind tibiae striate on the basal half. Wings normal.

Body 2 mm., head excluding ocular tubercles 0.485 mm. wide, seta on dorsum of head (longer one) 0.1 mm., antenna 2 mm., seta on antenna (longer one) 0.115 mm., cornicle 1.6 mm., 0.069 mm. wide at base, 0.046 mm. wide at apex excluding flange, seta on cornicle (longer one) 0.23 mm., hind tibia 1.15 mm., 0.028 mm. wide at middle, hind tarsus 0.138 mm., seta on dorsum of abdomen (longer one) 0.055 mm.

Host—An undetermined tree (*Dipterocarpus ?*).

Siam: Mt. Sutep near Chiengmai; many apterous and alate forms (5. IV. 1940).

This species is characterised by the following points of the apterous form: Body green, with a longitudinal dark brown central patch. Body setae fimbriated. Antennae very long, with the 3rd segment being longer than the distal part of the 6th. Cornicles very long, reticulate. Hind tibiae striate.

Greenidea anonae PERGANDE, var. **siamensis** n. var.

(Apterous viviparous female) Greenish black, cornicles black, not paler basally. Head with about 11 dorsal setae, which are slightly curved, branched apically and as long as the basal antennal segment. Antennae slender; the 3rd segment imbricated, with about 15 setae, which are blunt at the tip and the longer ones are as long as those on the head; the relative length of segments about as follows: III–17–20, IV–10, V–13, VI–10+22. Abdomen rounded, sclerotised on the dorsum, with minute granules on the lateral part of the basal area of venter; dorsal setae stiff, stout, fimbriated, variable in size, in irregular rows. Cornicles a little longer than the width of head including the eyes, about 5 times as long as wide, narrowed towards both ends, narrowest at the apex, reticulate at the base only, with many rows of minute spinules except on the base, and with many very long simple setae except on the basal and apical parts. Caudal process distinct, somewhat longer than

wide. Legs pale, slender; tibiae with 3 slender spine-like setae at the apex, a few longer setae on the tibiae fimbriated; hind tibiae striate.

Body 1.[illegible] nm., 0.88 mm. wide, head including eyes 0.42 mm. wide, dorsal seta of head 0.08 mm., antenna 1.15 mm., 0.028 mm. wide on 3rd segment, longer seta on antenna 0.07 mm., seta on dorsum of abdomen 0.069–0.092 mm., cornicle 0.44 mm., 0.051 mm. wide at base, 0.037 mm. wide at tip excluding flange, longest seta on cornicle 0.137 mm., hind tibia 0.55 mm., 0.028 mm. wide at middle, longer seta on tibia 0.046 mm., hind tarsus 0.115 mm.

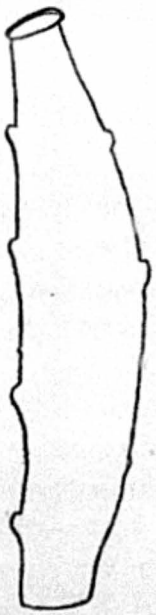


Fig. 3. *Greenidea anonae* PERGANDE, var. *siamensis* n. var. (Apterous viviparous female) Cornicle (hairs removed).

(Alate viviparous female) Antennae and cornicles black. Head with some pairs of setae at the middle of front, which are directed laterally, and with about 10 dorsal setae, which are as long as, or somewhat longer than, the basal antennal segment, sometimes slightly capitate or blunt at the tip, and a few of them are rarely fimbriated. Antennae with setae, which are blunt at the tip; the 3rd segment slightly longer than the width of head including the eyes, imbricated, scarcely curved, stouter than the 4th, with 7–12 subcircular or oval, small or large sensoria in a row along the whole length except on the distal part; the relative length of segments about as follows: III–24, IV–11, V–14, VI–11+23. Abdomen with shorter simple setae on the dorsum. Cornicles long, cylindrical, scarcely narrowed basally, a little so on the distal part, slightly curved at the apex, striate except on the apical part, subequal in length to the 3rd, 4th and 5th antennal segments taken together, slightly longer than the hind tibiae, with rows of minute spinules on the distal part, and many long simple setae. Caual segment narrowed towards the hind end, produced into a distinct process. Hind tibiae striate. Wings normal.

Body 1.5 mm., head including eyes 0.45 mm. wide, longer dorsal seta on head 0.078 mm., antenna 1.57 mm., 3rd antennal segment 0.037 mm. wide, longer seta on antenna 0.092 mm., cornicle 0.88 mm., 0.046 mm. wide at base, 0.06 mm. wide at middle, 0.037 mm. wide at tip excluding flange, longer seta on cornicle 0.162 mm., hind tibia 0.72 mm., 0.023 mm. wide at middle.

Host—*Rhodomyrtus* sp. (?).

Siam: Mt. Sutep near Chiengmai; many apterous and some alate forms (8. IV. 1940).

This species is found scattered on the lower sides of leaves, not along the midribs, and walked about when disturbed. Not attended by ants. Closely related to *Greenidea anonae* PERGANDE and differs from the specimens from Sumatra (on *Anona muricata*) in the a little longer dorsal setae of abdomen and the a little longer cornicles in the apterous form, and in the a little more sensoria on the 3rd antennal segment and the caudal segment distinctly produced into a process in the alate form. Very closely allied to an undescribed species of the genus on *Eugenia* in Sumatra, but is easily differentiated by lacking minute granules on the basal part of the dorsum of abdomen.

Paratrichosiphum flavum n. sp.

(Apterous viviparous female) Orange yellow; antennae pale, dusky on the distal 2 segments; cornicles yellow, legs pale. Body elongate, with many setae, which are stiff or a little curved, and slightly bifid or blunt apically. Head broadly rounded on the front, with about 16 dorsal setae, of which the longer ones are distinctly longer than the basal antennal segment. Frontal tubercles absent. Eyes normal. Antennae short; the 1st segment broader than long, as long as the 2nd, with 4 or 5 setae; the 3rd narrower than the tibiae, a little imbricated on the distal part, with about 10 setae, of which the longer ones are much longer than the width of the segment, shorter than the setae on the head, and blunt or slightly bifid apically; the 4th thrice as long as wide, with about 4 or 5 long setae; the 5th narrowed towards the base, with 3-5 setae; the 6th with 2 setae on the basal part; the relative length of segments about as follows: III-32, IV-14, V-15, VI-18+18. Rostrum reaching the hind coxae, with the distal segment very long and narrow. Thorax with granules on the venter. Abdomen a little sclerotised on the dorsum, with many dorsal setae, which are rather stout, straight or slightly curved, nearly as long as those on the head, and not arranged in rows; the segments fused together except on the posterior part, and a large circular median area distinct from the marginal area on the dorsum; the venter lacking granules, with many setae except on the median area, which are fewer than those on the dorsum. Cornicles short, about thrice as long as wide, rounded on the mesal side, broadest on the middle part, much shorter than the width of head including the eyes, with many rows of microtrichiae except on the basal part,

neither reticulate nor striate, with many long setae except on the basal and distal parts, which are slightly or scarcely bifid apically and longer than the width of cornicles; the bases nearly as wide as the apex. Caudal segment rounded, with about 10 long setae. Legs not slender; trochanters distinct; tibiae not striate, with 3 slender spine-like stae at the apex, and many rather stout simple setae, some of which are longer than the width of tibiae; tarsi a little striate.

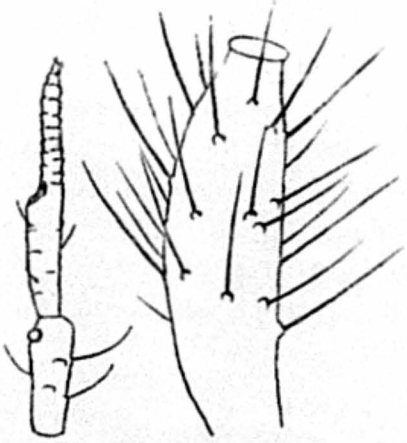


Fig. 4.
Paratrichosiphum flavum n. sp.
(Apterous viviparous female)
Last 2 antennal segments and cornicle (microtrichiae not shown).

Body about 1.6 mm., antenna 0.55 mm., abdomen 0.85 mm. wide, abdominal seta on dorsum (longer one) 0.069 mm., cornicle 0.26 mm., 0.078 mm. wide at middle, about 0.046 mm. wide at base, hind tibia 0.4 mm., hind tarsus 0.1 mm.

Host—A plant of the Fagaceae (*Lithocarpus* sp. ?), attacking the young leaf.

Siam: Mt. Sutep near Chiengmai; some apterous forms (14. IV. 1940).

This species is characterised by the short and pale cornicles, as well as by the colour of the body. Related to *Paratrichosiphum dubium* van der Goot, but differs in the smaller body with slightly bifid or blunt setae, the shorter distal part of the last antennal segment, and in the shorter cornicles.

Cervaphis cambodiensis n. sp.

(Apterous viviparous female) White, very slightly pale yellowish; antennae, cornicles and legs pale. Body with 20 very long slender dorsal projections in a row along the whole margin, which are pointed apically, with 6—about 10 slender branches; each branch with a stout apical seta, the setae mostly somewhat lanceolate, sometimes very short, narrowed towards the base, rounded at the tip, shorter than the branches; a similar, but shorter, dorsal projection with fewer branches present on the lateral part of each thoracic and the 2nd abdominal segment. Numerous short cylindrical, a little curved, projections densely present over the dorsum, which are widened at the base, each with a very stout seta at the tip, and those on the median area of each segment (including the head) longer, mostly radiate. Head fused with the

prothorax, with a pair of large projections postero-mesad of the antennae, and with some pairs of long stout setae on the front, each of which setae is arising from a short projection, and the longest one is blunt at the tip and much longer than the basal antennal segment. Frontal tubercles very short, but distinct on the mesal side. Antennae short, much longer than the width of head, 4-segmented; the basal 2 segments equal in length, the 3rd segment slightly curved, narrower than the tibiae, imbricated, with 6 prominent setae, which are stout, a little capitate, sometimes somewhat bifid, and 4 of them are longer; each of these setae arising from a distinct tubercle, which is as long as, or longer than, wide, and a little broadened basally; the primary sensorium rather small; the 4th with a short stiff seta on the basal part, which is blunt apically; the relative length of segments about as follows: III-45-50, IV-20+25. Eyes protruding, of 3 facets. Rostrum reaching a little beyond the hind coxae, with the distal segment very long, slender and tapering. Cornicles very long, slender, cylindrical, somewhat curved, a little constricted just below the apical flange, distinctly imbricated, a little striate at the tip, nearly as stout as the hind tibiae, a little longer than the antennae, not reaching the apices of the last long dorsal projections, with a few short setae. Meso- and metanotum and basal abdominal segment distinctly defined. Abdominal dorsum with a large median area defined from the marginal area (such a structure discernible in some specimens of *Cervaphis quercus* TAKAH.);

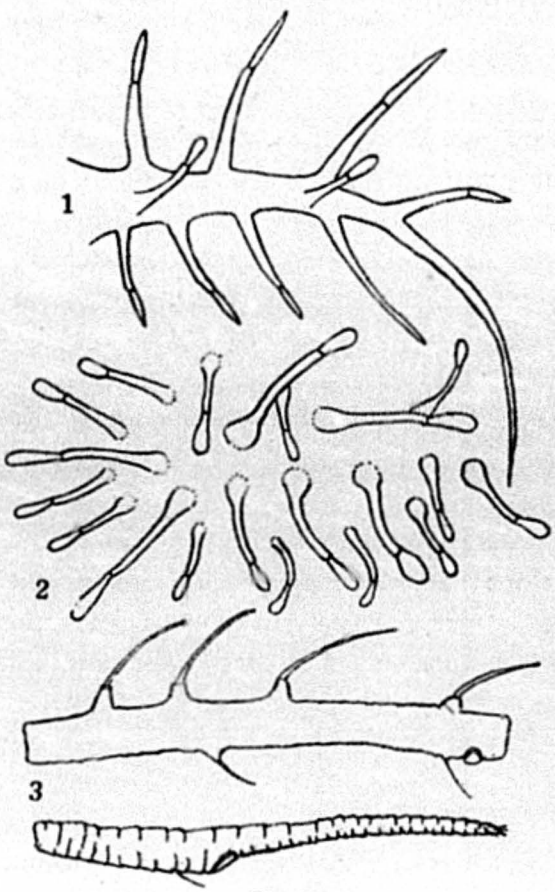


Fig. 5.
Cervaphis camdodiensis n. sp.
(Apterous viviparous female)
1. Projection along body margin.
2. Dorsal projections on median area.
3. Last 2 antennal segments.

the 8th abdominal tergite with many prominent spinules, and a pair of short slender projections on the hind margin, which projections are provided with a shorter stiff apical seta. Caudal segment with a conical apical process, which is distinctly longer than wide. Anal plate short, broadly rounded, with about 10 very long simple bristles. Venter of the abdomen lacking granules, but with many long fine simple setae. Trochanters defined; femora with shallow concaves and some capitate setae, which setae are nearly as long as, or shorter than, the width of femora; tibiae not striate, lacking microtrichiae and apical spurs, with some long simple and slightly capitate setae; tarsi scarcely striate, hind tarsi with a median stiff seta and 2 pairs of much longer simple setae on the basal segment, of which a pair is longer; the distal segment with a pair of very long simple setae at the middle of venter and a pair of very long fine slightly capitate ones at the tip; empodial setae fine, slightly capitate.

Body 1.5 mm., head including eyes 0.35 mm. wide, longest frontal seta excluding basal tubercle 0.074 mm., antenna 0.48 mm., 3rd antennal segment 0.019 mm. wide, longest seta on antenna 0.069 mm., last segment of rostrum 0.185 mm., hind tibia 0.4 mm., longer seta on hind tibia 0.046 mm., hind tarsus 0.092 mm., cornicle 0.58 mm., 0.032 mm. wide at middle, projection on 8th abdominal tergite 0.092 mm., longer projection on median area of dorsum of abdomen including apical seta 0.069 mm.

Host—an undetermined tree, attacking the young leaf.

Indo-China: Anker, Cambodia; many apterous forms in a jungle at the beach of West Bary (24. IV. 1940).

This species is characterised by the presence of distinct basal tubercles of the setae on the antennae, and by the small dorsal projections with a stout seta rounded at the tip.

Cervaphis quercus TAKAHASHI.

Dobutsugaku Zasshi (Zool. Mag. Tokyo), XXX, no. 361, p. 458 (1918); Dept. Agr. Res. Inst. Formosa, Rept. no. 10 (Aphid. Formosa, III), p. 108 (1924).

(Apterous viviparous female) Yellow. Head fused with the prothorax; meso-and metathorax and basal abdominal segment defined, but the 2nd-6th abdominal segments fused together. Antennae slender, imbricated, with a few moderate setae; the relative length of segments about as follows: III-25. IV-7+10. Distal segment of the rostrum very long, slender. Thorax with spinules on the lateral part of venter. The 8th abdominal tergite with trans-

verse rows of spinules and a pair of short finger-like tubercles on the hind margin, which are with a stiff capitate seta at the tip. Caudal segment with a distinct process, which is distinctly longer than wide. Cornicles pale, very long, cylindrical, a little longer than the last submarginal dorsal projections, slightly imbricated, with a few moderate setae, which are slightly capitate or blunt at the tip. Trochanters defined; femora with 1 or 2 shallow indentations on the distal part. Dorsal spines pointed apically. Abdomen with very long fine setae in rows on the venter.

Host—*Quercus* sp., attacking the lower side of leaf.

Siam: Mt. Sutep near Chiengmai; many apterous forms (8. IV. 1940).

Hitherto known from Formosa, Japan and Corea. Differs from *Cervaphis schouteniae* van der Goot in the yellow colour, the 3rd antennal segment being relatively longer, the distal part of the 4th antennal segment distinctly longer than the basal part, the longer cornicles, and in the caudal segment with a process.

Subfamily **APHIDINAE**

Macrosiphaniella sanborni Gillette.

Host—Chrysanthemum sp.

Siam: Chiengmai; a few apterous forms (2. IV. 1940).

The 3rd antennal segment with 11–19 sensoria, and the cauda with about 12 long bristles. Differs from *Macrosiphoniella sanborni* Gillette, var. *taoi* Takah. (Lingnan Sc. Jl., XVI, no. 6, 1937, p. 201) in the 3rd antennal segment not imbricated, the cornicles a little shorter than the cauda, and in the cauda not so stout.

Myzus persicae Sulzer.

Host—Tobacco.

Siam: Chiengmai; many apterous and alate forms (4. IV. 1940).

Abundantly found especially on the isolated host plants, and the apterous forms were pinkish.

Toxoptera aurantii Boyer.

Host—An undetermined tree.

Siam: Mt. Sutep near Chiengmai; a few apterous forms (12. IV. 1940).

The body is very small, measuring about 1.2 mm. in length, with short cornicles, which are somewhat longer than the cauda, but many distinct

transverse striae are present behind the cornicles, and no doubt the specimens are dwarf forms of *Toxoptera aurantii* BOYER appearing in the dry season. Different from *T. djarani* van der GOOT in the dark brown colour of the body.

Rhopalosiphum pseudobrassicae DAVIS.

Host—Cabbage.

Siam: Chiengmai; a few apterous forms (11. IV. 1940).

Aphis odinae van der GOOT.

Contr. Fauna Indes Néerland., I, p. 113 (1917); TAKAHASHI, Dept. Agr. Res. Inst. Formosa, Rept. no. 53 (Aphid. Formosa VI), p. 48 (1931).

Host—Mango.

Siam: Chiengsen; a few apterous forms (19. IV. 1940).

Aphis laburni KALTENBACH.

Host—Bean.

Siam: Chiengmai; some apterous forms (4. IV. 1940). Indo-China: Angkor, Cambodia; many apterous and some alate forms (24. IV. 1940).

Aphis glycines MATSUMURA.

Jl. Coll. Agr. Sapporo, VII, p. 387 (1917); HORI, Hokkiado Agr. Expt. St. Rept. no. 23, p. 107 (1929); TAKAHASHI, Philippine Jl. Sc., LXXII, 4, p. 383 (1940).

Host—Soy bean.

Siam: Chiengmai; some apterous forms (6. IV. 1940).

The body is greenish yellow, and the cauda is pale, long and provided with 4 pairs of setae. Hitherto known from Japan, Formosa and Manchuria.

Aphis gossypii GLOVER.

Hosts—An undetermined tree (Mt. Sutep), *Artemisia* sp. (Chiengsen), *Hibiscus rosa-sinensis* (Chiengmai), cotton (Nakon Paton).

Siam: Mt. Sutep near Chiengmai, some very small apterous forms (14. IV. 1940); Chiensen, some apterous and alate forms (17. IV. 1940); Chiengmai, many apterous and alate forms (7. IV. 1940); Nakon Paton, a few apterous forms (31. III. 1940).

The specimens from Mt. Sutep are very small, with the antennae 5-

segmented, but may be a dwarf form of the species appearing in the dry season.

Aphis sacchari ZEHNTNER.

Host—Sugar cane.

Siam: Chiengmai; a few apterous forms (2. IV. 1940).

Anuraphis helichrysi KALTENBACH.

Host—A plant of the Compositae, attacking the upper side of leaf.

Siam: Mehsai at the northern frontier; some apterous forms (17. IV. 1940).

The infested leaves were rolled with the upper side within. The apterous forms are yellow, with pale cornicles and the 3rd antennal segment a little shorter than the distal part of the 6th, and the cauda is wider than long, with 3 pairs of setae.

Subfamily **CALLIPTERINAE**

Phyllaphis machili TAKAHASHI.

Trans. Nat. Hist. Soc. Formosa, XVIII, p. 146 (1928).

(Apterous viviparous female) Pale green, with wax. The relative length of antennal segments about as follows: I-20, II-25, III-86, IV-50, V-55, VI-55. Rostrum bluntly pointed apically, with the distal sement about 2.2 times as long as wide. Cauda broadly rounded, not constricted at the base.

Host—*Machilus* sp., attacking the lower side of leaf along the ribs.

Siam: Mt. Sutep near Chiengmai; a few apterous forms (5. IV. 1940).

Hitherto recorded from Formosa and Japan.

Chaitophorus himalayaensis DAS.

Mem. Indian Mus, VI, p. 240 (1918).

(Apterous viviparous female) Yellowish green, sometimes yellow, or slightly with dark green dorsal markings. Body oval, with many long stout setae, which are widened and bifid (sometimes trifid) at the tip, each arising from a small tubercle. Head short, broadly rounded on the front, lacking granules, but with indistinct corrugations, and about 12-15 dorsal setae, of which the anterior ones are longer and as long as the basal 2 antennal segments taken together. Front with longer setae, of which a pair is sometimes

especially longer and blunt at the tip. Antennae short, imbricated; the 3rd segment narrower than the tibiae, much shorter than the width of the head, with 4 long curved stout setae, which are blunt apically; the 4th with about 3 similar setae: the 5th and 6th narrowed towards the base; the relative length of segments about as follows: III–32, IV–20, V–18, VI–14+38. Rostrum reaching the hind coxae, the distal segment about twice as long as wide, a little tapering, as long as the penultimate. Prothorax nearly as long as the head. Abdomen with dorsal setae in rows, and a longer seta on the side of each segment. Cornicles normal in shape, reticulate. Cauda distinctly knobbed, somewhat wider than long, with a pair of longer setae. Anal plate slightly or scarcely indented at the hind margin. Trochanters defined; middle and hind femora with 2 curved setae at the apex; hind tibiae lacking sensoria, spinules and apical spurs, but with long fine simple setae and a few fimbriated setae near the base; hind tarsi longer than the 4th antennal segment.

Body 1.4 mm., Head including eyes 0.38 mm. wide, dorsal seta on head 0.06–0.078 mm., antenna 0.65 mm., 3rd antennal segment 0.025 mm. wide, longer seta on antenna 0.042 mm., long lateral seta of abdomen 0.14 mm., cornicle 0.046 mm. in diameter at tip, hind tibia 0.45 mm., longer seta on hind tibia 0.073 mm.

(Alate viviparous female) Head with about 12 dorsal setae which are blunt at the tip; frontal setae fine, simple. The 3rd antennal segment as stout as the tibiae, with 4 circular moderate sensoria in a row on the distal half; the 4th without them; the relative length of segments as follows: III–43, IV–27, V–22, VI–15+45. Wings normal, with many setae on the posterior and apical margins of stigma. Ocelli small.

Antenna 0.83 mm., longer seta on antenna 0.035 mm., seta on front 0.07 mm., hind tibia 0.58 mm., hind tarsus 0.115 mm.

Host—*Salix* sp.

Siam: Chiengmai; many apterous females and an alate form (4–11, IV, 1940).

Very common, occurring in large numbers. Differs from the description by DAS in the dark green dorsal markings less developed and in the bifid or capitate setae on the body. According to the figures by DAS, however, a few of the body setae are capitate or branched at the tip and his description may be not satisfactory; and now I adopt this name tentatively. Previously known only from India. *Chaitophorus hickelianae* MIMEUR from *Populus* in Morocco is apparently an allied species.

Subfamily **THELAXINAE**

Trichoregma salatigensis van der Goot.

Contr. Fauna Indes Néerland., I, 3, p. 219 (1917).

(Apterous vivipa ous female). Dorsum with 2 pairs of dark green markings. Frontal horns pointed. Each thoracic segment with 2 or 3 wax-pores on the side, each abdominal segment with 3–5, usually 4, larger wax-pores on the side. A pair of setae present between the rows of wax-pores on the 8th abdominal tergite. Cornicles on cones, which are with 6 setae.

Body 1.35 mm., head across eyes 0.3 mm. wide, antenna 0.28 mm., frontal horn 0.046 mm., cornicle 0.046 mm. in diameter at tip, hind tibia 0.37 mm.

Host—Bamboo, attacking the lower side of leaf.

Siam: Bangkok; some apterous forms (26. III. 1940).

Differs from the original description in the smaller body, with shorter horns on the front. Probably a dwarf form of the species, which occurs in the dry season.

Trichoregma striata van der Goot.

Contr. Fauna Indes Néerland., I, 3, p. 226 (1917).

(Apterous viviparous female) Entirely dark green, sometimes yellow or greenish yellow, with dark green dorsal markings, slightly with wax on the margin. Head and prothorax with 18 fine dorsal setae. Frontal horns as long as the basal 2 antennal segments taken together, rounded apically, slightly divergent. Antennae 4- or 5-segmented; the relative length of segments as follows: III–25–27, IV–15, V–22. Cornicles large in diameter, on distinct cones, which are with 9, or sometimes 8, long setae. Wax-pores on the body margin well developed, protruding, as in

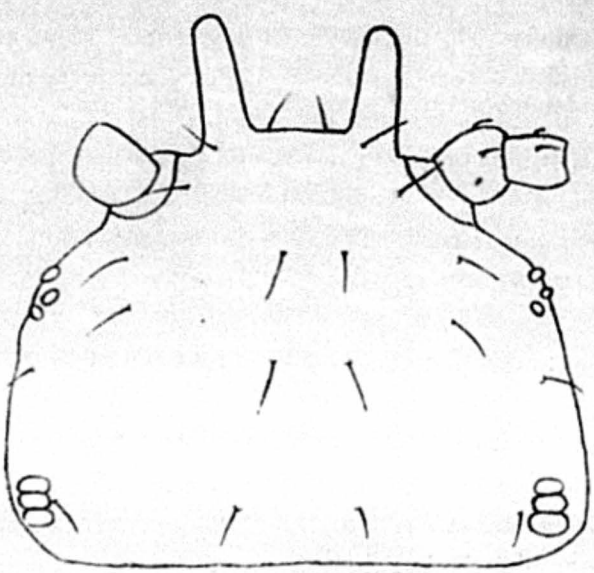


Fig. 6.
Trichoregma striata v. d. G.
(Apterous viviparous female)
Head and pronotum.

Trichoregma insularis van der Goot in distribution, 3 or 4 on the side of each thoracic segment, but mostly 4 or 5 on each abdominal segment; the 8th abdominal segment with 3–6 wax-pores in each row, and 6–8 long setae along the hind margin, of which 2 are median.

Body 1.57 mm., 1.12 mm. wide in specimens mounted in balsam on slide, head 0.35 mm. wide across eyes, head and pronotum together 0.3 mm., antenna 0.39 mm., pronotum 0.4 mm. wide, hind tibia 0.46 mm., cornicle 0.069 mm. in diameter at tip, cauda 0.078 mm. wide, dorsal seta 0.046 mm.

Host—Bamboo, attacking the lower side of leaf.

Siam: Chiengmai and Lampoon; many apterous forms (IV. 1940).

The apterous forms were very common, occurring in large colonies. Different from the original description in the colour and in the abdomen not so narrowed posteriorly, and from *Trichoregma lutescens* van der Goot in the larger cornicles. At Chiengmai some dark green apterous forms of a *Trichoregma* were found also on bamboo, which are about 1 mm. in length and with 6 setae on the cone of each cornicle, and may represent a dwarf form of this species.

Ceratovacuna lanigera Zehntner.

Host—Sugar cane.

Siam: Chiengmai; some apterous forms (4. IV. 1940).

Oregma dendrocalami Takahashi.

Miscell. Zool. Sumatra., XCI, p. 1 (1935).

(Apterous viviparous female) Dark greenish brown. Frontal horns bluntly pointed, as long as, or somewhat shorter than, the basal antennal segment, not curved upwards. In specimens from Chiengmai body with a few small circular wax-pores on the side of abdomen, and sometimes on the side of thorax and on the dorsum of prothorax, which are wanting in specimens from Mehsai. Cornicles indistinctly surrounded with about 4 setae.

Body about 1.8–2.0 mm., cornicle 0.065 mm. in diameter at apex.

Host—Bamboo, attacking the young shoot and stalk.

Siam: Chiengmai, a few apterous forms (4. IV. 1940); Mehsai at the northern frontier, some apterous forms (17. IV. 1940).

Differs from the description of *Oregma bambusae* van der Goot in the smaller body, and in the longer horns on the front.

Previously known from Sumatra.

Cerataphis freycinetiae van der Goot.

Contr. Fauna Indes Néerland., I, 3, p. 166 (1917).

(Apterous viviparous female) Brown, with wax on the margin. Body broadest at the basal part of abdomen, more narrowed anteriorly. Head fused with the prothorax, often distinctly indented at the middle of front, with a median line on the venter, which is not reaching the mouth parts. Frontal horns sharply pointed, conical, distinctly separated, not confluent basally, variable in length, usually short, much shorter than the basal antennal segment, but sometimes longer than it; a pair of fine setae or short spine-like setae present on the front; 2 pairs of similar spine-like setae present behind the frontal pair on the venter, these setae as long as, or shorter than, the frontal horns, each arising from a small tubercle. Antennae shorter than the width of head across the eyes, 5-segmented; the 3rd segment without setae; the 4th about twice as long as wide, a little narrowed towards the base, with 2 setae; the 5th striate, with a seta on the basal part; the relative length of segments about as follows: III-15, IV-12, V-16. Eyes a little protruding, of 3 facets. Rostrum stout, reaching the middle coxae, with a pair of setae at the base of clypeus, the distal segment a little longer than wide, shorter than the penultimate, blunt apically. Meso- and metathorax fused together; basal 7 abdominal segments fused, but with faint indications of segments on the dorsum. Abdomen with about 8 moderate fine dorsal setae in a row on each segment, and more, but shorter, setae in irregular rows on the venter; the 8th tergite rounded on the hind margin, with about 16 marginal pores, a pair of dorsal setae, and 4 pairs of marginal setae. Cornicles normal, closer to the body margin than in *Cerataphis lataniae* Boisd. Cauda much wider than long, constricted basally, somewhat wider than the anal lobes, straight or broadly rounded on the hind margin, with 3 pairs of setae on the hind margin, of which a pair is longer. Anal plate divided, the lobes wider than long, with 7 setae. Trochanters fused with

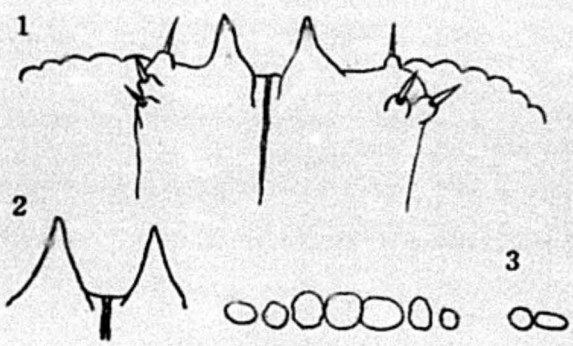


Fig. 7.
Cerataphis freycinetiae v. d. G.
(Apterous viviparous female)
1. Frontal horns and setae (venter).
2. Frontal horns.
3. Marginal wax-pores.

the femora; tibiae somewhat widened on the distal part, lacking microtrichiae, with some fine setae; hind tarsi with a long median seta and 2 much longer lateral setae which are fine and slightly capitate, on the basal segment, a pair of long similar capitate setae present at the apex of the distal segment. Marginal wax-pores circular or oval, not narrowed transversely, small, variable in size, absent on the front and along the cornicles, in most specimens rudimentary and discontinuous, scarce or entirely absent on the metathorax and the basal part of abdomen; 6 or 7 smaller pores occupying a space of 0.092 mm.

Body 1.3 mm., 0.92 mm. wide, head across eyes 0.42 mm. wide, antenna 0.3 mm., 3rd antennal segment 0.03 mm wide, distance between bases of frontal horns 0.019 mm., cornicle 0.051 mm. in diameter at apex including flange, 8th abdominal tergite 0.28 mm. wide, hind tibia 0.3 mm., larger marginal wax-pore 0.03 mm. in diameter

Host—A palm.

Indo-China: Angkor, Cambodia; abundant apterous forms and some nymphs of alate form (24. IV. 1940).

Differs from the original decription in the not well-developed wax-pores on the body margin. They are sometimes variable in size in *Cerataphis lataniae* Boisd., and I take the specimens to be identical with *C. freycinetiae* van der Goot described from Java. *C. lataniae* Boisd. has not been found in Siam and Indo-China.

Thoracaphis formosanus Takahashi.

Trans. Nat. Hist. Soc. Formosa, XVII, p. 383 (1927); XIX, p. 101 (1929); Lingnan Sc. Jl., XIV, p. 140 (1935).

Host—*Machilus* sp., attacking the branch, to which the apterous form is cemented.

Siam: Mt. Sutep near Chiengmai; many apterous forms (5. IV. 1940).

Hitherto known only from Formosa. The apterous form is densely covered with short setae, which are pointed apically, much expanded towards the base, flattened, and intermixed with some long simple bristles.

Thoracaphis machili Takahashi.

Stylops, II, p. 29 (1933); Lingnan Sc. Jl., XIV, p. 140 (1935).

Host—*Machilus* sp., attacking the leaf and young shoot.

Indo-China: Angkor, Cambodia; abundant apterous forms (24. IV. 1940).

Previously known only from Formosa. The apterous form is with mosaic-like markings on the dorsum, many long fine setae along the body margin, and some similar setae in transverse rows on the median area of dorsum. In Formosa this species has been found at Kuraru near Koshun and at Kinyan, Tai ku Prefecture, and seems to be widely distributed.

Thoracaphis siamensis n. sp.

(Apterous viviparous female) Shining purplish brown in life, with no wax, reddish black in dried specimens. Subcircular, flattened on the dorsum, vertical on the pleural part, lacking reticulations, mosaic-like structures and papillae on the dorsum, but with many rather long fine setae and mosaic-like markings on the pleural part. Cephalothorax large, with about 14 very long stout pleural setae in a row along the upper margin, about 10 similar setae in a row along the margin on the dorsum, and 5 pairs of similar setae on the median area of dorsum; many shorter fine setae present on the dorsum especially on the lateral part of the anterior half; meso- and metathorax faintly defined on the median narrow area. Abdomen faintly defined from the thorax, the basal 7 segments fused together, with a pair of long stout setae on the median area near the hine end, and with about 6 dorsal setae in a row along each side, of which the anterior 3 are longer and stouter; a few (3 pairs) fine setae also prssent on the dorsum in front of the cornicles; the 8th abdominal tergite defined, with a median pair of long stout setae and a lateral pair of shorter ones. Antennae slender, short, submarginal, a little shorter than the space between themselves, 3-segmented. Eyes marginal, of 3 facets, a little protruding. Cornicles present near the hind margin of the fused basal part of abdomen. Cauda knobbed. Anal plate bilobed, the lobes wider than long, rounded on the lateral and hind margins, with 6 setae. Legs short, exposed, with claws.

Body 0.72 mm., 0.55 mm. wide, antenna 0.11 mm., cornicle 0.028 mm. in diameter including margin, anal lobe 0.042 mm. wide, 8th abdominal tergite 0.16 mm. wide, hind femur 0.092 mm., marginal long seta 0.069 mm., dorsal longer seta 0.069 mm.

Host—A tree of the Lauraceae, attacking the lower side of leaf along the midrib.

Siam: Mt. Sutep near Chiengmai; many apterous forms (9. IV. 1940).

Related to *Thoracaphis machili* TAKAH., differing, however, in the smaller body lacking dorsal mosaic-like markings and in possessing stouter setae

besides fine ones. Apparently different from *T. hongkongensis* van der GOOT in possessing fine setae on the dorsum, and from *T. arboris* van der GOOT in the distribution of body setae and in other structures.

Thoracaphis crematogastri n. sp.

(Apterous viviparous female) Black, very strongly sclerotised, a little covered with wax; legs black. Body convex dorsally, protruding at the hind end, sometimes asymmetrical and irregular in outline. Cephalothorax very large, on the dorsum densely with mosaic-like structures or shallow papillae, which are not circular or smooth in outline at the base; many long stout setae present on the dorsum and side, of which about 9 are arranged in a row along the base of abdomen. Abdomen much reduced in size, distinctly separated from the thorax; the basal 7 segments fused together, a little longer than the 8th tergite, lacking long setae and papellae, but with a few short setae; the 8th tergite defined, rounded on the free margin. Antennae short, 3-segmented. Eyes marginal, a little protruding, of 3 facets. Distal segment of the rostrum long, tapering. Anal plate bilobed, the lobes much wider than long, broadly rounded on the hind margin. Hind legs not reaching the apex of abdomen; tarsi not segmented, but with claws, which are not discernible in some individuals.

Body about 1.0–1.1 mm., 0.8 mm. wide, antenna 0.083 mm., basal fused part of abdomen 0.185 mm. wide, 8th abdominal tergite 0.15 mm. wide, hind tibia 0.12 mm., hind tarsus 0.032 mm., dorsal bristle 0.092–0.115 mm.

Host—*Quercus* sp., attacking the branch.

Siam: Mt. Sutep near Chiengmai; many apterous forms (12 and 14. IV. 1940).

Attended and usually protected with shelters by the ants of *Crematogaster*. CLOSELY related to *Thoracaphis takahashii* STRAND, which is also associated with *Crematogaster*, but differs as follows: Body more hard, narrower, asymmetrical or irregular in outline, with many dorsal setae. In *T. takahashii* STRAND body subcircular, with fewer setae.

Thoracaphis fici TAKAHASHI, var. **mirabilis** TAKAHASHI.

Philippine Jl. Sc., LXIX, p. 31 (1939).

Host—*Ficus* sp., attacking the lower side of leaf.

Siam: Chiengmai; many apterous forms (3. IV. 1940).

Previously recorded from Formosa

Thoracaphis elongatus n. sp.

(Apterous viviparous female) Black, strongly sclerotised, with many slender projections of wax on the dorsum; legs black. Body elongate, about 1.6 or 1.7 times as long as wide, usually a little narrowed posteriorly, rounded at the front margin, often very slightly constricted shallowly on the abdomen; head, thorax and basal 7 abdominal segments entirely fused together, the 8th abdominal tergite distinctly defined, broadly rounded on the hind margin, protruding. Dorsum corrugated, not distinctly reticulate, but with somewhat mosaic-like markings, and 14 spines in a row along the whole margin, which spines are slender, conical, equal in size, blunt or bluntly pointed apically, and 2 of them are on the middle part of the 8th abdominal tergite; 5 pairs of similar spines present on the median area of dorsum excluding the 8th tergite; each waxy projection arising from the spine; 4 or 5 large more or less defined areas discernible on the median area of dorsum. Antennae not discernible. Eyes marginal, a little protruding. Cornicles absent. Cauda distinctly constricted basally, wider than long, broadly rounded on the hind margin, pale in colour in specimens mounted in balsam. Anal plate deeply divided, the lobes parallel on the mesal sides, almost as long as wide, pale in colour. Genital plate with about 10 tubercles in a row on the hind margin. Legs short, submarginal, a little exposed; tarsi small, not segmented, without claws.

Body 0.48 mm., 0.28 mm. wide, 8th abdominal tergite 0.092 mm. wide, anal plate 0.018 mm., 0.037 mm. wide, body spine 0.032 mm., median pair of dorsal spines about 0.046 mm. apart.

Host—*Quercus* sp. and other trees of the Fagaceae, attacking the lower side of leaf.

Siam: Mt. Sutep near Chiengmi; many apterous forms (IV. and V. 1940).

Very common, occurring in large numbers. Related to *Thoracaphis setigerus* TAKAH. from Formosa and Japan, but differs in the dorsum not distinctly reticulate, the front not indented, and in the dorsel spines conical, fewer along the margin and present on the median area.

Thoracaphs sutepensis n. sp.

(Apterous viviparous female) Black, strongly sclerotised, with much white wax on the median area of dorsum; legs black. Body subcircular, a little longer

than wide, often shallowly indented a little at the front end, bluntly pointed at the hind end, with small irregular indentations on the margin; venter with the marginal area distinctly defined. Head and thorax fused together; cephalothorax large, on the dorsum slightly paler on the median area, lacking setae, with 3 transverse furrows on the median area, and roughly with many irregular shallow furrow-like markings or corrugations except on the median area. Abdomen defined from the thorax, small, protruding; the basal 7 segments fused together, rounded on the side; the 8th tergite very short, nearly triangular, rounded at the hind end, distinctly separated from the basal fused part. Antennae very small, wider than long, rounded at the apex, not segmented, submarginal, almost between the eyes. Eyes submarginal, not protruding, of 3 facets. Cornicles absent. Cauda knobbed. Anal plate distinctly bilobed, usually concealed under the body. Legs short, the anterior 2 pairs concealed under the body, hind legs a little longer, distal halves of hind femora exposed; hind tibiae as long as the coxae and femora taken together, about 4 times as long as wide; hind tarsi very small, as long as wide, rounded apically, not segmented, lacking claws, but with a few small setae.

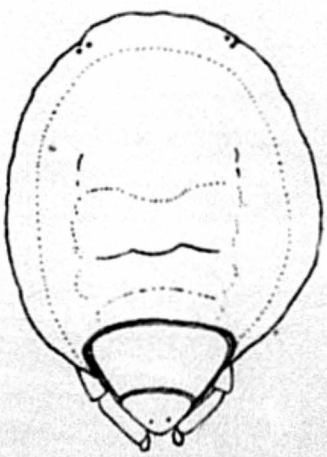


Fig. 8.
Thoracaphis sutepensis n. sp.
(Apterous viviparous female)

Body 0.58 mm., 0.46 mm. wide, abdomen 0.138 mm. wide, hind tibia 0.078 mm., ventral marginal area 0.046 mm. wide.

Host—A tree of the Fagaceae, attacking the lower side of leaf.

Siam: Mt. Sutep near Chiengmai; some apterous forms (12. IV. 1940).

The body is variable in size, the smaller one measuring 0.46 mm. in length. Related to *Thoracaphis tarokoensis* TAKAH., but is differentiated by the smaller body with the dorsum not reticulate. Different from *T. distyliifoliae* TAKAH. in the dorsum without mosaic-like structures.

Astegopteryx spp.

Host—*Styrax* sp.

Siam: Mt. Sutep near Chiengmai; some galls (9. IV. 1940).

Two kinds of old galls were found on the stems and branches, one of which is similar to the gall of *Astegopteryx styracophila* KARSCH in shape,

but the other (Fig. 9) is shorter and much stouter. Some winged forms of an aphid were resting on the lower sides of the leaves of the host trees, which may be the return migrants of an *Astegopteryx* and are briefly described as follows: Head with a pair of small horns on the front, which are triangular, bluntly pointed, nearly as wide as, or much wider than, long, much narrower than the front ocellus and with some minute setae. Antennae 5-segmented, the 3rd segment a little curved, with 37–41 sensoria; the 4th with 14 or 15 sensoria; the 5th with 13 sensoria; the relative length of segments about as follows: III-81, IV-28, V-29; the segments subequal in width. Cornicles on cones, which are provided with about 9 setae. Cauda slightly constricted basally.



Fig. 9. *Astegopteryx* sp. (galls)

The above characters are almost identical with those of *Trichoregma* TAKAHASHI feeding on bamboo, and differ from the alate forms of *Astegopteryx* KARSCH, which appear in the galls on Styrax, in the cornicles located on the hairy cones and in the cauda slightly constricted.

The life history of any species of *Astegopteryx* has not been completely studied, and the secondary host and the return migrant are now unknown, and now it is impossible to decide the winged forms above described to be or not the return migrants of *Astegopteryx*.

泰國及印度支那ニ於ケル農林害蟲ニ就テ (1)

蚜　蟲　類

摘　要

泰國ノ農作物及森林樹木ノ害蟲類ハ、從來 W. R. S. Ladell (1927, 1930, 1933) 及 S. Beller 及 Prasert Bhenchitr (1936) 氏等ニ調査セラレタガ、ソノ知見ハ尙極テ不充分デアツテ、殊ニ小形害蟲ノ研究ハ全ク未開拓デアル。

佛領印度支那ニテハ農作物ノ害蟲ニ關シテハ、既ニ多數ノ報告ガ主ニ Bull. écon. Indochine 誌上ニ公ニサレタガ、ソノ研究ハ未ダ英領馬來ニ遠ク及バズ、殊ニ小形害蟲ノ調査ハ泰國ニ於ケルガ如ク未開拓ノ狀態ニ在ル。

余ハ 1940, 3 月下旬ヨリ約 3 月間泰國ニ滯在シ、又佛領印度支那カンボヂヤ地方ニ旅行スル機會ヲ得タルヲ以テ、此等害蟲類ニ注意ヲ拂ヒ、ソノ材料ヲ集メルニ努メタ。

本報告ハ、ソノ中蚜蟲類ニ就テ記述セルモノデアル。蚜蟲類ハ種類甚多ク、農林植物ノ液ヲ吸收加害スルノミナラズ、ソノ排泄物ニ煤病ガ發生シテ植物上ニ附着加害シ、又多數ノ種類ハ種々ナル作物ノ病害ヲ傳播シ、農林上最重要ナル害蟲ノ 1 群デアル。

泰國ニテハ從來唯 1 種 Aphis gossypii Gloy. ガ報告セラレタルノミデアリ、佛領印度支那ニ於テハ Toxoptera aurantii Boyer, Ceratovacuna lanigera Zehnt., Geoica lucifuga Zehnt. 及 Melaphis chinensis Bell ガ、知ラレタルニ過ギナイ。

余ノ同地方ヲ訪ヘルハ、主ニ乾燥期デアリ、多數ノ草本ノ地上部ハ枯死シ、從テ草本ニ寄生スル種類ハ甚少カツタ。又之等害蟲ノ中ニハ臺灣ト共通ノ種類少カラズ、從テ本島ニ於ケル研究ハ同地方ノ農林上多大ノ參考トナリ得ルコトヲ認メタ。

本報告ニ記入セル種類ハ、次ニ示ス如ク泰國產約 30 種、佛領印度支那產 5 種デアリ、ソノ中 9 種ハ新種ト認メラレ、新ニ學名ヲ附シテ記載シタ。

泰　國　産

(種　　名)	(加害植物)
Aiceona siamensis n. sp.	クス科樹木
Cinara sp.	松
Lachnus sp.	カシ類
Greenidea sutepensis n. sp.	Dipterocarpus?
Greenidea anonae PFRG., var. siamensis n. var.	テンニンカ 1 種
Paratrichosiphum flavum n. sp.	カシ類
Cervaphis quercus TAKAHASHI	カシ類
Macrosiphoniella sanborni GILLETTE	菊
Myzus persicae SULZ.	煙草
Toxoptera aurantii BOYER.	柑橘、茶ソノ他
Rhopalosiphum pseudobrassicae DAVIS.	タマナ
Aphis odinae van der GOOT	マンゴウ
A. laburni KALT.	マメ
A. glycines MATS.	大豆
A. gossypii GLOV.	棉、ブッソウゲ等
A. sacchari ZEHNT.	甘蔗
Anuraphis helichrysi KALT.	菊科雑草
Phyllaphis machili TAKAHASHI	タブノキ類
Chaitophorus himalayaensis DAS.	柳
Trichoregma salatigensis van der GOOT	竹
T. striata van der GOOT	竹
Ceratovacuna lanigera ZEHNT.	甘蔗
Orgma dendrocalami TAKAHASHI	竹
Thoracaphis formosanus TAKAHASHI	タブノキ類
T. siamensis n. sp.	クス科樹木
T. crematogastri n. sp.	カシ類
T. fici TAKAHASHI, var. mirabilis TAKAHASHI	ヨウジュ類
T. elongatus n. sp.	カシ類
T. sutepensis n. sp.	カシ類
Astegopteryx spp.	エゴノキ類

佛領印度支那産

Eulachnus taiwanus TAKAHASHI	松
Cervaphis cambodiensis n. sp.	不明
Ceratophis freycinetiae van der GOOT	椰子
Aphis laburni KALT.	マメ
Thoracaphis machili TAKAHASHI	クス科樹木

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昭和十六年四月七日印刷
昭和十六年四月十日發行

臺灣總督府農業試驗所
（臺北市富田町）

印刷人　須川首
臺北市大正町二丁目三十七番地

印刷所　株式會社 臺灣日日新報社
臺北市榮町四丁目三十二番地