SOME GALLS FROM THE ISLAND OF ENGGANO

by

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The island of Enggano is the most southern of a series of islands situated parallel to the Western coast of Sumatra. In 1936 the island was visited by Dr. W. J. LÜTJEHARMS, who stayed there from the end of May to the beginning of July collecting materials for the Herbaria at Buitenzorg and Leiden. During this excursion he also collected some zoocecidia, which were sent to me for classification by the Director of the Rijksherbarium, Leiden.

The collection consists of 16 galls on various plants; many of them were already known as occurring in other parts of the Malay Archipelago; others are new, these are marked with an asterisk. A collection of 16 galls is actually to small to give insight into the wealth of galls of this tropical island; so far, however, nothing was known about the galls of the island, and since it is unlikely that the place will before long again be examined as to its galls, I deemed it worthwile to describe this small collection.

Most of the galls have been described by Mrs. DOCTERS VAN LEEUWEN and myself in a book on the galls of the Netherlands' Indies (J. DOCTERS VAN LEEUWEN—REIJNVAAN and W. M. DOCTERS VAN LEEUWEN, The Zoocecidia of the Netherlands East Indies, Batavia, 1926). Litterature on the subject can be found in this book. For briefness' sake I only mention the page on which a gall is described in our book, in case it was already known at that time, and the number. The book is referred to as: D. v. L.—R., 1926.

Eleven of the galls are caused by gall-midges, 3 by mites, one by a lepidopteron, and one by a thrips. From this we may conclude that the galls were mainly found in rain-forest or densely wooded or shaded areas, because in dry regions the gallmite-galls play a more prominent part. But it is dangerous to draw conclusions from so small a collection.

Descriptions of the galls.

Ficus Benjamina L.

1. A leaf-gall caused by a gall-midge, D. v. L.—R., 1926, p. 120, no. 211.

The gall is an excrescence on the underside of the leaf-blade; glossy and semi-globular, affixed to the leaf by a broad base and about 5 mm across. On the upperside there is only a flat discoloration, which is very hard. Inside there is a rounded larval chamber surrounded by a hard wall. The galls are mostly situated near the main-nerve and near the base of the leaf-blade. This gall is known as occurring in Java.

Forest near Boea-Boea, 9-VI-1936, LÜTJEHARMS nr. 4456A.

Flacourtia ? Rukam Z. & M.

2. A leaf-gall caused by a gall-midge, D. v. L.—R., 1926, p. 395, no. 1017.

Very flat, discoid galls are strewn over the leaf-blade. They are circular or elongated, 4—5 mm across, and about ½ mm thick. Both on the upperside and on the underside there exists in the centre of this disc a tiny, very short conical pinnacle, often hardly developed. In the materials from Java the upper pinnacle is covered with very short hairlets; these hairs are absent on the galls from the island of Enggano. In the centre is a tiny larval chamber surrounded by hard tissues. This gall is known as occurring in Java.

Malakoni, 21-VI-1936, LÜTJEHARMS nr. 4935A.

Garcinia species.

3*. A leaf-gall caused by a gall-mite.

A peculiar gall, of a kind that I have never met before. The under surface of the leaf is strewn with minute knobs, not $^1/_5$ mm high and broad. They are situated in wavy, double rows as if the animal, the gall-causer, has walked over the leaf, and punctured it at regular distances; the rows run in all directions and often intersect. Where the rows are very close together the galls coalesce and form a very low and flat elevation of the leaf-blade, otherwise the excrescences are apart. Each knob has a tiny opening at its top which gives access to a small hole, the gall-chamber. Though more rarely, the rows of the galls also occur on the upper surface of the leaf.

Meok, Roadside in coconut plantation, 7-VII-1936, LÜTJEHARMS nr. 5433A.

Heritiera littoralis DRYAND.

4. A leaf-gall caused by a gall-midge, D. v. L.—R., 1926, p. 376, no. 958.

The under surface of the leaf is strewn with brown galls, often close together, near and on the mid-rib. They are semi-globular, a little broader than high, 3 to 2 mm, attached to the leaf by a broad base. The surface of the gall is covered with a brown, corky layer which in the mature galls is irregularly broken. The midges leave the gall through a circular opening in the top. At the upperside of the leaf there is only an inconspicuous swelling. Sometimes the gall proper is situated on the upper surface of the leaf. This gall is known as occurring in Java.

Teloek-Kiowa, behind the tidal-forest, 1-VII-1936, LÜTJEHARMS nr. 5206A.

Ilex cymosa BL.

5. A leaf-gall caused by a gall-midge, D. v. L.—R., 1926, p. 327, no. 810.

This gall is almost identical with the one described from Java, Sumatra, and Borneo, it is only a little broader. The galls are situated on the upperside of the leaf-blade, as rounded excrescences, 3 to 5 mm high and 3 to 4 mm across, with a glossy surface. On the underside there exists only a circular depression, 2 mm across and with a yellowish-brown, glossy surface. In the centre of this depression is a tiny, cylindrical excrescence. The wall of the gall-chamber is thick and woody (*Fig. 1*).

Fig. 1. *Ilex cymosa* BL., × 7½.

Teloek-Kiowa, strand-forest, 1-VII-1936, LÜTJEHARMS nr. 5198A.

Mangifera species.

6*. A leaf-gall caused by a gall-midge.

Globular galls affixed to the underside of the leaf-blade. They are 2 mm across and attached to the leaf by a broad base. On the upper surface there exists only a tiny, flat, discoloured swelling. The surface of the gall is covered with straight, brown hairs which give the gall a fluffy aspect. The length of the gall-chamber is twice its width and the globular shape is formed by the outstanding hairs. The wall itself is very thin, surrounding a spacious larval-chamber (*Fig. 2*).

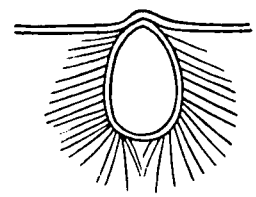

Fig. 2. *Mangifera* species. × 15.

Between these galls there are a great many flat, hairy cushions, about 1 mm across. Inside there is no gall-chamber and the hairs are identical with the hairs attached to the surface of the galls, described

above. These cushions are galls which, by some cause or other, have not developed normally, the inhabitants having died.

Koho Ahepea, alt. 200 m, forest, 12-VI-1936, LÜTJEHARMS nr. 4611A.

7*. A gall on the main-nerve and on the twigs caused by a gall-midge.

On the under-surface of the leaf part of the main-nerve is abruptly swollen into an oval or almost globular gall, 5 to 6 mm long, and 4 to 5 mm broad and high. The surface is covered with a corky layer. Inside there is a rounded larval chamber surrounded by a thick, hard wall. On the upperside of the leaf only a slight longitudinal swelling of the mid-rib is to be seen. The same galls occur also on the young twigs, they are lobsidedly developed swellings, up to 10 mm long and up to 8 mm broad and high.

Koho Ahepea, alt. 200 m, forest, 12-VI-1936, LÜTJEHARMS nr. 4611B.

Melothria ? mucronata (BRIQ.) COGN.

8. A stem-gal caused by a gall-midge, D. v. L.—R., 1926, p. 550, no. 1495.

The gall is the same as the one developed on *Melothria perpusilla* COGN. and caused by *Prolasioptera javanica* KIEFF et D. v. L.—R. Fusiform swellings of the stem, especially at the nodes, and up to 30 mm long and 5 mm across. The surface is covered by a corky layer, and inside there is a juicy parenchym in which elongated larval chambers are enclosed. Sometimes the end of the stem is changed into the gall and the growing-point is involved in the formation of the gall. This gall is also known as occurring in Java.

Meok, forest, 25-V-1936, LÜTJEHARMS nr. 3756A.

Pericampylus glaucus MERR.

9. A leaf-gall caused by a gall-midge, D. v. L.—R., 1926, p. 180, no. 386.

A widely distributed gall on this common plant. On the upper surface of the leaf the gall is semi-globular, contracted at its base and 1 to 3 mm across. The surface is covered with white hairs. On the underside of the leaf there is a conical or more or less globular excrescence, densily covered with white hairs. A spacious, circular opening is found in the underside of the gall when the gall-midge hatches. This gall is collected in Java, Krakatau Island, Sebesi Island, Sumatra, and the Island of Wé.

Meok, border of forest between shrubs, 27-V-1936, LÜTJEHARMS nr. 3838A.

Petunga microcarpa BL.

10. A stem-top-gall caused by a lepidopteron, D. v. L.—R., 1926, p. 532, no. 1434.

The stem-top is changed into a fusiform swelling, about 10 mm long and 8 mm across. Inside there is a spacious chamber tenanted by a caterpillar. The wall of the gall is hard. The gall consists out of many shortened internodes and the leaves on the gall are close together and much smaller than the normal leaves. At the base of the gall they are about 8 mm long and 6 mm broad, getting gradually smaller towards the top. The top leaves are very small, sometimes only the mid-rib is left, and sometimes there are leaves which have the form of small cups. The leaves form a kind of leaf-rozette. This gall is known as occurring in Java and Salajar Island.

Malakoni-Meok, forest, 19-VI-1936, LÜTJEHARMS nr. 4838A.

Pongamia pinnata MERR.

11. A leaf-gall caused by a gall-mite, D. v. L.—R., 1926, p. 248, no. 585.

These galls are only developed on one side of the leaf, mostly on the upperside, on the other side there is only a small opening giving access to the gall-chamber. The galls are horn-like or club-shaped, irregular outgrowths, very variable in form, from 5 to 20 mm long and about 1 mm at the base. The innerside of the gall is covered with hairs; these consist out of a base of 4 flat cells and a long apical cell. A common beach-gall, which is known as occurring in Java, Salajar Island, and Soela Islands.

Poeloe Merbau, beach, 30-VI-1936, LÜTJEHARMS nr. 5163A.

Schefflera species.

12. A leaf-gall caused by a thrips, D. v. L.—R., 1926, p. 431, n. 1135.

This gall is identical with the gall caused by *Gynaikothrips heptapleuri* KARNY on the leaves of *Schefflera elliptica* HARMS. On the upper surface of the leaf are developed cylindrical galls, 15 to 25 mm long and 1½ to 2½ mm across, mostly curved and tapering into a sharp point. The wall is succulent and encloses a long, narrow larval chamber. On the under surface there is only a small, circular opening giving access to the gall-chamber. This gall is common on some species of *Schefflera*, it is known as occurring in Java, Sumatra, Salajar Island, Soemba, and the Philippine Islands.

Boea-Boea, alt. 100 m, forest, 5-VI-1936, LÜTJEHARMS nr. 4251A.

Symplocos odoratissima CHOISY.

13*. A leaf-gall probably caused by a gall-mite.

On the upper surface of the leaf tiny excrescences, $^1/_5$ mm across or less. The excrescences are irregular and look like granular accumulations. The material available was too scanty and the preservation too bad to render a thorough examination possible. Gall-mites were not found, but the gall can hardly be caused by any other gall-causing animal.

Near Boea-Boea, alt. 100 m, forest, 7-VI-1936, LÜTJEHARMS nr. 4355A.

Terminalia Catappa L.

14*. A leaf-gall caused by a gall-midge.

Flat, lenticular swellings developed partly on the upperside, partly on the underside of the leaf. On the upperside there is a low, circular, glossy swelling, about 2 mm across, on the underside the excrescence is also circular and very flat, in the centre is a tuft of short, greyish hairlets. Inside there is a tiny larval chamber. The midges leave the gall through an opening on the underside.

Malakoni-Meok, along the beach, 20-VI-1936, LÜTJEHARMS nr. 4840A.

Xanthophyllum ? affine KORTH.

15. A leaf-gall probably caused by a gall-midge, D. v. L.—R., 1926, p. 273, no. 662.

Bean-like excrescences on the upperside of the leaf, about 5 to 7 mm long, 3 to 5 mm broad, and 4 to 5 mm high. The surface is glossy and in the dried material of a yellowish-brown colour. On the underside there is only a curved, flat depression. Inside there is a longitudinal larval chamber. The gall is known as occurring in Java, but the galls of the island of Enggano are shorter and broader.

Boea-Boea, alt. 100 m, forest, 2-VI-1936, LÜTJEHARMS nr. 4068A.

16*. A leaf-gall caused by a gall-midge.

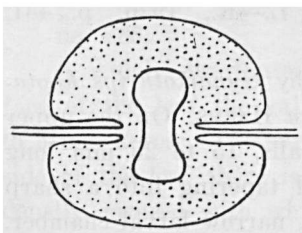

Fig. 3. *Xanthophyllum affine* KORTH., × 7½.

This gall is a flat swelling developed on both sides of the leaf-blade, and almost identical on both sides, about 3 to 4 mm across and 2 to 3 mm high. The gall is affixed to the leaf-blade by a thin, very short central part and on either side of the leaf grown out like a small rivet. Inside there is a small larval chamber extending in both parts of the gall (*Fig. 3*).

Boea-Boea, alt. 100 m, forest, 2-VI-1936, LÜTJEHARMS nr. 4068B.