

Notes on the biology of Indomalayan weevils (*Curculionidae*)*

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HYLOBIINAE

Kobuzo kalshoveni (Mshl.) 1928, the fruit-borer of *Castanea*-species — mainly the edible chestnut *C. argentea* and *C. javanica* — in the mountainous districts of West Java. Originally the species was described as a *Dyscerus*, but MARSHALL referred it to the genus *Kobuzo* in 1936. In the *Catalogus Coleopterorum* it is listed under *Pagiophloeus*.

The borer is found in ripening fruits still on the trees, or newly fallen on the ground. In the latter fruits the prickly husk has already burst open but the nuts still remain enclosed in the cup. A spoilt nut shows a small lesion outwardly on the skin corresponding with a nerve on its inner side, which indicates that the mother beetle for oviposition pierces the husk of young fruits before the tissues

are hardened. Generally only a single larva is found in an infested nut; it lies curved up in its frass scarcely moving when exposed. The nutritious contents are completely consumed and even the fibres supporting the skin are scraped clean. The mature, fat larva is yellowish. The pupa lies embedded in the frass, which turns into a moist mouldy mass. It takes a long time before a young beetle is fully mature and leaves the nut. The freshly emerged beetle shows vivid markings in the shape of patches of brownish and yellowish powder (tomentum) (fig. 1), which very soon wear off.

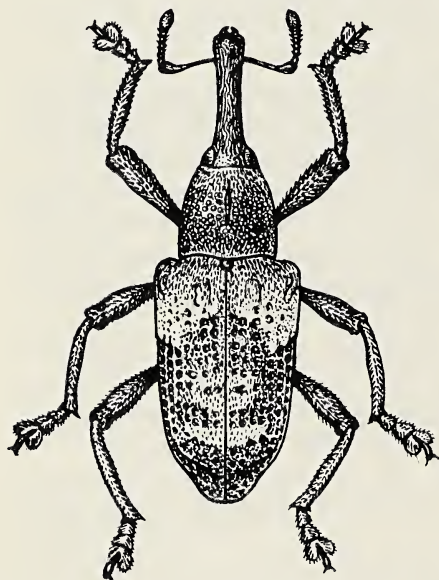


Fig. 1. The castanea fruit-borer of Java, *Kobuzo kalshoveni* (Mshl.) ($\times 4$; drawn by Javanese artist).

Larvae of various sizes have been found in different localities of the Priangan District, West Java, in the months of March to September. Young beetles were present already in June in one case; several beetles emerged from infested fruits kept in the laboratory in the month of August.

The inspection of fair number of fruits, collected by me on Mount Bèsèr near Tjiandjur in September 1920 and at Artjamanik, N.E. of Bandung at 1000 m altitude in June 1927 showed that 15—50% of the seeds of *C. argentea* may be spoilt by the borer, and 8% of *C. javanica*.

It has often been difficult for the forestry personnel of West Java to collect

*) This paper should be considered as a supplement to the contribution on the ecology of Indonesian forest weevils, in the same journal, vol. 16, 1956, p. 77—88.

sufficient sound seeds to stock the nurseries with *C. argentea* which produces a first quality timber. This is not only due to the weevil borer but apparently also to other infestations, probably including one by a microlepidopteron. A further cause of scarcity is the fact that the fruits are much sought by squirrels and monkeys, while their edibility is equally appreciated by the local people. In some cases seeds for the plantations had to be ordered from distant forest plots where the trees gave a better crop of fruits.

K. crassus (Mshl.) is a fruit-borer of *Quercus spicata* in Bengal (BEESON, 1941).

Niphades pardalotes Pasc., a primary borer in the cambial zone of young trees of *Bischofia javanica*, 'gadok' or 'gintungan', fam. Euphorbiaceae.

The larvae are found under patches of withered bark in the basal part of trunks up to some 50 cm. They live in flat rooms excavated in the cambial zone and lined with compressed fibres along the margin. Pupation takes place in typical cradles made of very coarse fibres (fig. 2), sunk some 5 mm deep into the sapwood. These pupal cells resemble those of *Hylobius* c.s. in Europe. The beetles emerge by biting a round hole through the fibres and the bark. The borer causes bad wounds on the stems.

The damage was first observed in a plantation near Leles, Garut, at some 900 m altitude in July 1933. In Banyumas the borer appeared to be known to the forestry personnel as 'olan gintungan'. A four years' old experimental plot of *Bischofia* on the W. slope of Mount Raun in East Java suffered from severe damage apparently inflicted by the same insect in September 1938. The stems were covered with characteristic wounds with some of the empty pupal cradles still left.

The beetle is recognizable by numerous white specks on the elytra. It is well represented in the collections of the Netherlands museums, having been captured in very different localities all over

Java, particularly in the forest-covered mountains, as also in Borneo and Sumatra.

In India *Niphades alni* is recorded as a borer of *Alnus* (BEESON, 1941).

Aclees birmanus F. has been found boring the wood of *Ficus elastica* trees which had been fatally damaged by the longicorn *Batocera rubus* L., in plantations for rubber production in early times in Java (DAMMERMAN, 1913). The borer has also been observed in *Artocarpus integrifolia*.

The beetle measures 12—15 mm. Fresh specimens have the sides of the prothorax and part of the elytra covered with a white dust (tomentum) (see the coloured plate published by DAMMERMAN).

In India *Ficus religiosa* is recorded as a host of the secondary borer (BEESON, 1941).

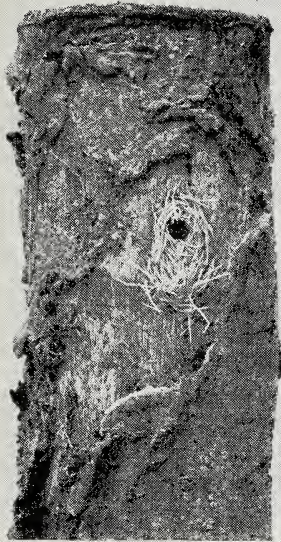


Fig. 2. Wound caused by larva of *Niphades* on stem of *Bischofia*; dead bark removed to expose the pupal cell which has a hole made by the emerging beetle (nat. size).

A. cribratus Gyll, 17—21 mm, is of common occurrence in the Javanese mountains. In India it has caused considerable damage to figs (*Ficus carica*) (l.c.).

CLEONINAE

Xanthochelus faunus Oliv. This is a rather conspicuous weevil, covered with orange-yellowish pubescence, of very general occurrence in the teak area of Central Java. It has been found resting on the foliage of various plants of the undergrowth of the forests in the period from November till June, the greatest number in the month of January in the middle of the rainy season. Several beetles have been collected from a large shrub, 'sambung gantung' (*Blumea balsamifera*, fam. Compositae) (leg. Fr. VERBEEK), which is very probably the main host plant.

In India the larvae of *X. blumeae* feed on the roots of *Blumea wightiana* (BEESON, 1941).

GYMNETRINAE

Alcidodes nudiusculus Haaf. In Januari 1943 — during the Japanese occupation of Java — a consignment of seeds of the getah pertjah tree, *Palaquium gutta*, was received from Malaya at Tjipetir Estate near Tjibadak, West Java, where it proved to be heavily infested by a weevil (leg. Fr. VERBEEK). The contents of part of the seeds had been wholly destroyed by the larvae. Immediate measures were taken to disinfect the material and to prevent a spread of the insect to the *Palaquium* plantations of the estate. So it appears unlikely that the weevil has had the opportunity to establish itself in Java.

Specimens of the weevil from my collection submitted to Dr. E. HAAF of the G. Frey Museum in August 1963 were identified by this specialist as *Alcidodes nudiusculus*, described from Malaya in 1962, the host plant still being unknown at that time.

BARIDINAE

Centrinus comparabilis Faust 1896. During the first year of the Japanese occupation of Java (1942), when home-grown tubiferous crops gained in importance as substitutes for rice for the indigenous population as well as the western residents, my attention was called to a kind of insect damage to *Colocasia esculenta* not known before. This crop, called 'tales' in West Java, is of less significance here than the 'taro' in East Indonesia. Still, plots of some size are rather frequent on the terraces on the lower parts of the mountain slopes in West Java. The tubers are of a solid texture, rich in starch, and, when cut in thin slices and baked, are far more tasty and nutritious than cassava.

The injury consisted of grooves gnawed all over the bulb (fig. 3), just deep enough to lodge the weevil larva which caused them. In the lower, oldest parts of the bulbs the tunnels were deepest, in the upper, more recently formed parts they ran nearer the surface and, in part, just beneath the outer membranaceous tissue.

From a small quantity of infested material, collected at Tjiawi, South of Bogor, two beetles were bred which were identified by Sir Guy MARSHALL.

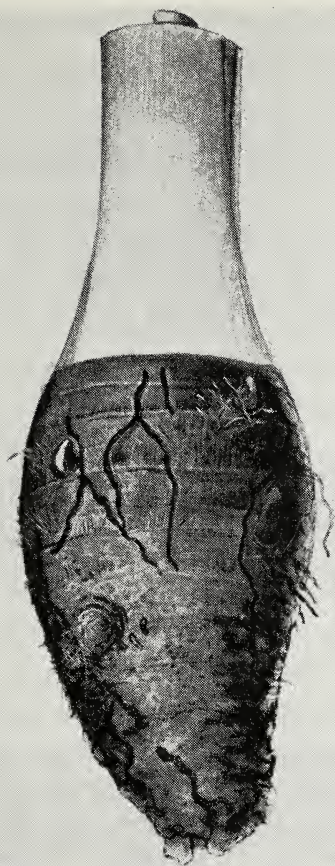


Fig. 3. Tuber of *Colocasia* grooved by galleries of *Centrinus comparabilis* Faust ($\times \frac{1}{2}$; photograph of coloured plate made by an Indonesian artist at Bogor, 1942).

puncture the still folded tops of the plants, the core of which is bored by the larvae. Several beetles may visit the same top, which is severely damaged. When disturbed the weevils jump into the air, but they can also sham death; they have been observed to visit the flowers of other plants, like *Eupatorium pallescens*, fam. Compositae. In Central Java the species has been observed to be active in the months of November till March, in the rainy season.

In India *M. stylicornis* lives in the succulent buds of *Costus speciosus* 'producing a more or less liquid mess'. (BEESON, 1941).

The black beetle was already present in the collections at Bogor, as it had been frequently found on the foliage of young trees and shrubs in the forest plantations on the mountains Gedé and Salak near Bogor. Besides, the beetle appeared to frequent flower heads of some common plants like 'kirinyu' (*Eupatorium pallescens*, fam. Compositae) and 'kipare' (*Glochidion* sp., fam. Euphorbiaceae). Mating couples had been observed in the same places. In Bogor a beetle was collected from the flower of a *Citrus* tree (April 1940, leg. AWIBOWO).

In West Java the species occurs on the hills up to at least 1400 m. Almost certainly the weevil will have other host-plants the subterranean parts of which are attacked by the larvae.

CEUTORRHYNCHINAE

Mecysmoderes stigma F. appears to be associated with *Costus speciosus*, a common Zingiberaceous plant in the forests of Java, including the artificial teak woods. The small beetle

References

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