



Some informations on the ecology of Philippine Aleocharinae (Coleoptera Staphylinidae)

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Summary

Some ecological data are given on recently described Philippine Aleocharinae (Coleoptera Staphylinidae) as well as regarding the environment where these rove beetles live.

Keywords : Coleoptera, Staphylinidae, Aleocharinae, Ecology, Mindanao, Philippines.

Résumé

Quelques données écologiques concernant des Aleocharinae (Coleoptera Staphylinidae) récemment décrits des Philippines sont fournies ainsi que sur le milieu naturel où vivent ces staphylins.

Since 1990, while undertaking field ethnological research, the author has been able to collect plants and animals, under study at present, on Mount Tasaday (Fig. 1, photo 1) and its surroundings, on the island of Mindanao, in the Philippine archipelago. In 1998, PACE published an article on the Aleocharinae that the author collected, between October and November 1993, on Mount Tasaday. General physical and biological outlines regarding the environment where these rove beetles have been observed are given here after.

Mount Tasaday ($124^{\circ}32'52''$ E - $6^{\circ}18'10''$ N; summit : 1340 m; Lake Sebu Municipality, South Cotabato Province) stands in the Tasaday Manobo Forest Reserve (Photos 3-4) created by Presidential Proclamation n° 995 in 1972 : a land of 19,247 ha still largely covered with montane primary forest, where the Dipterocarpaceae dominates the other families of trees; the rest of the natural environment is made of secondary forests, fields of crops (mainly rice and corn) and secondary vegetation. In the Philippines, few Dipterocarpaceae forests remain : around the first quarter of the 19th century, the dipterocarp forests comprised some 75% of the virgin forests of the

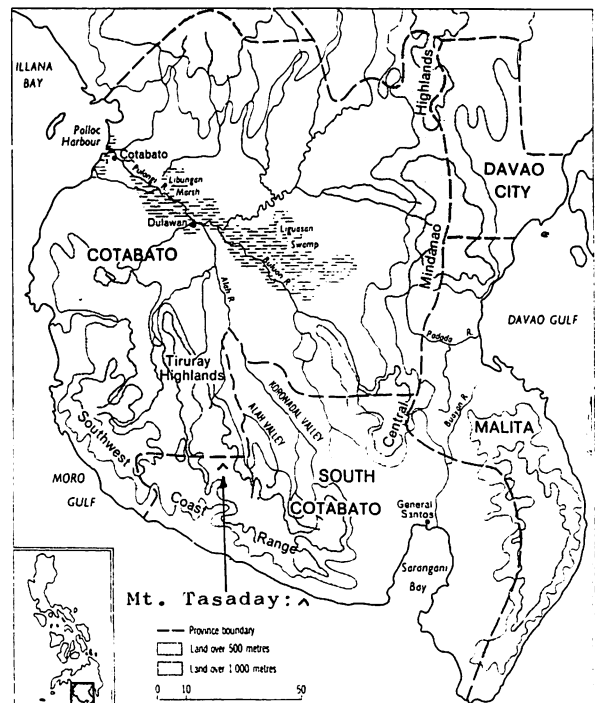


Fig. 1. Southwestern Mindanao Region (c : MC COY A.W. & DE JESUS Ed.C., 1982).

Philippines (or about 7,700,000 ha) (DICKERSON, 1928). Owing to several factors (expansion of



Photo 1. Partial view of Mount Tasaday (Western side), center of the Tasaday Manobo Forest Reserve where the Diptero carpaceae dominates.



Photo 2. Partial view of Lake Sebu, on the island of Mindanao. In the background, the forest-covered mountains of the Cotabato Cordillera where stands the Tasaday Manobo Forest Reserve.



Photos 3-4. Closing the horizon, the forest-covered Eastern border of the Tasaday Manobo Forest Reserve.

agriculture, shifting cultivation, industrial logging, etc.)

Philippine forest cover dropped from 70% to 50% between 1900 and 1950. After 1950, deforestation continued and the total forest cover (that includes degraded and highly degraded forest lands) would be, at the present, under 25% of land area; nowadays, the primary dipterocarp forests cover only a few 800,000 ha or 0,026% of the total land area of this archipelago (BELCHER & GENNINO, 1993; KUMMER, 1992).

This part of Southern Mindanao (South Cotabato Province) is classified among the regions without very pronounced seasonal characteristics in terms of rainfall or temperature (WERNSTEDT & SPENCER, 1967); however, the drier months are February and March (GUTTERIDGE, 1994). Some measures of the temperature were taken on the site where the rove beetles were collected (alt. 1,015 m), using an electronic device, in May 1993 : the average can be summarized as follow : 19-20° C at 5.30 AM; 25-26° C at noon; 24° C at 6.30 PM (sunset); 23.9° C at 8.45 PM.; during the nights of the drier months, the temperature

must go far below 20° C, specially around 4 AM. The annual average rainfall ranges from 2,000 to 2,500 mm.

Regarding the geology, the Reserve stands on Maitum limestone for its Western part, and on undifferentiated volcanic rocks for its Eastern part (LOUIS BERGER INTERNATIONAL, 1993); however, all the rocky outcroppings and rockshelters seen by the author in the Reserve are of sandstone. In order to collect some data on the pedology of Mount Tasaday and its immediate vicinity, a hole of 170 cm depth/63 cm large, dug in the forest ground (declivity of the slope : 28°) by a Tasaday man in order to collect the tuber of wild yam (*Dioscorea* sp.), was observed. One can divide the soil into three layers : just under a very thin litter (few mm) stands a first horizon, 5 cm thick, very dark brown, sandy-textured and composed of decaying leaves, fruits, flowers, etc., rich in microarthropods and rootlets. A second layer follows : 15 cm thick, dark brown, sandy-textured (more pronounced than in the first horizon) and relatively movable, mainly crossed by radicels and roots; it seems quite obvious that the dark shade of this layer comes

from infiltrations of the uppermost layer. A third layer : 150 cm (but that must be much deeper), oak-colored, sandy-textured, whose density increases with depth; only big roots and tubercles occur in this layer. These observations fit quite well with the description of Mt. Tasaday soil reported by YEN & GUTIERREZ (1976 : 97); however, these authors give a depth of 10 to 20 cm and 10 cm for the first and the second layers respectively. The samples of examined soils can be classified amongst the semi-fine limons. No measure of the acidity of soils has been made in the Reserve; however, measures taken in the soil of fields (described as " well structured clay loams with inherent high fertility ") of Ned, a locality situated just at the Western border of the Reserve, showed a pH 5.5 (GUTTERIDGE, 1994).

Hydrography : the clear and cold waters of many brooks cross the Reserve, but no big river occurs, the two major streams are the Lawà River (a tributary of the Alah River that flows into the Pulangi R. that ends in Cotabato City) and the Kloung River (flowing to the southward up to the town of Kloung, facing the Celebes Sea).

Flat land is very scarce and most of the topography is made of terrains of slope of 18-30% and 30-50% (LOUIS BERGER INTERNATIONAL, 1993). The altitude of the Reserve varies from 600 to 1,600 m, but the average of many areas is situated between 1,000 and 1,100 m.

Originally, the Tasaday Manobo Forest Reserve was created, in the 1970s, in order to protect the ancestral land of a band of hunter-gatherers and cave-dwellers : the Tasaday. At the present time, several thousands Tboli and Cotabato Manobo, two other tribal peoples, live in and on the border of the Reserve, supporting themselves mainly through slashing cultivation : an agricultural technique that tends to reduce more and more the cover of the remaining primary forest.

The botanical diversity of Mount Tasaday is indirectly known through the ethnobotanical study conducted by YEN & GUTIERREZ (1976), who described the forest as divided into three storeys : the first, and the highest, where can be found species of *Shorea*, *Vatica*, *Lithocarpus*. Below this dominant canopy, a second storey, prominently occupied by *Dillenia*, *Lithocarpus*, *Palaquium* and *Goniothalamus*. A third layer composed of small trees, palms, tree ferns : *Anglaia*, *Clethra*, *Aralia*, *Glochidion*, *Ficus*, *Areca*, *Pinnanga*, *Cyathea*, *Pandanus*. Amongst the clim-

bers : *Dinochloa*, *Calamus*, *Daemonorops*, *Freycinetia*, *Dioscorea*. Regarding the fauna, aside from the species collected or observed by the author, no study has ever been conducted in the Reserve and the material already identified is obviously interesting, as one could expect from well preserved tropical forests; since this is not the place to give a faunistical check-list of the Reserve, let us just mention its most striking Vertebrate inhabitants such as the Philippine tarsier (*Tarsius syrichta* (L.) 1758), the Philippine flying lemur (*Cynocephalus volans* (L.), 1758), the very endangered Philippine monkey-eating eagle (*Pithecophaga jefferyi* OGLVIE-GRANT, 1896) or the megapode (*Megapodius freycinet pusillus* TWEEDDALE, 1877), all of them endemic to the Philippine archipelago (CORBET & HILL, 1992; DUPONT, 1971).

The staphylinids studied by PACE (*loc. cit.*) included several new species for Science, new species for the Philippines as well as new localities for that country : Leucocraspedini : *Leucocraspedum minor* CAMERON, 1941; Homalotini : *Coenonica angusticollis* CAMERON, 1920 , *Coenonica philippina* BERNHAUER, 1916, *Coenonica dentifera* PACE, 1998, *Stenomastax variventris* (KRAATZ, 1859), *Stenomastax cribrum* (FAUVEL, 1878); Aleocharini : *Pseudoplandria igorotorum* PACE, 1990, *Pseudoplandria drugmandi* PACE, 1998, *Aleochara (Xenochara) philippinorum* PACE, 1993, *Rencoma philippina* PACE, 1998.

These Aleocharinae were captured on Mount Tasaday in a place at an altitude of 1,015 m, in a garden surrounded by crops (mainly corn, cassava, sweet potato) and secondary vegetation, but



Photo 5. Fruits of *Artocarpus heterophyllus*. Between the two fruits (upper part) one can observe two black rotten fleshy spikes, where rove beetles can be observed in great number.

close (ca. 100 m away) to the border of the primary forest (which still largely covers that mountain; only in a few little spots were made clearings by the natives for cultivation, the most deteriorated [from clearings] part being at the southern foot of the mountain and its surroundings). All these micro-staphylinids were caught, during day time, on the rotten fleshy spikes (7 cm long/2 cm large) of *Artocarpus heterophyllus* (Moraceae) (Photo 5), where they were gathered by hundreds on and in the flowers. It was also observed that rotten fruits of that tree or even just decaying peelings left on the ground attracted a lot of staphylinids, mainly Aleocharinae.

To close this brief note, one has to rectify a misinterpretation : PACE (*op. cit.*) reported that the above mentioned rove beetles were captured in Lake Sebu, on Mount Tasaday. The name of Lake Sebu well appears on the label of the specimens, but it does not refer to the locality where the specimens were captured but only refers to the closest (to Mount Tasaday) and the sole toponyme that can be found on existing maps. Indeed, Lake Sebu (Photo 2) (124°42' E - 6°13' N, alt. : 700 m; see LAYS, 2000, for more data on this lake) spreads its 354 ha some 20 km away East of Mount Tasaday. Undoubtedly, Lake Sebu, while surrounded only with secondary vegetation and crops fields, is also interesting as far as staphylinids are concerned since several thousands of specimens of rove beetles have been recently collected; a material that waits to be studied.

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