PALM COMMUNITIES AS A KEY TO FOREST TYPES AND SOILS ON ULTRAMAFIC ROCKS IN SOUTHERN NEW-CALEDONIA

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The rain forest on ultramafic slopes in the Southern Massif of New Caledonia develops under various soil conditions : eroded peridotites, ferralitic ferritic colluvia and hypermagnesic soil derived from serpentinites.
These soils types frequently occur as a mosaic in the rain forest and some distinctive structural and floristic characters of the forest are associated with each one.
Palms are abundant in the understorey of the forest and are very good indicators of these variations. There is one species typically associated with one type of soil and the structure of the whole palm community (up to 6 species and 3500 plants per ha) gives information about the ecology of the forest, including degree of disturbance.
Within primary rain forests, we can recognize three main palm communities types.

On ferralitic ferritic colluvia, *Cyphokentia macrostachya* Brong. is dominant, with secondly *Basselinia pancheri* (Brong. & Gris) Vieill. and *Brongniartikentia vaginata* (Brong.) Becc.

On eroded peridotites, *Campecarpus fulcitus* (Brong.) Wendl. ex Becc. grows in large number together with *Actinokentia divaricata* (Brong. & Gris) Dammer.
Campecarpus is well adapted to this rocky environnement, developing long stilt roots between the huge blocks of peridotite. *Actinokentia* is relativly heliophilous and profits by the clearer canopy of these forests.

On serpentinite, the palm community is dominated by *Burretiokentia sp nov.*, which is restricted to soils rich in magnesium, and *Chambeyronia macrocarpa* (Brong.) Vieill. ex Becc.
Within secondary forest types, either mixed or monodominant, the same pattern of palm community is observed, with *Basselinia pancheri*, *Actinokentia divaricata* and/or *Brongniartikentia vaginata.*