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## A Note on Spines in the Oil Palm

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Tomlinson (1962) has recently described the types of spines found in palms, which has prompted closer observations on the oil palm. Although the oil palm is not regarded as a spiny palm in the same way as, say, *Aiphanes* or some scandent palms, it does possess three quite distinct types of spines, described below and illustrated by Figure 27.

### Inflorescence spines

The tips of the branches of the female inflorescences are prolonged into spines, which persist in the fruit bunch. The growth of the fruit bunch causes the spines to separate and produce an effective armour. The inflorescence axis itself does not have a terminal spine, but is blunt-ended.

### Fiber spines

As stated by Tomlinson, many cocoid palms, including *Elaeis*, have petioles armed with marginal teeth formed from the base of the fibers of the leaf sheath. In *Elaeis*, these are fairly regular, Fig. 27D, and their origin is interesting. The leaf sheath encloses two sets of fibers (with a more poorly developed third set, of no consequence here) each set comprising parallel strands of fibers, with the strands in the separate sets running roughly at right angles. When the softer tissues rot away, it is seen that the adaxial fiber layer is attached a short distance away from the abaxial. The bases of the abaxial fibers form the

spines which are comparatively blunt-ended. No spines are formed at the adaxial fiber insertions. The point at which the fibers break off from the spines is well-demarcated (Fig. 27D) so that the spines are nearly all of the same length. The regular spacing of the fibers also ensures that the spines are uniformly distributed along the length of the 'petiole.'

These fiber spines occur along the basal part of the leaf up to about a fifth of the length of the leaf, and terminate at the level at which the leaflets occur.

### Midrib spines

The lowermost leaflets on the oil palm leaf are poorly developed, although they still have the large basal swellings similar to those of the fully developed leaflets and from which arise the leaflet midribs. The 'lamina' of the lowermost leaflets frequently becomes broken away leaving a spine some 2 cm. long which was originally the leaflet midrib.

As the leaflets of the oil palm are arranged irregularly along the rachis in groups of one to five or more, and not all in the same plane, these spines appear (unlike the "fiber" spines) most irregular.

There is little doubt that these three types of spines in the oil palm form a very efficient means of protecting both the apex and the fruit bunches from predators. In West Africa, the original

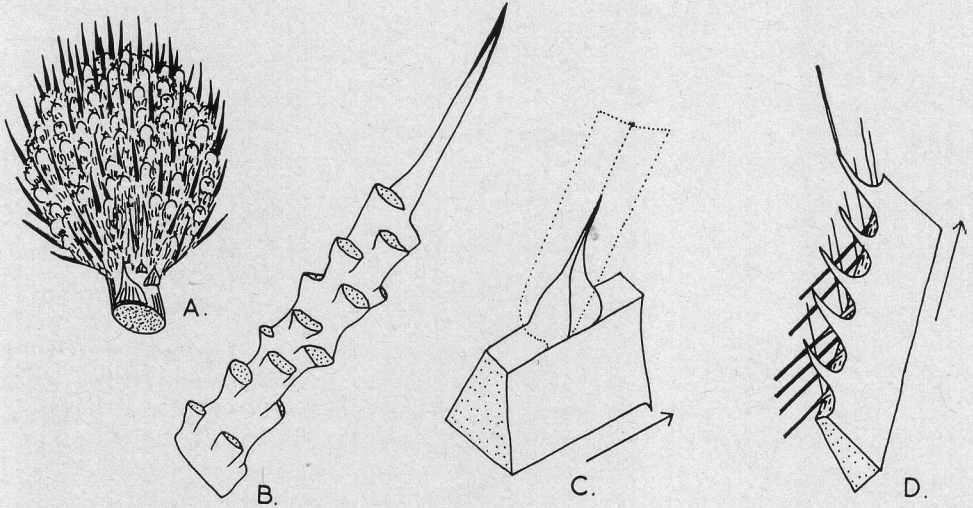


Fig. 27. Spines in the oil palm. Diagrams of A, fruit bunch with spiny branch tips; B, single branch of inflorescence with fruit removed; C, midrib spine, leaflet shown by dotted outline; D, fiber spines viewed from abaxial side. The arrows in C and D points to the leaf tip.

home of the oil palm, the only large animal which successfully attacks the plant is the elephant, as described, for example, by Onyioha (1962) for an estate in Eastern Nigeria. The crowns of young palms are trampled to expose the cabbage which is then eaten. Small rodents, squirrels and monkeys are not deterred by the spines from eating the fruit, and aid in disseminating the seeds. The spines on the basal parts of the petioles are put to other defensive uses; in Onitsha Province it is frequently observed that the mud walls surrounding the family compound in rural areas are topped with two to three foot lengths of petiole laid across at right angles to the length of the wall to deter unwanted human intruders who might climb into the compound.

Tomlinson (personal communication) wonders why the young oil palms are not more efficiently protected, as these are attacked and killed by rodents, particularly the quaintly named "cutting-grass" *Thryonomys swinderianus* and the giant rat *Cricetomys gambianus*.

Monkeys are also known to damage palms planted in the field; they systematically uproot plants row by row. When establishing a plantation it is standard practice to fence in the nursery area to exclude rodents, and on planting out into the field to enclose each palm with a wire-netting 'collar.'

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## MALAYAN ORNAMENTAL PALMS

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If a nurseryman in Malaya were asked to name the ornamental palms of Malayan origin he would shake his head in confusion. The reason is that palms are generally bulky for small Malayan gardens, or so untidy as to provide