PASTURES UNDER COCONUTS

THE INCIDENCE OF WEEDS

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"A WEED of grasslands is any plant that is in itself injurious or useless or any plant of inferior food value that may have habits of growth that tend to exclude those plants that would otherwise provide more forage."

The significance of weeds in agriculture does not need emphasis. Since maximum yield is the key to reduced cost, the role played by weeds in preventing efficient production is becoming increasingly significant.

This weed menace is not limited to arable farming but is quite as serious in the growth and maintenance of pastures, and if Animal Husbandry is to play its proper part in the national economy, pastures will have to be improved on an island-wide basis, not merely on one or two favoured properties.

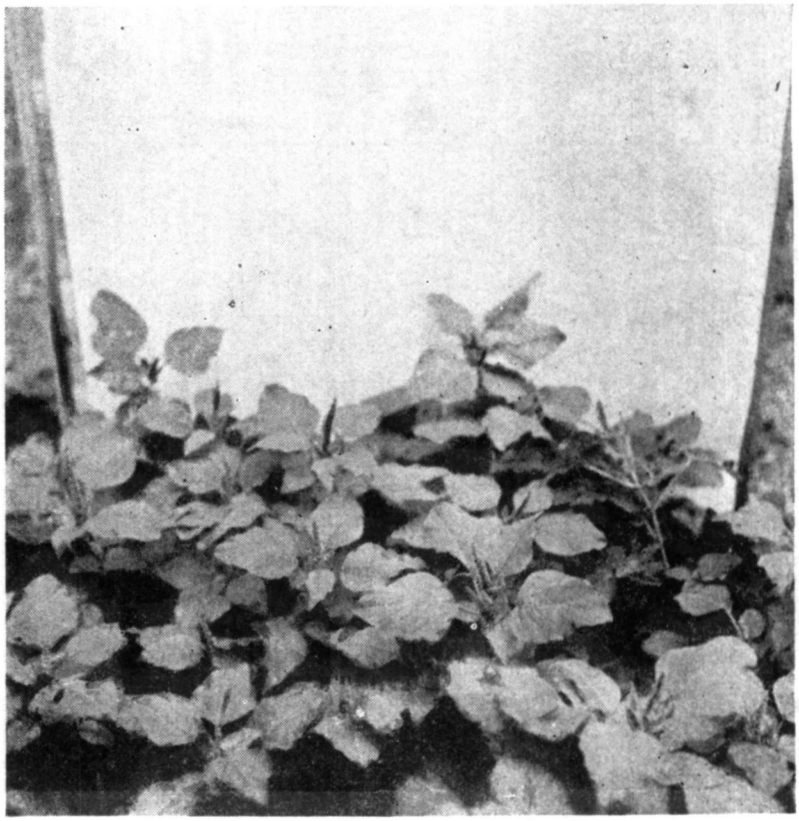

Fig. 1.

AN OBNOXIOUS WEED.

Amaranthus viridis. **A plant which robs the pasture grass of nitrogen.**

The damage caused by weeds results from competition with the pasture grasses and legumes for the four vital plant needs, *i.e.*, air, light, water and plant nutrients. Broadly speaking, if one of these factors is seriously deficient, the other three do not function properly. Some of the more persistent weeds need twice as much water as does grass, but the most significant factor is the competition for light. This is especially true in the case of weeds having large surface areas and a dense creeping habit like *Mikania scandens*

or very dense growth, like *Hiptis*. The former not only hinders the growth activities of the grasses and legumes due to shading, but at the same time it is a heavy competitor for water and nutrients. Another weed very common in pasture under coconuts, is *Amaranthus viridis* (S—Kura thampala) which need large amounts of nitrogen, and so robs the grass of this nutrient. Another adverse factor is that weeds act as host to a number of agricultural pests and fungi. Although no evidence of it has yet been observed at Bandirippuwa, pests like the "Paddy Bug," *Leptocorisa variconis* use weeds as host plants to complete their life cycle and tide over the off-season. And lastly the incidence of heavy weed infestation, especially of troublesome weeds like the sensitive plant *Mimosa pudica* and *Sida acuta* (S—Gas babila), send up cultivation costs and make the maintenance of pastures almost prohibitive. This is most evident where pastures under coconuts have been heavily over-grazed.

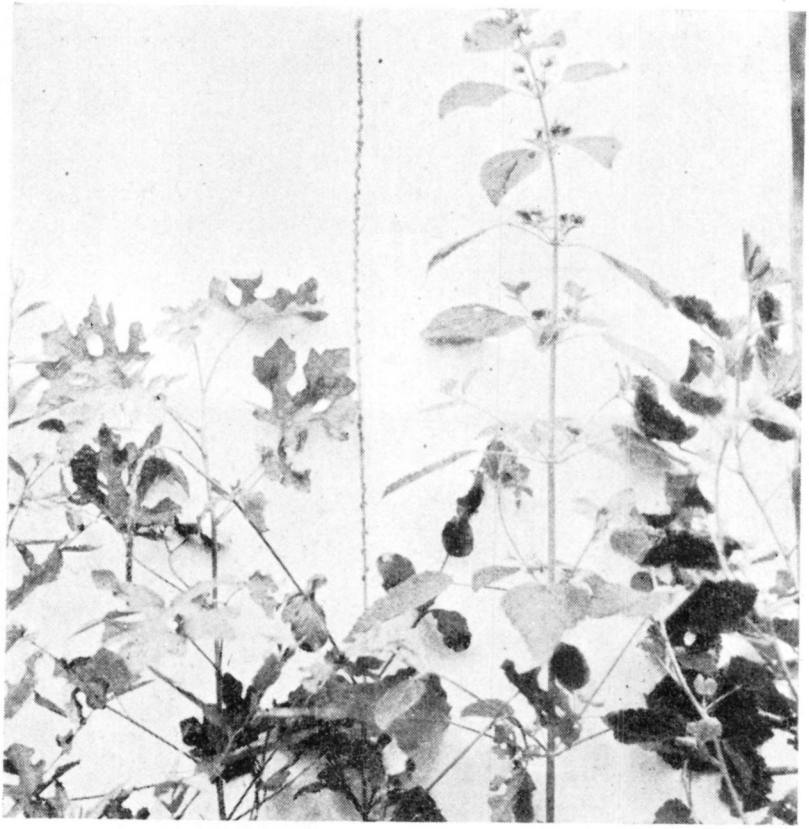

Fig. 2.

OBNOXIOUS WEEDS.

From left to right :

1. *Sida acuta* (S) **Gas babila.**
2. *Hybiscus vitifolius* (S) **Apala.**
3. *Achyanthes aspera.*
4. *Hyptis Suaveolens.*
5. *Sida cardifolia* (S) **Wal babila.**

Nevertheless not all plants other than grasses and legumes found in pastures are objectionable. For example, the following herbs :—*Ipomea cymosa* (S—Madu) *Asystacia gangetica* (S—Puruk) and *Comalina bengalensis* (S—Diyameneri) are palatable and readily eaten by cattle, and some are richer in minerals than most grasses, especially so *Ipomea cymosa* and *Asystacia gangetica*, which provide sufficient mineral ingredients for the health of the cattle. But the mineral content of most of the tolerable weeds will depend to a large extent on the composition of the soil. Just as the deterioration of pastures is due to the increase of useless and injurious plants, so any cultivation practice adopted to decrease the amount of weeds automatically improves the pastures by making more plant food available ; in other words, good environment and a better management

technique, which encourage the growth of grasses and legumes, will also decrease the incidence of weeds.

Very close and heavy grazing is one of the major causes of weed infestation and this has been noticeably evident at Bandirippuwa. In the grazing trials, weeds such as *Sida acuta*, *Mimosa pudica*, *Vernonia javanica*, and *Hydiotis auricularia*, have made rapid growth in those plots that have been subjected to severe and intensive grazing, whereas in the plots where the grazing is not so severe there is a significant and marked absence of these weeds. The denser and the thicker the pasture, the less chance there is for weeds to establish themselves. With heavy grazing and trampling bare patches develop and these are invaded by weeds before the grass has a chance of recovery.

A point to bear in mind is that when grasses, foreign to a locality, are introduced, it must be done in easy stages. A case in point is *Milenis minutifolia* (Molasses Grass), a large area of which was planted at Bandirippuwa. It did very well at first, but after two cuttings and one grazing, it died back completely, thus affording an opportunity for weeds to manifest themselves. It would have been better to have first established a small trial plot under field conditions and studied its performance.

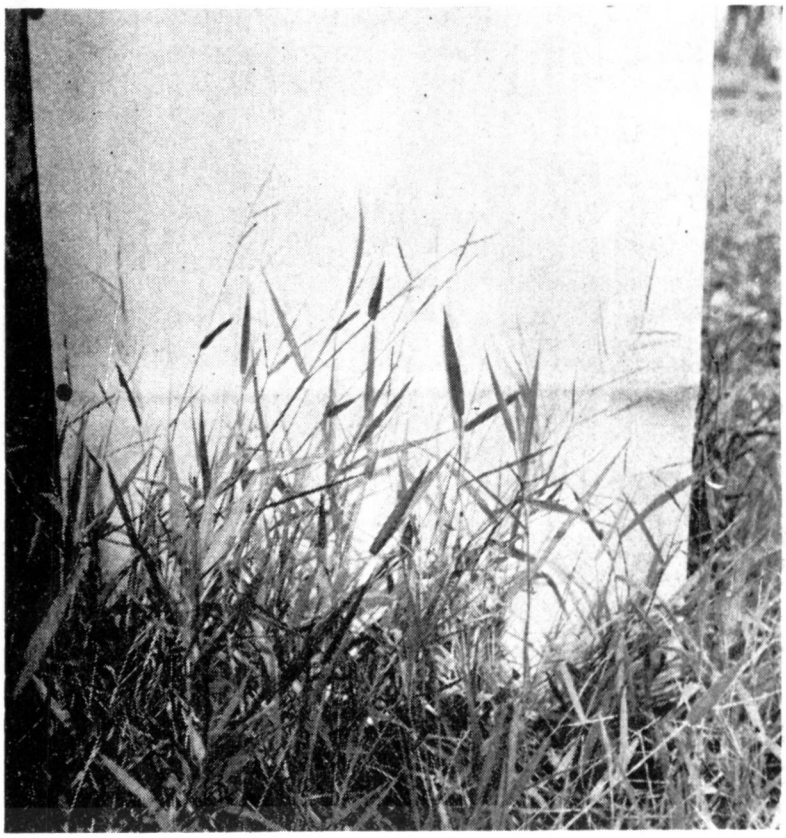

Fig. 3.

UNDERGRAZED.

Seeding Pasture Grass, too old and unappetising.

Brachiaria miliformis.

It is, however, preferable to choose grasses that grow naturally in the locality, *e.g.*, *Brachiaria miliformis*, *Brachiaria distachyia* and *Stenotaphrum dimidiatum* to name a few. Such grasses put up a better fight than a foreign grass which is liable to fail, because the environment is unfavourable.

Soil fertility is also a vital factor in keeping pastures free from weeds. Most of the weeds have deeper root systems and can draw on a greater supply of food material than the more shallow

rooted grasses and legumes which are liable to fail if the topsoil is poor. Low soil fertility is indicated by the presence of plants like " Botia " and " Kakila " (*Gleichenia linearis*) and this can be remedied by the use of fertilizers or better still by the application of organic manures, preferably well-prepared farmyard manure. This will improve the competitive power of the grasses and legumes.

Fig 4.

OVERGRAZED.

Heavy Weed infestation does not allow pasture grass to grow well.

Weeds from left to right :

1. *Mimosa pudica* or **Sensitive plant.**
2. *Hyptis Suaveolens.*
3. *Sida acuta* (S) **Gas babila.**

It is clear that the eradication of weeds cannot be effected overnight or in a desultory fashion in a series of fits and starts. It must be done persistently and systematically. Correct and judicious grazing, following a system of rotation, (*vide C.C.Q.*, 1951, No. 4, page 181) the renewal of soil fertility, the correct use of implements at the proper time (*vide C.C.Q.*, 1951, Nos. 2 and 3, pp. 95), the correct selection of livestock (*i.e.* what size of animal and what breed) all tend to keep down weeds. Obnoxious weeds that have already established themselves or are in the danger of spreading must be first eradicated either by hand-weeding or by the use of specific weedicides. It is necessary to add that both these methods are expensive, especially selective weeding, but only thus can an almost total eradication be effected and a proper pasture established.

There is a popular saying among planters that " one year's seeding means seven years weeding." This means that if you neglect weeding to such an extent that the weeds become dominant, the cost of clearing up your neglected pasture becomes prohibitive. In consequence there will be continued neglect, leading to the total degradation of the pasture.

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