THE SCOURGE OF "IMPERATA"

By Sir HAROLD TEMPANY,

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. . . LEFT to themselves, abandoned chena lands become invaded by undesirable grasses of which the most important is *Imperata cylindrica* known by various vernacular names, such as "Illuk," in Ceylon, "Lallang" in Malaya, "Alang-Alang" in Indonesia, or "Cogon" in the Philippines. It demands a high rainfall, a uniformly high temperature and can thrive even on very poor soils. It seeds freely and its seeds are wind-dispersed; it grows rapidly and forms a dense mass of roots. In the very early stages it can be eaten by stock, but it rapidly becomes indurated and of little or no nutritional value, and is therefore largely useless as fodder. With the advent of drier weather it becomes tinder-dry and highly inflammable, and is almost inevitably fired, either by accident or design, each year, giving rise to fierce conflagrations in which almost all other forms of vegetation are destroyed. It consequently gives rise to a false vegetational climax, and the natural regenerative process cannot accomplish itself, since the vitally essential surface layer cannot become re-established. The habit of the grass allows sunlight to penetrate freely to the soil surface and the constantly recurring burning destroys soil organic matter as fast as it is formed. It gives rise to desiccated conditions and it is on this account that the term "dry" has been applied to such areas. Once this condition occurs the lands are usually regarded as irretrievably lost, since the dense mat of roots makes eradication of the grass extremely difficult and costly by ordinary methods, while the underlying soils are poor and of little value.

Dr. Gorrie has discussed the possibility of rehabilitating such lands in Ceylon but an even more pressing problem is the prevention of their further extension. The suppression of *Imperata* is an even more difficult problem. The first requirement is the re-establishment of the land in forest, to restore the water regime and to build up the surface layer of soil on which fertility depends. It is essentially a reafforestation problem; the primary need is to find plants which can establish themselves despite the competition of the grass, so as to provide the necessary shade to suppress the Illuk. It is a matter of finding a suitable ecological succession. It is of some interest to record that in Malaya some success was achieved before the war in suppressing the growth of *Imperata* on roadsides and railway embankments, where the risk of fire is particularly imminent, by the use of *Centrosema pubescens* as a cover crop; de Haan reports that in the island of Flores remarkable results have been achieved by planting *Leucaena glauca* in contour lines—a plant which is also favoured by Dr. Gorrie.

Spraying with chemicals might possibly be of assistance in suppressing *Imperata*, and arsenite of soda has been tried with some success in Malaya for controlling it on rubber estates; but the chemical is expensive, and the risk of poisoning is not inconsiderable, while it might be detrimental to the establishment of trees subsequently. It may be that a useful aid will eventually be found among some of the newer selective weed killers, but hitherto these have been mainly effective against dicotyledons, while in any event cost would be a limiting factor.

There is, however, no doubt that the matter is urgent and that some check must be devised to prevent new areas being devastated. Shifting cultivation must continue in many areas, but it should be carried out on a well-planned system of rotations designed to prevent the occurrence of vast stretches of unproductive grassland. This involves a greater control over peasant agriculture than has been hitherto deemed possible or expedient, while the systems must be acceptable to the cultivators themselves, since it is only when their willing acquiescence is assured that such changes can be introduced with prospects of success. There is, no doubt, that the matter is urgent and that some check must be devised to prevent new areas being devastated.

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