

THE PRICKLY-PEAR COCHINEAL

ITS UTILIZATION FOR DESTROYING CACTUS IN SOUTH INDIA

BY RAO SAHIB Y. RAMACHANDRA RAO, M.A., F.E.S.

Government Entomologist, Coimbatore.

The Prickly-Pear.—The prickly-pear—the familiar thorny hedge of fields in most parts of our province, is a Mexican cactus introduced about two or three centuries ago into India in an endeavour to cultivate the valuable cochineal insect of commerce. Owing to want of technical knowledge, however, the wrong species of cacti were imported; and the consequence was that the true cochineal insect could not be grown, while the prickly-pear plants could establish themselves and flourish by reason of the ease with which they could take root. The pears have now spread throughout the land, planted, in the first instance, as a live fence in cultivated fields, and later on, escaping into uncultivated land and pastures.

Though serving as a cheap and efficient hedge-plant, experience has shown that, unless periodically cut back, the cactus can become an unmitigated nuisance, especially around village sites, giving shelter to various reptiles and vermin and making the surroundings not only ugly but also insanitary. In a great many places, therefore, in the Madras Presidency there has been a keen demand for cheap and efficient methods for its destruction.

Destruction of cactus in Australia.—In Australia, where the prickly-pear is a far more serious problem, owing to its invasion of vast stretches of virgin land, various methods of destruction have been tried. Of those found efficient, the destruction of cactus by the injection or spraying of arsenical solutions is one, but under South Indian conditions the cost is rather prohibitive; and labour being available, cutting out the pear by hand would probably be cheaper and more efficient. Secondly, various insect pests and diseases found attacking cacti in Mexico and South America have, with due precautions, been introduced into Australia with remarkable success. One of the insects thus introduced is a wild cochineal, *Dactylopius opuntiae (tomentosus)* which has been found very effective on two of the pears *Opuntia dillenii* and *Opuntia nigricans*, the two kinds most common in South India.

This cochineal was imported into Ceylon from Australia in 1926-7, and thence it appears to have been conveyed in 1928 by private agency to the environs of Tuticorin in Tinnevely District. When gradually news as to the efficient manner in which masses of prickly-pear had been killed at Tuticorin spread among the cultivators, they began to carry the insect from village to village, so that at the present time the cochineal is found not only in the various parts of the Tinnevely District, but also distributed in various centres in the Districts of Ramnad, Madura, Trichinopoly, Tanjore, Salem and Coimbatore. The latest information is that it has also been conveyed to parts of Northern Circars and Ceded Districts.



THE PRICKLY-PEAR 'COCHINEAL'

The Cochineal Insect.—The cochineal is a small insect belonging to the class of Mealy-bugs. It is dark purple in colour but presents a whitish appearance being marked by a dense waxy covering of bright white colour. The insect is possessed of tubular mouth parts, by fixing which in the tissues of the pear it sucks up the juice of the plant. Each female bug is able to produce a hundred or more young ones in the course of a month. The young bugs are very active and are able to travel from one joint to another, and similarly also from one clump of cactus to a neighbouring one in search of succulent tissues and thus spread the infestation. When the young bug has fixed itself somewhere, it does not shift its place usually. It feeds and grows until it becomes mature in about 4 to 5 weeks. The bug is able to multiply rapidly, so that before long the infestation increases to such an extent that the cactus clump looks as if covered with whitewash. The clumps are killed usually in about 12 to 18 months.

How to introduce the Cochineal.—It is quite an easy matter to carry the cochineal from one place to another. Care should be taken to select only joints bearing fairly mature bugs; they should be carefully cut out and loosely packed in a basket or dealwood box, and can thus be conveyed in a cart to neighbouring villages, or sent by rail even to distant destinations. To infest fresh cactus, one has simply to tie some of the infested joints on to them, taking care to choose a comparatively shady situation for the purpose. The only precaution needed to be taken is to avoid a time of heavy rain or extreme heat for its introduction. Wherever the prickly-pear hedges are continuous, the insect will spread of its own accord from plant to plant, but if the clumps are isolated or scattered, it would be necessary to infect each clump separately to induce quick results.

Replacement of cactus hedges by other plants.—In certain villages the prickly-pear has justly been considered a boon by the cultivators owing to its efficiency in preventing cattle trespass. There is, therefore, a section of the agriculturists who are averse to the extermination of cactus. If, however, the cochineal happens to be introduced into some portion of the village, it is impossible to prevent it from spreading to all the cactus in the neighbourhood sooner or later. It is, therefore, wise to have the cactus replaced as early as possible by some other indigenous or introduced hedge-plant, of which there are many. One of them is *Commiphora* (*Balsamodendron*) *berryi*—(Tamil: Mullukkiluvai, Telugu: Chilla Kampa) a plant which forms an efficient and permanent hedge, though rather slow of growth: *Agave wightii*—which is known to function as an efficient quick hedge: *Euphorbia antiquorum*—(Tamil: Chadurakkalli, Telugu: Bommu jamudu), is another good substitute: some kinds of *Acacia* can also be grown as a thick hedge, if sown thick; also *Prosopis spicifera*—(Tamil: Vanni, Telugu: Jammi) will form a good fence if sown thick and kept trimmed.