

Two Exotic Weeds—How best to use them.

By S. N. CHANDRASEKARA AYYAR, M. A.,

Lecturer in Botany, Agricultural College, Coimbatore.

When Mr. S. V. Ramamurty, I. C. S., was the Director of Agriculture, Madras, he drew the attention of the Departmental Officers to the problem of utilisation of weeds that cannot be prevented from growing. In 1938 the writer observed two such weeds viz., *Croton sparsiflorus*, Morong, and *Tridax procumbens*, Linn., which have been growing not only in Coimbatore, but all over the Presidency in so rank a fashion that it struck him that the potentialities of these two weeds must be discovered. In Coimbatore the writer has often found buffaloes grazing on *T. procumbens*, Linn. which led him to think that this weed must possess fodder value and in the case of *C. sparsiflorus*, Morong, he was very much struck with its luxuriant growth and its dark green leaves that it set him thinking that it should serve as a very good green manure. Independent of the writer, enquiries were being made by the District Agricultural Officers regarding this latter weed and its suitability as a green manure. Advantage was taken of this also and both these weeds were sent to the Government Agricultural Chemist for analysis. In this is given a brief botanical description of each of these weeds along with the chemical analysis as it was done by the Chemist.

Croton sparsiflorus Morong Family: *Euphorbiaceae*. (Tamil: Milagai pundu; Telugu: Seema mirappa.)

From the Tamil and Telugu names given to the plant, one can easily understand that the ordinary layman's eye has been caught by the close resemblance which this plant bears to the chilly—*Capsicum annum*, Linn. There are however certain very broad characters in the vegetative parts of the croton weed which leads the lay man to mix it up with the chilly and these are the sympodial habit of its branching and the narrow lanceolate dark green leaves. It is here that one has to stop and think how important floral characters are in the determination of a species and its family. The plant is a native of Paraguay (South America) and is said to have first arrived in Bengal, in 1910. It is found today all along the East Coast from Assam down to Tinnevely, chiefly confined to railway embankments. From the coastal areas, the plant is spreading into the central districts and at Coimbatore it is the commonest and most luxuriantly growing weed not only on road sides, but all along the tanks, streams and river bed. In South India, the plant is said to have been first collected at Tirukarrangudi (Tinnevely District), 17 miles away from the nearest railway station.

The plant is an erect diffusely much branched annual herb growing to a height of 1 to 3 feet. The root system is shallow and surface-feeding. The main stem is green, woody at base and has sympodial growth after flowering. The plant is rough to the touch due to stellate hairs present all over it. The leaves are simple, alternate, exstipulate and crowded towards the tips of branches. The inflorescence is an erect androgynous spike

3—5" long with a few female flowers at its base and small sparsely se clusters of male flowers above. The fruit is a 3-lobed capsule dehiscing into 3 bits each enclosing a seed which is about 1/4" long, oblong, polished and mottled on the round back. There is a caruncle, a cushiony out growth on the tip of each seed as in castor.

Chemical Analysis.

Moisture.	8.42%
Loss on ignition.	80.81%
Insoluble mineral matter.	0.35%
Nitrogen (N)	2.32%
Potash (K ₂ O)	3.71%
Phosphoric acid (P ₂ O ₅).	0.38%

"This contains fair amounts of potash and nitrogen and can be very well used as a manure, after composting"

Tridax procumbens, Linn. Family - Compositae. (Tamil : Kallipundu, Gayavettu thalai; Telugu : Bokuvulu aku).

The plant is a native of South America and must have been introduced long ago as it has been with us for several years now, and has found a place in the Madras Flora (2). It is commonly met with on road sides and waste places in all dry districts and on all the low hills of South India up to an elevation of 2,000 feet or more. It is a straggler and a hispid perennial herb of 1—2 feet or more high with a few branches spreading on all sides. Leaves simple, exstipulate, short stalked and very much cut. The flowers are yellow and borne on long terminal heads, the stalk of the head being 10 inches or more. The plants in flower look very much like small *Chrysanthemums* from a distance. Florets are yellow and of two kinds, the outer ligulate and female, the corolla being 3 lobed and the inner disc florets tubular, hermaphrodite, the corolla being 5 lobed. The achenes have a feathery pappus. The plant produces seeds in abundance, as many as 500 to 1,500 per plant.

Chemical analysis.

Heads of analysis.	On dry basis.	On original moisture basis.
	%	%
Moisture	...	81.11
Ash	23.16	4.38
Crude proteins	9.97	1.88
Ether extractive	3.15	0.59
Crude fibre	29.83	5.64
Carbohydrates (by difference.)	26.83	6.40
	100.00	100.00
Albuminoids	8.13	1.54
Insoluble mineral matter	8.35	1.58
Iron (Fe ₂ O ₃)	0.85	0.16
Alumina (Al ₂ O ₃)	1.00	0.19
Lime (CaO)	4.80	0.91
Magnesia (MgO)	Traces	Trace
Potash (K ₂ O)	3.76	0.71
Phosphoric acid (P ₂ O ₅)	0.68	0.13
Nitrogen (N)	1.60	0.30

"The sample contains fairly good amounts of food ingredients, but the fibre content is a little too high. Probably, it is this factor that makes it more favoured by buffaloes than by cows. The weed is particularly rich in lime content".

Bibliography.

1. Tadulingam, C. & G. V. Narayana. *A Hand-book of some South Indian weeds* Supdt. Govt. Press, Madras.
2. Gamble, J. S. *The Flora of the Presidency of Madras*, Adland & Son, Limited London.

Cardamom Cultivation in the Bodi Hills.

By M. S. SUBBIAH, B. A., B. Sc. Ag.,

Assistant in Entomology, Tinnevely.

During 1937 there was a severe infestation of *Taenothrips cardamomi* on most of the cardamom estates in the Bodi Hills. The planters suffered a heavy loss. Some of them appealed to the Deputy Director of Agriculture, Madras for help early in 1938. In response to their request, the author was deputed to investigate this pest. This opportunity was taken to study cardamom cultivation as practised in these areas and the study continued as and when opportunities occurred. The materials gathered are summarised below.

Cardamom—(*Elettaria Cardamomum*, Maton) is a valuable spice. The plants are found growing luxuriantly in a wild state in elevated sheltered areas, scattered in the thick humid ever green shola regions of the Western ghats, with an annual rainfall ranging from 100 to 150 inches. There are only limited areas satisfying the above conditions and these are confined to the Western ghats in parts of Mysore, Coorg, Cochin, Travancore and Madras Presidency. According to an official estimate the total area under cardamoms in South India is about 86,134 acres but there are reasons to believe that the area is at least 100,000 acres.

The description of the plant *Elettaria Cardamomum*, as given by Fischer¹ is given below,—

Elettaria Cardamomum, Maton. Western ghats, wild and cultivated, 2500—4500 ft. The Cardamom.

Leafy stem 6—10 ft. high; leaves linear—lanceolate acuminate, sessile or very shortly petioled, glabrous above, softly pubescent beneath, 1—2 ft. long, 2—3 in. wide; panicles several upto about 2 ft. long, erect or prostrate; bracts 6—7 flowered, linear oblong, obtuse, about 15 in. long, corolla tube shortly exerted, lobes 0.5 in. long, lip longer, white striped with violet; capsule sub-trigonal, about 0.4 in. long, striate.

Var. *major*, more robust, leaves broader bracts more distant, 2—4 flowered; capsules 1" or more long. In the same localities.

The seeds of both used as condiments and medicinally.