NOTE ON "THE FLOWERING OF THE SO-CALLED DWARF VARIETY OF *ARTEMISIA VULGARIS*"

F. R. TUBBS

The plant which has been regarded as a dwarf variety of the introduced *Artemisia vulgaris* Linn., known in England as Mugwort and in Tamil as *cine mari-kolundu*, has never been definitely identified owing to its non-flowering habit in Ceylon. Before the war various attempts to cause it to flower, and thus to enable its definite identification had been made, including growth under varying conditions and the reduction of the period of illumination to eight hours daily. These failed to produce any effect and the position remained that its identity was presumptive only. A report from the Royal Botanic Gardens at Kew stated that it was different from all the specimens of *Artemisia* from India in their collection.

Mr. M. H. E. Koch, of this Institute, has since made a successful attempt to induce flowering by giving longer periods of illumination than the normal 12-12½ hours' daylight at this latitude.

Six 12-inch pots were previously prepared from ordinary soil mixed with a little cattle manure. Two or three small plants of the dwarf variety were placed in each pot and left in the open till they were established. Before the start of the experiment half-an-oz. of a "complete inorganic" fertilizer was applied to each pot. Five pots were treated with extra light, and one pot was used as a control. Additional illumination was commenced on 8th August, 1945.

The five pots receiving treatment were transferred daily each evening to a plant house, and placed on a stand immediately under 2 electric bulbs each of 200 watts placed 3½ feet above the plants. An eighteen-inch enamelled white shade reflected the light down on to the plants. The position of individual pots relative to the light source was kept constant. The control pot was kept continuously in the open.

At weekends (Saturdays and Sundays) all pots were left in the open; thus light treatment occurred on five consecutive evenings only of each week. Facilities for daily illumination for constant periods were unfortunately not available, and the period of additional illumination given varied considerably. The average extra daily illumination (reckoned from 1830 hours daily) was 6¾ hours but it varied on different days from 4 hours to 11 hours.

After two months of this treatment flower bud formation was observed on all the treated plants. Flowers matured during the ensuing month of continued light treatment. The heights of flowering stems varied from 15 inches to nearly 24 inches while the plants in the untreated pot maintained their normal non-flowering habit of 3 to 4 inches.

Specimens of the flowering stems have been sent to the Royal Botanic Gardens, Kew, for identification and duplicates have been given to the Department of Agriculture for record.

THE HISTORY OF A TEA FIELD

F. C. CHARNAUD

LUCKYLAND ESTATE.—Uda-Pussellawa — No. 2 Field = 32 acres.
YIELD PER ACRE for Season 1945. — 2,208 lbs. Tea.

Year	Yield per acre of No. 2	Average Yield for Pruning Cycle	Yield per acre Whole Estate	Average Yield for Pruning Cycle
1920	592 P.		573	
1921	656	749	549	580
1922	1000		618	
1923	724 P.		649	
1924	1125	925	711	680
1925	706 P.		691	
1926	1207	984	766	747
1927	1038		783	
1928	707 P.		818	
1929	1428	1157	900	852
1930	1337		838 R.	
1931	923 P.		860 R.	
1932	1542		930	
1933	1290 R.	1246	841 R.	861
1934	1230 R.		812 R.	
1935	858 P.		916	
1936	1559		975	
1937	1644	1390	987	1003
1938	1498		1186	
1939	991 P		1182	
1940	1730		1209	
1941	1845	1566	1042 R.	1179
1942	1700		1305	
1943	1140 P.		1225	
1944	1782		1237	
1945	2208	1782	1262	1246
1946 Estd	2000		Estd. 1262	

P. denotes Pruning — R. denotes Restricted

Percentage of Increase of No. 2 Field	137.28%
Percentage of Increase whole Estate	114.83%

NOTE.—We publish this summary of the history of a tea field in the belief that details will be of general interest. We have not examined the detailed records, but the Calendar year yields suggest that one of the reasons for the success of this field is that it conforms to the "late maximum" pruning cycle pattern referred to in Dr. Eden's article published in this number.—Ed., *T.Q.*

Age.—Planted in tea in 1897 by the late F. J. Whittall and John Gordon with local seed from bearers of a Manipuri hybrid grown on Rappahannock, Uda-Pussellawa, which produced a mixed, medium-sized jat. It was planted 3 × 4 feet up and down the main slope of the land giving an average of 3,500 bushes to the acre, with very few vacancies.

Situation.—Easy lay of land, facing South to South East, 4,400 to 4,800 ft. above sea level.

Climate.—Falling into the North East area of the Island. Uva climate with an annual average rainfall of 95 inches, of which half normally falls during the two months of December and January. Usual Uva drought in June to September with fairly strong, dry winds.

Soil.—A good black loam with fair depth, containing a proportion of quartz and, in patches, very rocky. Originally it carried a thick cover of Mana grass and scrub.

Pruning Cycle—Up to 1920 it was on a 2-year cycle, for the next 10 years, up to 1930, it was on a three-year cycle and since 1931 on a 4-year cycle. It has always been pruned during the months of June-July. It has never received a heavy cut down but every bush has been pruned according to its merits, removing part of the old knotted wood at each pruning and always preserving as much new wood as possible and spread of frame.

Artificial Manure.—Up to 1929 it received an annual application of 30 to 38 lb. nitrogen and corresponding phosphoric acid and potash. Since 1929, when it entered a 4-year pruning cycle, the nitrogen contents were increased to an average of 48 lb. but the applications were increased to six in the 4-year cycle. This lasted until 1938 when for various reasons the applications were reduced to 5 in a cycle of 4 years, but the average plant food allotted to the cycle remained the same. No application has ever been given 6 months before or 6 months after pruning. Since the Fertiliser Rationing Scheme was introduced the allocation of nitrogen has been reduced to 42 lb. per annum but, owing to difficulties of transport, etc. during the past 4 years two applications were completely missed while some applications had to be undertaken out of season.

Grevilleas and Nitrogenous Trees.—It was originally planted in grevilleas every 12 lines of tea and every 8th bush in the line or 48 ft. × 24 ft. All these old grevilleas were gradually cut out between 1923 and 1927 and new ones replanted from 1930. Dadaps were first planted in 1923 in every 4th line of tea and every 4 bushes in the line or 15 ft. × 15 ft. In the hollows where they grew too luxuriously every other dadap was killed some 10 years ago. The balance were continuously lopped at times of forking and controlled in between applications. All these old dadaps were killed and removed just prior to pruning in 1943, and this may be one factor which has contributed to the jump of 363 lbs. per acre last season when compared to the same cycle year in 1941.

Bush Manure.—It has always been planted with a rotation of some green manure plant and all loppings forked in.

Prunings.—For the past 17 years all prunings have been buried in holes. Before that they were forked in after drying.

Compost.—For two cycles in 1935, and again in 1939, this field received compost at the rate of 7 tons per acre. Since then all poor patches have received some form of additional cultivation.

Maize Interplanted.—30 acres out of the 32 were planted in maize after the pruning of 1943 and its yield of maize was 21 bushels per acre. For a time during 1944

the field appeared tired, but it soon recovered when the roots of the tea found their way into the remaining compost applied in the maize holes. With the maize stocks and some yellow daisy, 98 tons of compost was manufactured and forked in with the artificial in the autumn of 1944. This may also have contributed towards the recent increase of crop.

Roads.—If an example is needed that internal car roads increase yield through the help they afford to supervision, this field supplies it. It has a car road constructed in 1930 zig-zagging through its entire length.

Drains.—These, for years, have been in first class order and are fitted with stone built blocks : I have never seen them run dirty.

Terracing.—All the road banks are protected with a permanent dressed stone terrace and almost all drain banks have been built up with good large stones.

Weeding.—Clean throughout, and no oxalis or drymaria.