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ACTIVITIES OF THE COCONUT RESEARCH INSTITUTE DURING 1979

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The following report deals with the activities of the Coconut Research Institute and the Coconut Research Board covering the period 1979.01.01 to 1979.12.31.

The Coconut Research Board

Fifteen meetings of the Coconut Research Board were held during the year.

Membership of the Board was as follows :-

- Prof. B. A. Abeywickrama (*Chairman*)
- * Mr. A. J. W. Balthazaar
- * Mr. J. Primson Fernando
- Mr. S. C. Kahawita
- Mr. H. Don Moses
- Mr. K. F. J. Perera
- Dr. J. W. L. Pieris
- Dr. O. S. Peries. (with effect from 79.07.20)
- Mr. M. S. C. Peiris (with effect from 79.07.20)

(* Resigned with effect from 79.07.20 when the Boards under the C.D.A were reconstituted)

The Institute received 61 important visitors mainly from abroad. In addition, a large number of University students and school children visited the Institute.

Members of the Institute Staff continued to serve on numerous Boards, Committees and Panels and as visiting Lecturers to the Postgraduate Institute of Agriculture, Universities, Standards Bureau etc.

Staff Matters

Visits abroad by members of the Staff

Dr. U. Pethiyagoda (*Director*) February - March, Indonesia as a Consultant to the World Bank, to the United States on the same project (April), as Consultant to APCC/ESCAP Indonesia (September).

- Mr. M. Jeganathan (OIC/Chemistry) to the United States. (1979.08.30)
 Dr. U. Samarajeewa (RA/Chemistry) to the UK (79.01.30)
 Mr. S. L. Thalagala (RA/~~Soils~~^{Chemistry}) to Canada (1979.09.11)
 Dr. R. Mahindapala (CPO) Philippines, Assignment with Ministry of Education (June - Aug)
 Mr. P. A. C. R. Perera, (STA/CPD) Training in radioisotopes in Entomology, Florida (July/Aug).

Returned from Overseas Training

- Mrs. L. V. K. Liyanage (RA/Agrostology) on 1979.09.07 with M.Sc.
 Dr. M. P. L. D. Martin (RA/Intercropping) on 1979.11.26 with PhD.
 Mr. S. V. Sinnatamby (TA/Crop Protection) on 1979.02.06.
 Mr. A. M. Chandrasena (FA/Crop Protection) on 1979.06.25.

Remained on Postgraduate Training

- Mrs. S. M. Karunaratne (RA/Botany)
 Mr. V. U. de S. Jayasooriya (RA/Botany)
 Mr. M. N. M. Ibrahim (RA/Intercropping)
 Mr. P. Kanagaratnam (RA/Crop Protection)
 Mr. M. de S. Liyanage (EO/Intercropping)

Recruitments

- Miss S. Dharmawardene - Research Assistant from 1979.07.01.
 Mr. Dunstan Fernando - Asst. Manager (Mother Palms) from 79.11.02.

Resignations

- Dr. M. A. P. Manthirratna (Botanist) 1979.11.25.
 Mr. M. S. C. Samaranayake (RA/Intercropping) 1979.09.01.
 Mr. R. B. Rodrigo (Field Officer/Botany) 1979.12.10.
 Mr. R. R. A. Peries (RA/Botany) 1979.06.15.
 Mr. I. G. Jayasena (TA/Animal Husbandry) 1979.12.01.

Research Divisions

The main activities of the Research and Technical Divisions are summarised below :-

Agrostology Division

General

The rainfall during the year was satisfactory. All long term pasture trials were managed to schedule.

Bandirippuwa Estate

(P94)-This legume and grass trial with *B. miliiformis* and *Centrosema pubescens* was sampled twice during the year. Even though it is too early to make any comments, it was observed that the total dry matter production of the grass tended to be increased when mixed with the legume.

(P 95) – One cycle of defoliation was completed in this study of levels of fertilizer and frequency of defoliation of *Brachiaria ruziziensis*. An increase in yield was observed at low levels of defoliation and at higher levels of fertilization.

(P 97) – Four samplings were done with the virus resistant strain of *Digitaria decumbens* during the year. No incidence of virus was observed while there was a high response to added nitrogen.

(P 100) – This study on the comparison of milk yields of cows fed on mixed pasture (*Brachiaria miliiformis* and *Centrosema pubescens*) with that of cows fed on grass and concentrates and which is at its initial stages was managed to schedule.

2. Ratmalagara Estate

(P 101) – This trial on animal production from pasture legumes (Centro and Siratro) and one shrub legume (*Gliricidia*) combined with grass and compared with grass only, is at its preliminary stages.

(P 102) – This is an ecological trial on ten grasses *B. miliiformis*, *B. brizantha*, *B. dictyoneura*, *B. ruziziensis*, *Digitaria decumbens*, Green panic, Guinea B., *Setaria sphacelata* and Pusa Giant Napier was sampled twice during the year. It is too early to make any comments.

(P 103) – This trial on *Digitaria decumbens* was sampled 4 times during the year and it is too early to comment as it is at its early stages.

(P 104) – In this experiment with green panic, one cycle of defoliation was completed during the year and it is too early to comment.

(P. 105) – In this trial with *B. brizantha* and *Siratro* it was observed that the legume has failed to survive in the grass swards. It is too early to make further comments.

3. Sirikandura Estate

(P 98) – This is a detailed study of *B. ruziziensis* and *B. dictyoneura*. So far *B. dictyoneura* has been found to be superior to *B. ruziziensis*.

4. Walpita Estate

(P 99) – This is an ecological study on five pasture species *B. miliiformis*, *B. brizantha*, *B. ruziziensis*, *B. dictyoneura*, virus resistant Pangola and four fodder species Green panic, *Setaria sphacelata*, Guinea grass and Pusa Giant Napier. Six samples were taken during the year.

BIOMETRY UNIT

1. Statistical service

Statistical work for all the Research Divisions was attended to.

2. Research

The following experiments were maintained satisfactorily.

- (i) Calibration Trial
- (ii) Watering experiment
- (iii) Copra conversion factor experiment
- (iv) Bunch Thinning experiment

3. Surveys

The Unit carried out the following field surveys during the year.

- (i) Survey of Cyclone damage in the Eastern Province.
- (ii) Survey of the drought affected Coconut Plantations in the North-Western Province.
- (iii) Survey of the drought affected coconut holdings of the Wilpotha Colony.

4. Agri-Meteorology

The three agri-meteorological stations at B/E, R/E and I.S.G. were maintained satisfactorily.

BOTANY AND PLANT BREEDING DIVISION

(1) Breeding and Selection :

Controlled pollination as a source of commercial seed was completely suspended from January 1979. 7710 seednuts were harvested from 36,000 female flowers pollinated in 1978 at the Seed Garden Unit, Horrekelly.

80 samples of *typica* (prepotent) and 160 samples of *pumila* pollen were issued to public and private sector estates for their programmes of controlled pollination.

(2) Nurseries :

The nurseries at Bandirippuwa and Ambakelle (which are maintained by the Unit) received 51,133 *typica* x *typica* seednuts and 53,000 *pumila* x *typica* seednuts.

Pumila x *typica* seednuts were also issued to the Planting Division for planting in Walpita, Ibbagamuwa, Eranminigolla and Koggala nurseries.

For experimental purposes, the following quantities of seednuts were planted at Bandirippuwa nursery.

Experiment	Number of seednuts
(i) Colour inheritance trial	838
(ii) Planting at different densities (vertical and horizontal)	800
(iii) Segregation pattern of open pollinated F ₂ hybrids	832

During this period 23,151 *typica x typica* and *pumila x typica* seedlings were issued from Bandirippuwa and Ambakelle nurseries.

Besides the above, 1,606 king coconut and dwarf red seedlings were issued to growers from Bandirippuwa nursery.

3. Intervarietal F₁ hybrids

Observation trials at Bandirippuwa, Ratmalagara and Pothukulama were continued throughout the year.

4. Hybrid Performance

A 10 acre hybrid block was established in late 1977 at Mahailuppallama to observe the performance of hybrids under irrigated and non irrigated conditions. Initially, the whole 10 acres were irrigated until seedling establishment. This year, 5 acres were irrigated at different intervals leaving the rest non irrigated. 5 acre hybrid blocks in the Kurunegala, Sabaragamuwa, Kegalle, Matara and Colombo districts and Northern Province are still under observation.

5. Pothukulama Research Station :

Routine field operations were carried out on fields 1 - 10. The field trial on planting distances is now in its fifteenth year. The yield data of this experiment are being analysed this year.

6. Mother Palm Seed Supply Scheme :

In order to augment the shortfall in mother palm nuts, both "block nuts" and mother palm nuts were supplied to the nurseries. Nuts were collected from twenty six public and private sector estates ; 2,359,911 selected mother palm and block nuts were supplied to the Planting Division nurseries. 15,000 *pumila x typica* seednuts were supplied to the Coconut Cultivation Board for the Eastern Province nurseries. During the year an additional 3,290 mother palms were identified. The total number of mother palms now stand at 58,021.

7. Variety seednuts :

1010 variety seednuts were issued to the public from Bandirippuwa Estate during this year.

8. Seed Garden :

(1) Isolated Seed Garden, Ambakelle

Emasculation work was satisfactorily carried out in fields 5,9,10a, 10b, 11a, and 11b.

The numbers of flowers emasculated are given in the table below :-

Field number	Number of flowers emasculated
5	3016
9	2540
10a	5209
10b	3633
11a	2720
11b	1457

28110 *pumila* x *typica* and 15,398 *eburnea* x *typica* seednuts were harvested during the period 1978 October to 1979 September. This shortfall in production was mainly caused by drought that prevailed during the previous year as reported in last year's Annual Report.

This station received only 1161 mm of rain, in 97 rain days with uneven distribution. This seriously affected the condition of the palms and percentage setting of nuts. The yellow form of dwarf (*eburnea*) was more affected than the green form (*pumila*) with over 3000 casualties. This natural disaster may result in a drastic fall in seednut production during the next two years at least.

(ii) Second Seed Garden, Horekelly

This station received only 1598 mm of rain. 589 vacancies in field No. 5 were supplied with red dwarf (*regia*) seedlings. In May - June season 672 dwarf (*regia*) seedlings were planted in this field. 1896 vacancies in the fields 1,3,4 and 5 were supplied with seedlings as follows :-

Field No. 1	(green)	882	seedlings
Field No. 3	(green)	59	Seedlings
Field No. 4	(green)	275	Seedlings
Field No. 5	(green)	8	Seedlings
Field No. 5	(red)	672	
		1896	

(1) Laboratory and other field investigations :

- (1) The investigations on the genetics of colour inheritance in inter-varietal hybrids has been concluded and results are being prepared for publication.
- (2) Extraction and identification of the pigments present in the epicarp of nuts of different varieties and their hybrids was initiated this year. It is expected to be completed in 1980.
- (3) Preliminary investigations on dry matter production at different nursery planting densities were carried out. But they need to be repeated on a more organised scale in the next year on a design capable of statistical analysis.
- (4) Induction of parthenocarpic nuts using synthetic hormones were carried out this year. This project was suspended due to the difficulties which arose as a result of the severe drought experienced. Further studies are planned.
- (5) Open pollinated hybrid seednuts from Bandirippuwa Estate field No. 14 were planted in B/E Nursery in order to find out the segregation pattern of the F₂ generation. Preliminary observations of these seedlings are being completed and they will be planted at Kirimetiya Estate to study their subsequent performance.

- (6) Effect of (i) one month maturity of seednuts and
(ii) vertical vs. horizontal planting as they affect the developmental stages of the embryo are also under investigation.
- (7) Studies on Tissue culture and embryo culture of coconut are in progress.

CHEMISTRY DIVISION

1. NUTRIENT CONTENT IN LEAF AND DRUPE

(a) Effect of irrigation on nutrient concentration

In order to study the changes in nutrient concentration of coconut with irrigation the 14th leaf, kernel and nut water (both from bimonthly picks) were collected from an irrigation experiment at Ratmalagara Estate. The analyses for N,P,K, Ca and Mg are in progress.

(b) Leaf scorch affected palms

Studies were continued on the analyses of nutrient composition (macro-elements) of leaves and carbohydrates in the stem of healthy and leaf scorch affected palms from Sirikandura Estate, Dodanduwa.

(c) Nutrient compositions in the developing coconut drupe

Studies was conducted to follow the transformations of nutritional components in the drupe at successive developmental stages.

The amounts of sugars and minerals in the nut water progressively increased from the beginning of nut water formation (button nuts) to 'kurumba' stage and thereafter decreased steadily until green the stage ripe nut.

In the kernel, minerals and oil increased gradually from the beginning of kernel formation (kurumba) until green ripe nut stage. The sugars on the other hand increased up to tender 'Kalati' formation and thereafter remained almost constant until maturity.

The loss of minerals from the nut water during maturity (kurumba to ripe nut) was not sufficient to provide the minerals found in the mature kernel; the loss of sugars from the nut water was greater than that found to be in the kernel which had in the meantime accumulated starch and oil.

2. STUDIES ON TAPPING - TODDY YIELDS AND EFFECTS OF TAPPING

Two experiments were commenced during May this year to study the following :-

- (a) Economics of toddy tapping and
(b) After-effects of toddy tapping.

In the first experiment the yield of toddy (9 months tapping) followed by yield of nut (4 years and 3 months) will be recorded. The yield of nuts will also be recorded for control palms (without tapping) for a period of 5 years starting from the same time as the tapping experiment.

Out of the 24 palms being tapped for toddy in 8 palms cutting of the spadix is stopped when the region bearing button nuts is reached. In another 8 palms alternate inflorescences are left untapped and so allowed to produce nuts - i.e. only the alternate inflorescences are tapped for toddy.

In the second experiment on after-effects of toddy tapping, records will be kept of the number of fronds, girth of the trunk near the crown and quantity and quality of nuts in palms that are tapped and in untapped control palms.

3. COCONUT SAP

(a) Non-alcoholic products from coconut sap

Using chemical antiferments (food additives) in the receiving vessel attached to the spathe, it was possible to collect sweet toddy of reasonably good quality. The sweet toddy was concentrated to a syrup of about 50 brix which was then used as a starting material for the preparation of cordials and aerated table waters by the addition of fruit essences and to prepare golden syrup. The work along these lines is progressing.

(b) Clarification of toddy

Coconut toddy could be clarified to a clear, colourless liquid by passing through filter mats in a filter press operating at 15 lb/in², but the speed of filtration was very slow.

(c) Preparation of a 'wine' from coconut sap

By the use of suitable substances that prevent acetification, a toddy of high alcoholic content (about 10% v/v) was produced. This could be kept for many days without acid formation. The product was then clarified and stored in corked bottles. The beverage thus prepared had the characteristics of a good, dry wine. Work along these lines is in progress.

(d) Fermentation of coconut sap

Studies on the succession of microbial flora in fermenting toddy continued and a new method of identification of yeasts was developed. Various types of yeasts which produced a toddy of agreeable aroma and with a higher percentage of alcohol were isolated.

CROP PROTECTION DIVISION

1. Pests

(a) *Promecotheca cumingi*

The infestation that occurred during the latter part of 1978 developed and spread over a ground area of about 6,000 acres in Galle. A Laboratory to breed the parasites, *Dimmockia javanica* and *Pediobius parvulus* was established at the premises of the Tea Research Institute substation at Kottawa. This continued to function until November, during which period a large number of parasites was bred and released in affected areas. By the end of the year the pest had been brought under control in all areas, except at Gintota and Boossa where slight infestations were recorded. Population fluctuation of this pest was monitored monthly in the Galle area during the period under review. Several field experiments on the ecology of this pest are being carried out in Galle.

(b) Coconut caterpillar (*Nephantis serinopa*)

In the Southern Province, in and around Vitharandeniya, an area of about 1,000 acres was affected with this pest. In severe infestations insecticides were sprayed to bring down the pest population before releasing parasites. By the end of the year, the pest was brought under control in most of the areas except in about 50 acres. This pest also affected several smallholdings at Chilaw and Ja-ela. Parasites were released in these areas.

The parasite breeding programme was continued at the Insectary at Lunuwila, where breeding of *Eriborus trochanteratus*, *Perisierola nephantidis*, *Spoggosia bezziana* and *Trichospilus pupivora* was continued. In the Eastern Province, the pest persisted on palmyrah palms after destruction of coconut palms by the cyclone in November 1978. Since the cyclone in this Province the parasite breeding programme was discontinued.

(c) Coconut Scale (*Aspidiotus destructor*)

A few reports of the coconut scale pest were received. In all localities the pest was controlled by the naturally-occurring coccinellid predators, *Chilocorus nigritus* and *Pullus xerampelinus*.

Several studies on the pest/parasite/predator complex were carried out.

(d) Red Weevil (*Rhynchophorus ferrugineus*)

Several reports of this pest were received which were referred to their respective Coconut Development Officers for inspection and advice.

No experiments were carried out on this pest.

(e) Black Beetle (*Oryctes rhinoceros*)

A few reports of this pest on young plantations were received. The importance of maintaining plantation sanitation in controlling this pest was explained to the growers.

(f) Biological control of *Chromolaena odorata*

Several field experiments were carried out on the use of the defoliator insect, *Ammalo insulata*.

2. Diseases

Only a few reports of Bud rot and Stem bleeding disease were received.

A field experiment was initiated on leaf blight disease of coconut. The studies on phylloplane fungi of coconut were continued.

INTERCROPPING DIVISION

1. *Walpita project.*

- (a) A long term experiment to study the effect of 4 plant densities and 3 levels of fertilizer on the growth and the yield of coffee and the effect of coffee on the yield of coconut is being continued.
- (b) A long term experiment to study the performance of 4 cocoa selections at 3 levels of fertilizer is being continued.
- (c) Mixed cropping trial on coffee, cocoa and pepper under coconut is being continued.

2. *Sirikandura Estate*

- (a) Experiment to study the effect of coffee, cocoa, cloves, cinnamon pineapple and pepper (on live supports) on the yield of coconut, is being continued.
- (b) Experiment to study the effect of rotation on the yields of turmeric and kiriala under coconut is being continued.

3. *Bandirippuwa Estate, Lunuwila*

- (a) An experiment on the effect of 3 levels of fertiliser on 10 coffee selections under coconut is being continued.
- (b) An experiment to study the performance of 10 cocoa selections under coconut is in progress.
- (c) A long term experiment on a 15 acre block to study the economic feasibility of growing coffee, cocoa, passion fruit, pineapple, banana, cinnamon, pepper, dioscorea yams, fruit trees and vegetables is being continued.

4. *Ratmalagara Estate, Madampe*

Experiment to study the effect of plant density and system of training on the performance of passion-fruit on the yield of coconut is being continued.

5. *Animal Husbandry*

The rotational cross breeding programme to stabilize the hybrid vigour of Sinhala x Temperate breeds of cattle was continued. Due to lack of sufficient land for pasture production a part of the herd was sold to the National Livestock Development Board to continue the programme under our supervision. These animals will be kept at Walahapitiya Farm.

PLANTING DIVISION

1. Nurseries, Seed Coconuts, Seedlings booking etc.

Fifteen (15) coconut nurseries were maintained during the year 1979 and eighteen (18) other nurseries were established for Agricultural Productivity Centres and other Government Institutions.

Statement of Seed Coconut planted for issue of Seedlings in May/June 1979 and in Oct./Nov. 1979

Name of the Nursery	Seed Coconuts planted		
	May/June 1979	October November 1979	Total
1. Alampil Nursery	.. —	68,590	68,590
2. Attavillu Nursery	.. —	74,465	74,465
3. Eraminigolla Nursery	.. 25,000	40,000	67,000
4. Handapangala Nursery	.. —	75,820	75,820
5. Hettipola Nursery	.. 25,000	40,555	65,555
6. Ibbagamuwa Nursery	.. 149,670	219,275	378,445
7. Kalawewa Nursery	.. 4,500*	5,000*	153,175
8. Kilinochchi Nursery	.. —	153,175	153,175
9. Kirimetiyanana Nursery	.. —	75,280	75,280
10. Koggala Nursery	.. 73,350	81,190	154,540
11. Mylambavelly Nursery	.. 20,490	72,030	97,520
12. Pallekelle Nursery	.. 5,000*	32,000	32,000
13. Ratmalagara Nursery	.. 74,630	121,635	201,715
14. Walpita Nursery	.. 157,400	147,925	310,299
15. Wilpotha Nursery	.. 52,750	41,540	99,290
	.. 115,000	169,150	284,150
Total	.. 702,790	1,435,054	2,137,844

* Indicates Hybrid

Other Nurseries

	May/June 1979	Oct./Nov. 1979	Total
1. Yakwila APC	—	22,575	22,575
2. Homagama APC	3,000	2,590	5,590
3. Homagama Gabadawatta LRC	9,000	9,000	18,000
4. Devalapola APC	—	6,000	6,000
5. Hamangalla APC	—	4,980	4,980
6. Katugampola DDC	24,150	27,440	51,590
7. Madya Maha Vidyalaya, Dehiwela	—	2,875	2,875
8. Walpita APC	12,000	6,000	18,000
9. Ingiriya APC	6,000	3,000	9,000
10. Maharagama Practical School	—	3,000	3,000
11. Pamunugama APC	—	3,000	3,000
12. S.S.R.S. Jaffna	—	21,100	21,100
13. Minuwangoda APC	3,000	—	3,000
14. Malabe APC	6,000	—	6,000
15. Mundel DC	4,000	—	4,000
16. Narammala APC	6,000	—	6,000
17. Padukka APC	6,000	—	6,000
18. Kananwila APC	3,000	—	3,000
Total	82,150	111,560	193,710

Summary

	May/June 1979	Oct./Nov. 1979	Total
CRB Nurseries	702,790	1,435,054	2,137,844
Other Nurseries	82,150	111,560	193,710
	<u>784,940</u>	<u>1,546,614</u>	<u>2,331,554</u>

Seedling Bookings

As from October/November 1978 Season the distribution of seedlings is handled by the Coconut Cultivation Board.

Seedlings Issued

- 4 A total of 1,397,539 seedlings was issued during the year 1979 and the distribution of the same in nurseries is as follows :

<i>Nursery</i>	<i>M/J</i> 1978	<i>O/N</i> 1978	<i>M/J</i> 1979	<i>O/N</i> 1979	<i>M/J</i> 1980	<i>Total</i>
		x				
		x				
1. Alampil ..	—	9,694	—	19,200	—	28,894
2. Attavillu ..	—	4,153	—	49,030	—	53,183
3. Eraminigolla ..	—	7,956	15,518	22,039	—	45,513
4. Handapangala ..	—	2,528	—	56,944	—	59,472
5. Hettipola ..	—	10,252	17,447	28,998	—	56,698
6. Ibbagamuwa ..	—	24,919	84,349	132,148	712	242,127
7. Kalawewa ..	—	36,864	—	94,077	—	130,941
8. Kilinochchi ..	—	2,940	—	69,272	—	72,212
9. Kirimetiya ..	45	42,355	48,255	47,755	100	100,490
10. Koggala ..	—	11,559	19,358	40,984	—	71,901
11. Mylambavelly ..	—	39,438	—	—	—	39,438
12. Pallekelle ..	—	18,417	44,954	70,615	—	133,986
13. Ratmalagara ..	—	3,805	118,109	55,249	—	166,163
14. Walpita ..	—	8,224	6,183	19,370	—	33,777
15. Wilpotha ..	—	8,273	65,078	70,393	—	143,744
Total ..	45	201,357	419,251	776,074	812	1,397,539

DIVISION OF SOILS

Field Experiments

(a) Long term field experiments

Twelve long term field experiments were maintained at Bandirippuwa, Ratmalagara, Poththukulama, Bingiriya, Weerapokuna, Makandura, Kakkapalliya, Pallai and Kobeigana.

The NPK experiment at Ratmalagara was closed down at the end of the year. Eight plots of this experiment are retained to study (i) the effects of stoppage of fertilizer on the yield of palms which had received highest levels of fertilizers from the time of planting and (ii) the recovery of palms (which received the lowest levels of fertilizers) on application of high rates of fertilizer.

A new experiment was commenced to determine the growth and yield responses of young palms (second plantation, Dwarf x Tall) to the application of three levels of an inorganic fertilizer mixture at different rates of increment with age at Bandirippuwa.

(b) Soil moisture experiment

The soil moisture experiment at Ratmalagara was continued.

(c) Husk experiment

A new experiment was commenced on the effect of husk-burial on soil moisture conservation under coconut at Ratmalagara.

(d) Soil erosion experiment

A new experiment on the effects of intercropping on surface runoff, soil losses and water infiltration under a mature stand of coconut

was commenced at Bandirippuwa. The intercrops are Guinea B (*Panicum maximum*) and manioc (*Manihot utilissima*) in one experiment and cori grass (*Brachiaria miliformis*) on the other.

(e) *Leaf water potential*

Leaf water potential of coconut leaflets was measured using a pressure bomb. Diurnal variation and the effect of irrigation on leaf potential were studied.

2. Pot Experiments

Studies on the performance of Eppawela apatite were continued on soils from the field experiment at Andigedera.

3. Laboratory Investigations

- (a) Analysis of leaf and soil samples from the field experiments was continued.
- (b) Downward movement and transformation of phosphorus at Naiwala and Marandawila estates were studied.
- (c) Phosphorus status of the main coconut growing regions of Sri Lanka was determined.

4. Soil Survey

- (a) A detailed soil survey of Ratmalagara Research Station was completed.
- (b) A detailed soil survey of Walpita Block B was done for the Inter-cropping Division.
- (c) Soil Surveys of the following JEDB estates were completed:

Puttalam

Kivulkelle, Seenasola, Thambapanni, Daisyland, Nagavillu, Mayfield and Fonsekapura.

Pallai

Tharmakerney and Karandai.

- (d) Land capability evaluation for intercrops at Kotawila, Kamburugamuwa was carried out for a UNDP project.

PUBLICATIONS/PUBLICITY UNIT, LIBRARY AND COCONUT INFORMATION CENTRE

1. Publications

The Ceylon Coconut Quarterly 26: 1-2, 3-4, 27 : 1-2, 28 : 1-2, The Ceylon Coconut Planters' Review, 7 : 2, Pol Pavat 7 : 1 and Tennait Takaval 1 : 1 were printed and Sinhala Advisory Leaflets, Nos, 2,4,8,9,17,33,35,36,39,40 and 41 and Tamil Advisory Leaflet, No, 4 and English Advisory Leaflet No. 36 were reprinted/revised during the year.

2. Publicity

This Board participated in the exhibition on coconut held at the Joseph Vaz College grounds, Wennappuwa during December. During the year there were 4798 local and 61 foreign visitors.

3. Library

Seventy six new books were added to the library during the year bringing the total number of books to 3823. The total number of journals acquired on subscription and exchange increased from 241 to 251 during the year.

4. The Coconut Information Centre

The project document to set up the Coconut Information Centre was signed by the representatives of Canada and Sri Lanka on 10.01.79.

"COCONIS" a brochure on the Centre was printed and distributed to all organisations and persons concerned with coconut research throughout the world.

The main task of the centre during the year was the collection of data for the proposed World Directory of Coconut Research Workers.