CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA AND SIDDHA

ANNUAL REPORT

1996-97

(Department of Indian System of Medicine & Homoeopathy)

MINISTRY OF HEALTH AND FAMILY WELFARE

(Government of India)
New Delhi

CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA AND SIDDHA

ANNUAL REPORT

1996-97

(Department of Indian System of Medicine & Homoeopathy)

MINISTRY OF HEALTH AND FAMILY WELFARE

(Government of India)
New Delhi

CONTENTS

S.No.	Subject	Page No.
I.	**Preface**	(V)
II.	**Administrative Report**	1
III.	**Technical Report-Ayurveda**	
1.	Abbreviations used for Institutes/Centres/Units	6
2.	Clinical Research Programme	
	(a) Clinical Trials	9
	(b) Statement showing disease groups, number of patients studied and participating projects during 1996-97	29
	(c) Statement of the patients attended at OPD and admitted/discharged in the IPD during 1996-1997.	31
	(d) Health Care Research Programme	33
3.	Medico-Ethno-Botanical Survey Programme	40
4.	Cultivation of Medicinal Plants	43
5.	Pharmacognosy Research Studies	47
6.	Plant Tissue Culture	48
7.	Musk Deer Breeding Programme	49
8.	Chemical Research Programme	50
9.	Pharmacological Research Programme	58
10.	Drug Standardisation Research Programme	62
11.	Literary Research Programme	67
12.	Arnchi Research Unit	70
13.	Family Welfare Research Programme	71
14.	Publications/Participations	75

IV. Technical Report-Siddha

1.	Abbreviations used for Institutes/Units	94
2.	Clinical Research Programme	95
3.	Health Care Research Programme	101
4.	Medico-Botanical Research Programme	102
5.	Pharmacognosy Research Programme	104
6.	Pharmacological Research Programme	105
7.	Pharmaceutical/ Standardisation Research Programme	107
8.	Pharmacy	109
9.	Literary Research Programme	110

V. Acknowledgement 111

PREFACE

The Central Council for Research in Ayurveda and Siddha, an autonomous organisation under Department of ISM&H, Ministry of Health & F.W., Govt. of India, is an apex body in the country for the formulation, co-ordination, development and promotion of research on scientific lines in Ayurveda and Siddha System of Medicine. The Council carries out its objects and functions through the network of Research Institutes and Centres functioning under its direct control and through a number of Units located in Universities, Colleges of Ayurveda, Siddha and Modern Medicine etc., in different parts of the country. A brief review of the work carried out under the different research programme during the year 1996-97 is reported hereunder.

Clinical Research Programme

Clinical problems studied in Ayurveda during the reporting period, include Amavata (Rheumatoid arthritis), Paksvadha (Hemiplegia), Gridhrasi (Sciatica), Parinamasula (Duodenal ulcer), Annadravasula (Gastric ulcer), Kamala (Jaundice), Bhagandara (Fistula-in-ano), Medoroga (Obesity), Mutrasmari (Urolithiasis), Vyanbalavaismya (Hypertension), Hridroga (Ischaemic heart diseases), Slipada (Filariasis), Satat Jvara (Kalazar), Visamajvara (Malaria), Kitibha (Psoriasis), Kuposan (Malnutrition syndrome) and Timira roga (Errors of refraction).

Clinical conditions studied under Siddha System of Medicine include Kalanjaga Padai (Psoriasis), Putru noi (Cancer), Guman (Intestinal disorders), Manjal Kamalai (Infective hepatitis), Sandhu Vata Solai (Rheumatoid arthritis), Velluppunoi (Anaemia), Venkuttam (Leucoderma) etc.

During the reporting period 3,19,174 patients were treated at OPDs and 1981 patients were treated at IPDs of the Institutes/Centres/Units functioning under the Council.

Health Care Research Programme

Health Care Research Programme carried out by the Council include, Service Oriented Survey and Surveillance Programme, Community Health Care Research Programme and Tribal Health Care Research Programme.

These programmes are modulated to have rural basis so that benefits of the research programmes carried out can reach to the grass root level. Under these programmes, team of research personnel visit each and every house in the villages/tribal pockets selected/adopted and provide incidental medical aid, besides, collect the data pertaining to the nature and frequency of prevalance of diseases, food habits with regard to different seasons, socio-economic status, natural resources, the standard the types of treatment available to the rural/tribal folk. During the period under report, 1,50, 648 individuals belonging to 93 villages tribal pockets have been covered under this programme and incidental medical aid provided to 35,583 patients.

Drug Research Programme

The Drug Research Programme consists of Medico-botanical Survey, Cultivation of Medicinal Plants, inter-disciplinary research programme like, Pharmacognostical, Chemical, Pharmacological and Toxicological studies, besides, Drug Standardisation studies. Under Medico-botanical Survey Programme, Local survey tours were conducted for collection of raw drug material for the use in OPDs/IPDs of the Institutes/Centres/Units of the Council and also to PLIM, Ghaziabad for research studies. The Survey Units have also taken up maintenance work of their Herbarium and Museum. About 450 medicinal plants species are presently growing in different Gardens. Pharmacognostical studies of 12 drugs, Chemical studies of 17 drugs and Pharmacological and Toxicological studies of 36 drugs, used in Ayurveda and Siddha have been carried out during the reporting period. The Council is also maintaining a Musk Deer Breeding Farm at Mehroori in Kumaon Hills and there were 21 animals at the time of reporting.

Under Drug Standardisation research studies 61 single drugs have been studied for their standardisation, Pharmacognostic, Phytochemical and Physico-chemical studies, besides, the study of 14 finished products and five methods of manufacturing of drugs.

Literary Research Programme

Literary Research Programme broadly covering medico-historical studies, collection and compilation of references relating to drugs and diseases from classical treatises, lexicographic works of contemporary literature and publications of Ayurveda, Siddha continued further. The Council is bringing out "Journal of Research in Ayurveda & Siddha, "Bulletin of Medico-Ethno-Botanical Research", Bulletin of Indian Institute of History of Medicine" besides the "News letter". Monographs on "Apasmara"

(Epilepsy) and "Tamak Swasa" (Bronchial asthama) have been published and released during the reporting period.

Family Welfare Research Programme

Clinical screening and Pharmacological studies of the oral contraceptive agents are being carried out under this programme. 461 new cases were studied besides old cases carried forward from the previous year for clinical evaluation of oral contraceptive agents like AYUSH AC- IV, K capsule, Pippalyadi yoga, Neem oil and Vandhyavari (*Vicoa indica*). Pharmacological studies on seven drugs have been carried out.

During the reporting period the Council has organised a workshop on "Slipada" at CRI (Ayurveda), Bhubaneswar in the month of April, 1996 and an another workshop on "Tamak Swasa" at Patiala in the month of March, 1997. The Silver Jubilee at IIK, Patiala, was also celebrated during the time of Workshop on Tamaka Shwasa. The Council's officers/officials have participated in a number of National/International Seminars and Conferences.

H.R. Goyal

(H.R. Goyal)
Director
and
Member-Secretary
Governing Body

Dated: 5th December, 1997

ADMINISTRATIVE REPORT

The Central Council for Research in Ayurveda and Siddha is a Society registered on 30th March, 1978 under the Societies Registration, Act XXI of 1860. During the period under report ending 31st March, 1997 the Membership of the Society and Governing Body of the Council were as under:-

President	Shri Salim Iqbal Sherwani, Minister of State for Health & Family Welfare.
Official Members:	
1. Secretary (ISM&H) Ministry of Health & F.W.	Shri Y.N. Chaturvedi, Smt. Shanta Shastry (From 2.1.1997)
2. Joint Secretary (ISM&H)	Shri K. Chandramouli Shri Pradip Bhargava (From 6.9.1996)
3. Joint Secretary (FA)	Mrs. A.P. Ahluwalia Shri Vijay Singh (From 14.8.1996)
4. Non-Official Members	1. Vd. B.D. Triguna 2. Dr. Nanak Chand Sharma 3. Shri. P.K. Warrier 4. Vd. S.K. Mishra 5. Dr. S.T. Gujar 6. Vd. Prof. V.J. Thakar 7. Dr. R. Kannan 8. Dr. K.V. Vaitheswaran

	9. Dr. (Prof.) P.K. Das (Upto 24.10.1996)
	10. Prof. A.N. Namjoshi
	11. Prof. C. Santhamma
5. Director, NIA, Jaipur	Dr. C.H.S. Shastri
6. Director, NIS, Chennai	Vacant
7. Member-Secretary	Dr. V.N. Pandey, Director, CCRAS (Upto 22.10.1996)
	Dr. H.R. Goyal, Director, CCRAS (From 24.10.1996)

During the period under report, the Governing Body met twice on 15.10.96 and 15.11.1996 and the following important decisions were taken.

1. The Governing Body unanimously authorised the President of the Governing Body of the CCRAS to take decision on the disciplinary case against Dr. V.N. Pandey, Director, CCRAS on the advice of the Central Vigilance Commission.

2. Adopted the Annual Report of the Council for the year 1995-96 and Audited Statement of Accounts for the Year 1994-95 & 1995-96.

3. Approved the reports submitted by the Sub-Committee on Reorganisation of CCRAS to increase effectiveness in management and improve research capability.

4. Constituted an Executive Committee to have an effective mechanism for improving timely working and accountability in the CCRAS.

5. Approved amendment in the membership of Governing Body and Finance Committee.

Finance Committee

During the year under report, the Standing Finance Committee consisted of the following:

1.	Joint Secretary (ISM&H) Ministry of Health & F.W.	Sh. K. Chandramouli/ Sh. Pradip Bhargava	- Chairman
2.	Joint Secretary (FA) Ministry of Health & F.W.	Mrs. A.P. Ahluwalia Sh. Vijay Singh	Member

3.	One Technical member to represent Ayurveda	Vd. B.D. Triguna	Member
4.	One Technical member to represent Siddha	Dr. R. Kannan	Member
5.	Director, CCRAS		Member-Secretary

During the period under report, the Standing Finance Committee met four times on 19th July, 1996, 26th August, 1996, 24th October, 1996 and 10th March,1997 and considered and approved proposals related to the financial matters.

Representation of Scheduled Castes/Scheduled Tribes in the Council Services and Welfare Measures for SC/ST.

The Council is following the orders and guidelines laid down by the Government of India in respect of reservation and representation of SC/ST in the services of the Council. The recruitment/promotion is done according to the roster points. The Council is having a total staff strength of 1581 employees and No. of SC/ST employees in different groups on 1.1.1997 is as under: (upto 31.12.96).

Group	No. of employees	SC	% of total employees	ST	% of total employees
A	151	13	8.61	5	3.31
B	197	15	7.61	2	1.02
C	557	87	15.62	23	4.13
D	676	228	33.73	64	9.47
Total	1581	343	21.70	94	5.95

The Council is having nine Tribal Health Care Research Projects (Seven in Ayurveda and two in Siddha) which have been specially located in tribal pockets. These programmes envisage great scope not only to understand the local health problems and interdependent issues but also to identify and apply/advise the methods and measures suitable to surmount them. Besides some of the Research Centres are also located in rural area and through OPD/IPD of these Institutes, Centres and under Mobile Clinical Research Programmes and Community Health Care Programme, medical relief and health benefit have been extended to a large number of SC/ST population. The budget of the Council stipulates specific allocations for SC/ST component plans.

Official Language Implementation Committee

The Council is having an official Language Implementation Committee under the Chairmanship of the Director, CCRAS to review the position regarding implementation of Official Language Act/Policy/Rules, Orders, Programmes etc., and to suggest measures for increasing the pace of Hindi in the Council. During the period under report, the Committee met twice on 26.7.96 and 15.1.97.

Scientific Advisory Committee (Ayurveda)

During the year under report, the Scientific Advisory Committee (Ayurveda) consisted of the following:

1.	Vd. B.D. Triguna	Chairman
2.	Vd. S.S. Chhangani	Member
3.	Prof. A.N. Namjoshi	Member
4.	Vd. S.P. Gupta	Member
5.	Vd. D.K. Triguna	Member
6.	Vd. S.K. Mishra	Member
7.	Dr. Rajender Gupta	Member
8.	Dr. S.M. Angadi	Member
9.	Vd. Sri Ram Sharma	Member
10	Shri P.R. Krishna Kumar	Member
11.	Dr. (Miss) P.V. Tewari	Member
12.	Vd. M.S. Shastri	Member
13.	Vd. R.P. Swami	Member
14.	Vd. Bhagwan Singh	Member
15.	Director, CCRAS	Member-Secretary

Scientific Advisory Committee (Siddha)

During the year under report, the Scientific Advisory Committee (Siddha) consisted of the following:

1.	Dr. R. Kannan	Chairman
2.	Dr. K.V. Vaitheswaran	Member
3.	Dr. A. Ananda Kumar	Member
4.	Dr. V. Subramanian	Member

5.	Dr. R. Thyagarajan	Member
6.	Dr. J. Joseph Thas	Member
7.	Director, CCRAS	Member-Secretary

During the period under report, the Scientific Advisory Committee (Siddha) met on 13.12.96 and evaluated the programme and provided necessary guidance.

Organisational - Network of CCRAS

There are 5 Central Research Institutes, 7 Regional Research Institutes, 10 Regional Research Centres, 27 Research Units, 7 Tribal Health Care Research Projects, one Documentation and Publication Division, 12 Family Welfare Research Projects and one Research Project on Tibetan Medicines functioning under Ayurveda besides one Central Research Institute, one Regional Research Institute, 10 Research Units, two Tribal Health Care Research Projects and one Siddha Medicinal Plants Garden in Siddha System of Medicines.

Budget Provision

The following Table shows the budgetary provisions made for the Council at a glance:

Scheme	Budget estimates 1996-97	Funds released 1996-97	Actual exp. 1996-97
Plan	320.00	298.33	277.86
Non- Plan	864.00	985.67	961.47
F.W.R.S.	24.00	18.00	27.38

Audited Statement of Accounts

The Accounts of the Council for the year 1996-97 for the period from Ist April, 1996 to 31st March, 1997 is being taken up by the D.A.C.R.

Workshops

The Council has organised two Workshops on Slipada from 22nd to 23rd April, 96 at Bhubaneshwar, Orissa and another on Tamaka Swasa at IIK, Patiala on 13th & 14th March, 1997.

TECHNICAL REPORT- AYURVEDA

Abbreviations used for Institutes/Centres/Units

S. No.	Institutes/Centres/Units	Abbreviations
1.	Central Research Institute (Ay.), New Delhi	CRID
2.	Central Research Institute (Ay.), Bhubaneshwar	CRIBh
3.	Central Research Institute (Ay.), Mumbai	CRIM
4.	Indian Institute of Kayachikitsa, Patiala	IIKP
5.	Indian Institute of Panchakarma, Cheruthuruthy	IIPC
6.	Regional Research Institute (Ay.), Calcutta	RRIC
7.	Regional Research Institute (Ay.), Patna	RRIP
8.	Regional Research Institute (Ay.), Lucknow	RRIL
9.	Regional Research Institute (Ay.), Gwalior	RRIG
10.	Regional Research Institute (Ay.), Jaipur	RRIJ
11.	Regional Research Institute (Ay.), Junagarh	RRIJu
12.	Regional Research Institute (Ay.), Trivandrum	RRIT
13.	Regional Research Centre (Ay.), New Itanagar	RRCI
14.	Regional Research Centre (Ay.), Guwahati	RRCGu
15.	Regional Research Centre (Ay.), Gangtok	RRCG
16.	Regional Research Centre (Ay.), Mandi	RRCM
17.	Regional Research Centre (Ay.), Jammu	RRCJ
18.	Regional Research Centre (Ay.), Hastinapur	RRCH
19.	Regional Research Centre (Ay.), Jhansi	RRCJh
20.	Regional Research Centre (Ay.). Nagpur	RRCN
21.	Regional Research Centre (Ay.), Vijayawada	RRCV
22.	Regional Research Centre (Ay.), Bangalore	RRCB
23.	Mobile Clinical Research Unit, Varanasi	MCRUV
24.	Mobile Clinical Research Unit, Jamnagar	MCRUJ
25.	Dr. A. Lakshmipati Research Centre for Ayurveda, V.H.S., Chennai	ALRCAC
26.	Ayurvedic Research Unit, NIMH&NS, Bangalore	ARUB
27.	Clinical Research Unit (Ay.), Hyderabad	CRUH
28.	Clinical Research Unit (Ay.), Kottakkal	CRUK

29.	Clinical Research Unit (Ayurvedic and Modern Team under CDRS), Varanasi	CDRSV
30.	Indian Institute for Ayurvedic Drug Research, Tarikhet	IIADRT
31.	Captain Srinivasamurthy Drug Research Institute for Ayurveda, Chennai	CSMDRIAC
32.	Jawahar Lal Nehru Ayurvedic Medicinal Plants Garden & Herbarium, Pune	JNAMPGHP
33.	Clinical Research Unit under FWRP, Patiala	CRUFP
34.	Clinical Research Unit under FWRP, Mumbai	CRUFM
35.	Clinical Research Unit under FWRP, Lucknow	CRUFL
36.	Clinical Research Unit under FWRP, Jaipur	CRUFJ
37.	Clinical Research Unit under FWRP, Calcutta	CRUFC
38.	Clinical Research Unit under FWRP, Ahmedabad	CRUFA
39.	Clinical Research Unit under FWRP, Trivandrum	CRUFT
40.	Clinical Research Unit under FWRP, Varanasi	CRUFV
41.	Pharmacological Research Unit under FWRP, Jamnagar	PhRUFJ
42.	Pharmacological Research Unit under FWRP, Varanasi	PhRUFV
43.	Pharmacological Research Unit under FWRP, Bhubaneshwar	PhRUFBh
44.	Pharmacological Research Unit under FWRP, Trivandrum	PhRUFT
45.	Pharmacological Research Unit, Calcutta	PhRUC
46.	Pharmacological Research Unit, Lucknow	PhRUL
47.	Pharmacological Research Unit, Jodhpur	PhRUJ
48.	Pharmacological Research Unit, Varanasi	PhRUV
49.	Pharmacological Research Unit, New Delhi	PhRUD
50.	Pharmacological Research Unit, Trivandrum	PhRUT
51.	Toxicity Research Unit, Jhansi	TRUJh
52.	Chemical Research Unit, Calcutta	ChRUC
53.	Chemical Research Unit, Varanasi	ChRUV
54.	Chemical Research Unit, Hyderabad	ChRUH
55.	Chemical Research Enquiry, Lucknow	ChREL
56.	Pharmacognosy Research Unit, Calcutta	PcRUC
57.	Pharmacognosy Research Unit, Pune	PcRUP
58.	Indian Institute of History of Medicine, Hyderabad	IIHMH
59.	Literary Research Unit, Chennai	LRUC
60.	Documentation and Publication Division, New Delhi	DPDD

61.	Tribal Health Care Research Project (Ay.), Car-Nicobar	THCRPC
62.	Tribal Health Care Research Project (Ay.), Ziro	THCRPZ
63.	Tribal Health Care Research Project (Ay.), Palamau	THCRPP
64.	Tribal Health Care Research Project (Ay.), Jhabua	THCRPJ
65.	Tribal Health Care Research Project (Ay.), Chinchapada	THCRPCH
66.	Tribal Health Care Research Project (Ay.) Jagdalpur (M.P.)	THCRPJa
67.	Tribal Health Care Research Project (Ay.), Imphal (Manipur)	THCRPI
68.	Drug Standardisation Research Project, Jamnagar	DSRPJ
69.	Drug Standardisation Research Project, Varanasi	DSRPV
70.	Research Project in Tibetan System of Medicine, Leh	RPTSML
71.	Medicinal Plant Garden at RRC, Itanagar	MPGI

CLINICAL RESEARCH PROGRAMMES

As per established norms, the bio-medical research is based on the Clinical Research Studies since it deals generally with the human subjects for upkeeping their health and for the treatment of their ailments. Its relevance is more essential with reference to Ayurveda because the Ayurveda, the Science of Life, directly deals with Clinical observations and patients-physician relationship since time immemorial. The Clinical Research Programmes under the Council have been bifurcated into two categories: i) Clinical Evaluation of Selected drugs/therapies in about 30 different clinical conditions and ii) Community based Health Care Research Programmes. The Health Care Research Programme include Survey, Surveillance, Community Heatlh Care and Tribal Health Care Research Programmes.

(a) Clinical Trials

The main objective of the Council is to evolve effective and safe remedies for the management of certain clinical conditions/chronic diseases through its Institutes/Centres/Units conducting clinical research programmes. For the last 2½ decades some of the significant achievements, under this Programme, were made viz. the safe and effective treatment for Vishamajvara (Malaria) with Ayush-64, Apasmara (Epilepsy) with Ayush-56, Kitibha (Psoriasis) with Nimbtiktam and Oil 777, Parinamashoola with Indukanta-Ghrita, Nimbtiktam and Amashaya-Prakshalan, Bhagandara (Fistula-in-ano) with Kshar Sutra, Vatavyadhi (Neuro-muscular disorder) with Panchkarma therapy etc.

In order to obtain statistically significant data, the studies were planned suitably. Initially during the year 1978, a Programme Projection was formulated which was suitably modified and reshaped in the years 1983, 1986 and 1992. The present on-going Programme Projection (1992-97) was finalised and implemented after extensive discussion/deliberations held in the co-ordination Sub-Committtee of SAC (Ay.). There are about 30 diseases selected for the Clinical Research Studies under the on-going

Programme Projection. The trial drugs selected for the studies were considered with regards to their references in classical text as well as their therapeutic values based on the experiences of Ayurvedic practitioners/ Members of SAC (Ay.). In order to evaluate the efficacy of the drugs, more than one therapy/drug have been considered for each single trial. Multi central trials have also been conducted simultaneously with a common protocol of study. The trial drugs have been manufactured and supplied by the selected Pharmacies of the Institutes/Centres of the Council.

The Clinical studies on *Amavata* (Rheumatoid arthritis), *Anna dravasoola* (Gastric Ulcer), *Apasmara* (Epilepsy), *Karkata Arbuda (*Cancer), *Bhagandara*, (Fistula-in-ano), *Gridhrasi* (Sciatica), *Kampa-vata* (Parkinsonism), *Kitibha* (Psoriasis), *Kuposhana* (Malnutrition), *Madhumeha* (Diabetes mellitus), Medoroga (Lipid disorder), *Mutrasmari* (Urolithiasis), Pakshavadha (Hemiplegia), Pangu (Paraplegia), *Parinama-shoola* (Duodenal *ulcer), Slipada* (Fiiariasis), *Tamak Shwasa* (Bronchial asthma), *Vishama Jvara* (Malaria), *Vrikka-Shotha* (Nephrotic syndrome), *Vyana Bala Vaishamya* (Hypertension) etc. have been carried out during the year 1996-97. The research studies on assessment of *Prakriti* were also undertaken to assess its relationship with incidence of various diseases. The work is still under scrutiny.

***Amavata* (Rheumatoid Arthritis)**

The Council has been carrying out Clinical Research Studies on Amavata with special reference to evaluate, the effective and safe remedy for the treatment of such dreaded diseases, since its inception. During the past number of single and compound drugs have been evaluated, out of which *Sunthi Guggulu* and *Nirgundi Guggulu* in combination has shown some promising effects. The present study based on, assessment of the effect of *Pippali Vardhamana* with *Samira Pannaga Rasa* and *Mahayogaraja Guggulu* with *Simhanada Guggulu* and *Vaisvanara curna.* Another study on *Asvagandha curna* with *Eranda taila* and *Pancakarma therapy* has also been taken up. A total number of 253 patients have been studies at CRIs, Bhubaneshwar, Mumbai, New Delhi; IIK, Patiala; RRI, Gwalior and RRC, Itanagar.

Table I

Results of Clinical Studies of Ayurvedic Preparations on Amavata (Rheumatoid Arthritis)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.a)	Pippali	RRIG	05	-	-	-	04	01
	Vardhman with	CRID	38	03	11	05	03	16
	Samira Pannaga Rasa	RRCI	04	-	02	-	-	02
b)	Mahayogaraja Guggulu,	CRIBh	24	05	08	01	-	10
	Simhanada Guggulu with	CRIM	07	02	01	-	02	02
	Vaishwanara	RRIG	12	-	-	02	08	02
	Curna	RRCI	02	01	01	-	-	-
2.	Mahayogaraja Guggulu with Vaishwanara curna	IIKP	40	-	10	10	06	14
3.	Musta curna	IIKP	41	10	07	08	09	07
	Ashwagandha Kwatha	IIKP	41	06	06	05	13	11
4.	Pancakarma Therapy	IIKP	39	09	06	09	06	09
	Total		253	36	52	40	51	74

Annadrava-Shoola (Gastric Ulcer)

Combination of Eladi Curna and Amalaki Curna in one group of patients and Praval Pisti, Mukta Pisti and Jahara Mohra Pisti in another group have been studied on 237 cases of Annadrava-shoola, prior to reporting period. The studies of these combinations have been extended further at RRC, Itanagar and CRU, Hyderabad during the reporting period. 32 patients have been reported from these Centres/Institutes to be considered for evaluation during the reporting period. Their results are incorporated in the following Table No. II.

Table II

Results of Clinical Studies of Ayurvedic Preparations on Annadrava-Shoola (Gastric Ulcer)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Eladi curna with Amalaki curna	RRCI CRUH	13	-	11	-	-	02
2.	Mukta Sukti, Pravala Pisti with Jahara mohara Pisti	RRCI	11	01	02	02	-	06
		CRUH	08	-	08	-	-	-
	Total		32	01	21	02	-	08

Arsha (Piles)

The trial of *Kshara Sutra* and *Taila Varti* in the management of Arsha has already been studied on 455 patients, prior to reporting period. The same has further been allowed to continue at CRIs Mumbai and New Delhi during the reporting period. The observations on 176 cases have been reported from these Institutes, the details of which are enumerated as hereunder in Table No. III.

Table III

Results of Clinical Studies of Ayurvedic Preparations on Arsha (Piles)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Taila Varti	CRIM	05	-	05	-	-	-
2	Kshara Sootra, Apamarga	CRID	171	113	08	02	-	48
	Total		176	113	13	02	-	48

Bhagandara (Fistula-in-Ano)

221 patients of Bhagandara have already been reported, levelling significant relief in their ailing conditions with the application of "Ksharsutra". Further observations on 58 cases have been made at CRIs, Mumbai and New Delhi, during the reporting period. The observations/results made on these cases are indicated below in Table No. IV:

Table IV

Results of Clinical Studies of Ayurvedic Preparations on Bhagandara (Fistula-in-Ano)

S.No	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Kshara sootra, Apamarga	CRIM	07	03	-	-	04	-
		CRID	51	32	-	-	-	19
2.	Ksharasootra	CRID	-	-	-	-	-	-
	Total		58	35	-	-	04	19

Gridhrasi (Sciatica)

Trayodasanga Guggulu along with *Visha-Tinduk-vati* in one group and *Maharasnadi Kwatha* (int.) along with *Nirgundi Taila* (Ext.) in another group have been tried in cases of Gridhrasi and clinical data of 238 cases have been recorded, prior to reporting period. Further studies on 41 cases have been taken up at CRIs, New Delhi and Bhubneshwar, during the reporting period. The results of these cases, observed at these Institutes are shown in Table No. V:

Table V

Results of Clinical Studies of Ayurvedic Preparations on Gridhrasi (Sciatica)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Trayodasanga guggulu, Visatinduka vati	CRID CRIBh	14 11	03 01	03 02	07 02	- 05	01 01
2.	Maharasnadi kwatha (int.) Nirgundi taila	CRIBh	16	01	05	05	01	04
	Total		41	05	10	14	06	06

Hridroga (Ischaemic Heart Disease)

The efficacy of *Pushkara-guggulu* combination has already been studied in more than 351 cases of Hritshool (Angina pectoris) and in the management of post myocordial infarction cases at CDRS Unit, Varanasi. Besides studies on the trial of Arjuna Ghana Satva in 31 cases of Hridroga have also been made prior to reporting period. The observations made on 490 cases of Hridroga have been reported from CDRS, Varanasi, during the reporting period with a trial of Arjuna Twak Ghana Satva and Dashmoola Kwatha. The details of result may be viewed in Table No. VI given below:

Table Vi

Results of Clinical Studies of Ayurvedic Preparations on Hridroga (Ischaemic Heart Diseases)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Arjuna Tvak Ghana Satva	CDRSV IIKP CRID	210	60	90	40	10	10

2.	Pushkara Guggulu	IIKP CRID CDRSV	-	-	-	-	-	-
3.	Dashamoola	CDRSV	280	80	145	45	10	-
	Total		490	140	235	85	20	10

Kamala (Jaundice)

The Clinical Research Studies on Kamala with a trial of three different groups of drugs viz. Bhumyamalaki and Katuki along with Kakamaci kwatha in one group; Dhatri Lauha and Ayush- 55 along with Sarjikshar in second group; and Arogyavardhini along with Punarnava Mandur in third group have been initiated during the reporting period at Regional Research Centre, Hastinapur and the salient feature of the report pertaining to the observations and results are indicated as below in Table No. VII:

Table VII

Results of Clinical Studies of Ayurvedic Preparations on Kamala (Jaundice)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Bhumya-malaki, Katuka, Kasani, Kaka maci kwatha	RRCH	03	-	01	-	-	02
2.	Dhatri Lauha Ayush- 55 with Swarji-kshara	RRCH	07	-	02	-	-	05
3.	Arogyavar-dhini with Punarnava mandur	RRCH	29	-	07	02	-	20
	Total		39	-	10	02	-	27

Kampavata (Parkinsonism's Disease)

Generally the diseases occur in elderly people of the society and crippled them in due course of time. The trial of Kampavatari Rasa along with Bala, Ashwagandhadi kwatha and Maha Masha Taila Abhyanga was initiated in such dreaded diseases during 1992-93 at Central Research

Institute, Mumbai and 4 cases were registered for the trial. Due to some unavoidable reasons the trial could not be continued during 1993-94 and 1994-95. The trial of above said drugs in one group and Kaishore Guggulu along with Punarnava Kwatha Curna in another group was once again started during 1995-96 at Central Research Institute, Mumbai as a pilot study and two patients in each group were registered for the trial, during the reporting period. The same Institute has attempted the trial of Kampavatari Rasa, Bala-Aswagandhadi Kwatha in one group and Kampavatari Rasa, Bala Aswagandhadi Rasa along with Nirgundi Taila Adhyanga in another group for this dreaded disease and reported three cases during the reporting period. The details of results of these cases are indicated below in Table No. VIII:

Table VIII

Results of Clinical Studies of Ayurvedic Preparations on Kampavata (Parkinsonism)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Kampavatari, Rasa, Bala-asvagandhadi kwatha	CRIM	01	-	-	01	-	-
2.	Kampa vatari rasa. Bala-asvagandhadi Kwatha. Nirgundi Taila abhyanga	CRIM	02	-	01	01	-	-
	Total		03	-	01	02	-	-

Karkatarbuda (Cancer)

The studies on the trial of phytochemical compounds like Plumbagin and SGT in two different groups have already been carried out on 48 patients of different types of Cancer (Karkatarbuda). Further studies on 5 patients pertaining to Group-B (SGT) was continued at CRI, Delhi, during the reporting period.

Khanja (Monoplegia)

The trial of Ekangavira Rasa along with Maha Masha Taila Abhyanga along with Sastika-Sali Pinda Sweda has been initiated at IIP, Cheruthuruthy, during the reporting period and one case was taken for trial which shows indifferent response.

Kitibha (Psoriasis)

To establish the relative therapeutic efficacy of Arogyavardhini and Cakra Marda Kera Taila in one group, Nimbtiktam and Lajjalu Kera Taila in another group was considered and as such the research studies were conducted on 415 cases of Kitibha (Psoriasis) prior to reporting period. Besides, 10 cases were also reported with the trial of Kaishore Guggulu and Vishvamitra Kapala Taila at Regional Research Institute, Trivandrum during 1995-96. The observation and results of 50 cases taken under three different groups at CRI, New Delhi and RRIs, Trivandum and Junagarh are indicated in the forthcoming Table No. IX:

Table IX

Results of Clinical Studies of Ayurvedic Preparations on Kitibha (Psoriasis)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Kaishora Guggulu, Vishvamitra kapala Taila	RRIT	02	-	01	-	01	-
		RRIJu	02	-	-	01	01	-
2.	Nimbatiktam with Lajjalu kera	CRID	09	-	01	-	02	06
		RRIT	22	04	10	03	03	02
		RRIJu	07	01	01	02	01	02
3.	Arogyavar-dhini with Chakramarda kera	RRIT	08	-	04	02	01	01
	Total		50	05	17	08	09	11

Kuposana (Mal-nutrition)

Kuposana is one of the National problem in our country. Therefore, in order to assess the efficacy of certain Ayurvedic drugs selected in certain clinical conditions was considered and as such Aswagandha, Shatavari and Amalaki were taken in one group of cases and Aswagandha Lehya in another group of cases at Regional Research Centres, Nagpur, Mandi and Bangalore. 118 cases have already been reported previously. The studies were being continued at Regional Research Centres, Mandi and Bangalore during the reporting period and as such 49 patients were taken for study. The details of the results are indicated below in Table No. X:

Table X

Results of Clinical Studies of Ayurvedic Preparations on Kuposana (Malnutrition)

S:No	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Amalaki Satavari & Aswagandha	RRCM	29	02	07	02	03	15
		RRCB	10	09	-	-	-	01
2.	Aswagandha Lehya	RRCB	10	09	-	-	-	01
	Total		49	20	07	02	03	17

Madhumeha (Diabetes mellitus)

Some of the drugs known for their anti-diabetic effects e.g. Bimbi, Bilva Patra, Mamajjaka and Ayush-82 have already been screened to assess their therapeutic efficacy in the management of Madhumeha and as such 640 cases were treated with varying degree of response. During the reporting period 116 cases of Madhumeha were treated at CRIs, Mumbai and New Delhi; IIK, Patiala; ALRCA, Chennai. The details of the results observed, are indicated in Table No. XI:

Table XI

Results of Clinical Studies of Ayurvedic Preparations on Madhumeha (Diabetes mellitus)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Ayush 82	IIKP	10	-	01	05	-	04
		CRID	49	08	12	11	08	10
2.	Chandra-Prabha Vati	IIKP	22	-	04	06	02	10
		CRIM	13	-	-	01	02	10
3.	Methika Curna	IIKP	10	-	-	04	-	06
		ALRCAC	12	-	04	02	01	05
	Total		116	08	21	29	13	45

Manas Mandata (Mental Retardation)

Asyush-8, a coded drug evolved by the Council was screened earlier in 85 patients of Manas Mandata at ALRCA, Chennai prior to reporting period. During the year 1996-97 only one case was taken up for the study which showed indifferent response.

Medoroga (Lipid Disorders)

The drug Guggulu, Arogyavardhini and AYUSH-55 were screened in the cases of obesity/hyper-lipidemia with varying degree of response. During the reporting period, Vyosadi Guggulu was allotted to CRIs, New Delhi, Mumbai and ALRCA, Chennai to assess its efficacy in Medoroga. In all 39 cases were screened. The details of the results observed, are given below in Table No. XII:

Table XII

Results of Clinical Studies of Ayurvedic Preparations on Medoroga (Lipid disorders)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Vyosadi Guggulu	CRID	20	-	02	09	04	05
		CRIM	13	-	-	05	-	08
		ALRCAC	06	-	03	01	01	01
	Total		39	-	05	15	05	14

Mutrasmari (Urolithiasis)

The therapeutic responses of Varuna, Kulatha and Gokshuru were studied earlier in the cases of Mutrasmari under this Council's Institutions and the comprehensive monograph was published. The study on Mutrasmari was further initiated with administering Sweta Parpati, Kulatha, Pashana Bheda and Gokshuru Kwatha together in one group and Palasa Kshara in another group of the cases suffering from Mutrasmari. In all 294 cases were screened with significant response of the therapy during prior to reporting period. During the year 1996-97, 32 cases on Mutrasmari were treated with Palasa Kshara at IIK, Patiala and CRI, New Delhi. The results are indicated below in Table No. XIII:

Table XIII

Results of Clinical Studies of Ayurvedic Preparations on Mutrasmari (Urolithiasis)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Palasha kshara	IIKP	04	-	-	01	02	01
		CRID	28	06	07	06	03	06
	Total		32	06	07	07	05	07

Pakshaghat (Hemiplegia)

Prior to reporting period 710 cases of Pakshaghat were treated with Ekangavira Rasa, Samira Pannaga Rasa, Snehana and Sastika Sali Pinda Sweda, besides, exclusively with Pancakarma Therapy. During the year under report 3 different group of cases were treated with Samira Pannaga Rasa, Nirgundi Taila and Sali Dhanya Pinda Sweda. The second group of the patients were treated wtih Ekangavira Rasa, Nirgundi Taila and Sali Dhanya Pinda Sweda. The third group was not given any internal medicine and they were exclusively treated with classical Pancakarma therapy. In all 121 cases were treated. The details of the observations/results are given below in Table No. XIV:

Table XIV

Results of Clinical Studies of Ayurvedic Preparations on Pakshaghata (Hemiplegia)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Samira Pan naga Rasa, Nirgundi Taila	IIKP	07	01	02	-	-	04
		IIPC	25	04	04	11	03	03
	Abhyanga & Salidhanya Pinda Sveda	CRIBh	11	03	03	01	01	03
		CRIM	05	-	-	-	01	04

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
2.	Ekanga Veera Rasa, Nirgundi Taila	IIKP	12	01	04	01	-	06
		IIPC	33	03	05	15	07	03
	Abhyanga & Salidhanya	CRIBh	02	01	01	-	-	-
	Pinda Sveda	CRIM	08	-	-	03	02	03
3.	Pancakarma (Exclusively)	IIPC	18	-	01	06	09	02
	Total		121	13	20	37	23	28

Pangu (Paraplegia)

100 cases suffering with Pangu were treated in two different groups. In one group the Gorocanadi Gutika and Ashwagandha Taila Abhyanga was administered while in another group Pancakarma Therapy was administered exclusively. In addition of there two groups another group of the patients was treated with *Ekangavira Rasa, Eranda Taila* (Int.) and *Maha Masha Taila* (Ext.) in all 53 cases were screened during the period under report. The details of the results are given below in Table No. XV.:

Table XV

Results of Clinical Studies of Ayurvedic Preparations on Pangu (Paraplegia)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Pancakarma Chikitsa	IIPC	12	02	-	01	06	03
2.	Gorocanadi Gutika	IIPC	26	03	05	09	06	03
3.	Ekangavira Rasa with Eranda Taila (internal) & Mahamasha Taila (external)	IIPC	15	02	02	05	03	03
	Total		53	07	07	15	15	09

Study on Rasayana/Medhya Rasayana Dravya

In the past, 31 elderly human volunteers were considered for screening of Rasayana effect of Shatavari, Punarnava, Bala, Guduci and Yasti. Another study on Jyotismati, Shankhapushpi, Brahmi and Grunjana were also taken up in 13 volunteers at IIK, Patiala and ALRCA, Chennai to establish their efficacy as a *Medhya Rasayana*. During the reporting period only 7 volunteers, were being giving these drugs out of 7 volunteers, 4 have shown fair response and three left the study in between.

Satata Jvara (Kala-a-zar)

Regional Research Institute, Patna has carried out the detailed clinical studies on 159 cases of Kala-a-zar to establish the efficacy of *Mukta Vidru Manjana Rasa, Lok Nath Rasa, Javarasni Rasa* and *Sarva Jvara Hara Lauha*. During the reporting period the said Institute has screened only 3 new cases which were considered as dropped out cases.

Shirah-Shoola /Aradhavebhedak (Migraine)

26 Cases suffering with Shirah-Shoola were screened earlier with Varunadi Ksheera Paka-Nasya at ALRCA, Chennai. During the year 1996-97 only 14 cases of Shihrah-Shoola have been studied. The details of observations/results are indicated below in Table No. XVI:

Table XVI

Results of Clinical Studies of Ayurvedic Preparations on Shirah-Shoola (Migraine)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Varunadi Ksheera Paka Nasya	ALRCAC	14	-	09	-	01	04
	Total		14	-	09	-	01	04

Parinama-Shoola (Duodenal Ulcer)

About 1000 cases which were suffereing from Parinama-Shoola were treated earlier with Suta-Shekhara Rasa, Shatavari, Indukanta-Ghrita, Mahatikta-Ghrita and Amashaya-Prakshalana with Varuna/Bilwa leaves decoction. Besides Mahatikta-Ghrita, Indukanta-Ghrita along with

Nimbtiktam, Amalaki Rasayana and Amashaya-Praskalana was also tried in 188 cases during the year 1994-95 at CRI, Bhubneshwar; IIP, Cheruthuruthy; RRI, Trivandrum and CRUs Kottakal and Hyderabad prior to reporting period.

The present study consists of 55 cases treated with the above noted drugs in the Institutes/Centres/Units referred above. The details of the observations and results are given below in Table No. XVII:

Table XVII

Results of Clinical Studies of Ayurvedic Preparations on Parinama-shoola (Duodenal Ulcer)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1. a)	Nimbatiktam	CRIBh	04	02	01	-	-	01
b)	Amalaki	CRUK	06	02	02	01	-	01
	Rasayana	CRIBh	06	05	-	01	-	-
2. a)	Indukanta	RRIT	01	-	-	-	-	01
	Ghrita,	CRUK	03	01	-	02	-	-
	Snehana	CRUH	05	-	05	-	-	-
b)	Mahatikta Ghritam	CRUK	04	01	01	02	-	-
		CRUH	05	-	03	-	-	02
c)	Amashaya Prakshalana with Bilva Patra kwatha	CRUH	21	-	17	-	01	03
	Total		55	11	29	06	01	08

Slipada (Filariasis)

Earlier the Council has taken up the Clinical Research studies on about 299 chronic cases of Slipada with menifested sequally were treated with Sudarshana Ghana Vati, Arogyavardhini and Punarnava Kwatha, besides, the clinical screeing of Saptaparna-Ghana-Vati and Ayush-64 was also conducted on 31 cases of microfilaremia prior to reporting period. 101 cases of menifested Slipada and 10 cases of microfilaremia were being considered for clinical trial with the above referred drugs during the period under report. The details are given below in Table No. XVIII:

Table XVIII

Results of Clinical Studies of Ayurvedic Preparations on Slipada (Filariasis)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
A.	**Manifested Disease**							
1.	Sudarsan Ghana vati, Ayush-55 & Punarnava-rista	CRIBh	04	-	04	-	-	-
		RRIP	-	-	-	-	-	-
		RRCV	34	05	08	13	02	06
2.	S.G. vati with Punarnavarista	CRIBh	24	08	08	01	-	07
3.	Sudarsan Ghana Vati Ayush-55 Punarnava-rista & Agnikarma	RRCN	09	-	02	02	01	04
4.	S.G. vati, Arogyavar-dhini, & Punarnavarista	CRIBh	30	09	15	05	01	-
B.	**Microfilaremia**							
1.	Ayush-64	RRCV	07	03	03	-	-	01
2.	Saptaparna-Ghana Vati	RRCV	03	-	03	-	-	-
	Total		111	25	43	21	04	18

Tamaka Shwasa (Bronchial Asthma)

In order to establish the relative therapeutic effects of Somalatadi Yoga and Bhagottara Gutika, 800 cases of Tamaka Shwasa were considered earlier for clinical trial. From the study it was observed that Bhagottara Gutika is relatively more effective in the management of Tamaka Shwasa. Another study was also conducted during the period 1992-93 and 502 cases of Tamaka Shwasa were treated with Pippali Vardhaman, Samira Pannaga Rasa, Shirisa Twaka Kwatha with varying degree of response.

The present study consists of 248 cases of Tamka Shwasa, which were treated with Somlatha Curna, Haridra Khanda, Talisadi Curna, Arujunarishta, Pippali Vardhaman Ksheera Paka with Samira Pannaga Rasa, Sirisa Twaka Kwatha, Anantamool Svarasa at IIK, Patiala; RRC, Vijayawada and RRIs, Junagarh, Patna. The details of the results are indicated below in Table No. XIX:

Table XIX

Results of Clinical Studies of Ayurvedic Preparations on Tamaka Shwasa (Bronchial Asthma)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Pippali Vardhman Ksheera Paka, with Samira Pannaga Rasa	IIKP RRIJu RRIP RRCV RRCB	11 10 04	- - -	- 03 01	05 02 01	02 04 -	04 01 02
2.	Sirisa Twaka Kwatha	IIKP RRIJu RRIP	28 10 18	- - 03	08 02 06	09 01 06	06 04 03	05 03 -
3.	Anantamoola Swarasa	IIKP RRCV	04 03	- 01	01 -	01 -	01 -	01 02
4.	Haridra-khanda, Talisadi Curna, Arjunarista & Somlatha Curna	RRIP RRIP	113 47	20 -	50 06	17 13	12 -	14 28
	Total		248	24	77	55	32	60

Timira Roga (Errors of Refraction)

The detailed studies on some of the Ayurvedic preparations known for their efficacy in the management of Errors of Refraction were screened earlier under the Council and a monograph was published. The present study consists of 60 cases suffering from various types of Errors of

Refraction, they were given Saptamrita Lauha at CRI, New Delhi. The details are indicated below in Table No. XX:

Table XX

Results of Clinical Studies of Ayurvedic Preparations on Timira Roga (Errors of Refraction)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Saptamrita Lauha	CRID	60	09	11	12	12	16
	Total		60	09	11	12	12	16

Vishamajvara (Malaria)

5055 cases of Vishamajvara were screened clinically and with the help of the battery of laboratory to establish antimalarial effect of Ayush-64. A monograph consisting all the viable datas and relevant observations, was published.

The present study consists of 173 cases of Vishamajvara. Their peripheral blood was smear not taken for confirming malarial parasites. These cases were treated with Ayush-64 under one group and Parijata Ghana Vati under another group. The details are indicated below in the Table No. XXI:

Table XXI

Results of Clinical Studies of Ayurvedic Preparations on Vishamajvara (Malaria)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Ayush-64	RRIJ	140	71	27	38	04	-
		RRCH	31	-	06	06	19	-
2.	Parijata ghana vati	RRCH	02	-	02	-	-	-
	Total		173	71	35	44	23	-

Vrikka Shotha (Nephrotic Syndrome)

Purnarnava and Trinapanca Moola were administered in the cases of Vrikka Shotha to establish their efficacy in the management of such cases and as such 42 cases were screened earlier.

The present studies consists of 770 cases, which were treated with the drugs referred above. The details of the results are indicated in Table No. XXII:

Table XXII

Results of Clinical Studies of Ayurvedic Preparations on Vrikka Sotha (Nephrotic Syndrome)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Punarnava	CRUV	250	75	130	45	-	-
2.	Trinapanca-moola	CRUV	220	50	115	50	05	-
3.	Punarnava Trinacapanca mool	CRUV	300	102	155	38	05	-
	Total		770	227	400	133	10	-

Vyana Bala Vaisamya (Hypertension)

Relative anti-hypertensive activities of Tagaradi Curna and Arjuna Jatanamsi in one group and Usiradi Curna and Arjuna Jatamansi in another group of the cases were screened in 596 cases of Vyana Bala Vaisamya prior to the present report.

During the reporting period 131 patients were studied at CRIs, New Delhi and Mumbai; RRI, Calcutta; RRC. Itanagar and Mandi with the drugs referred above. The details of the results are indicated below in Table No. XXIII:

Table XXIII

Results of Clinical Studies of Ayurvedic Preparations on Vyanabala Vaisamya (Hypertension)

S.No.	Trial Therapy	Instt./ Centre	Total cases	Results				
				Good resp.	Fair resp.	Poor resp.	No resp.	Drop out
1.	Tagaradi curna,	RRIC	16	05	01	-	-	10
	Arjuna	RRCM	33	05	08	08	-	12
	Jatamansi	RRCI	08	-	03	01	01	03
2.	Usiradi curna,	CRID	29	04	03	09	03	10
	Jatamansi	RRCM	29	02	06	07	01	13
	Arjuna	RRCI	13	01	04	02	03	03
		CRIM	03	01	-	-	-	02
	Total		131	18	25	27	08	53

(b). Disease Groups, Number of Patients and Participating Projects Under Clinical Research Programmes During 1996-97

S.No.	Diseases Groupwise	Pts. Nos.	Participating Projects
1.	Vata vyadhi		
	i) Amavata	253	CRIBh, IIKP, CRIM, RRIG, RRCI, CRID
	ii) Paksaghata	121	IIPC, IIKP, CRIBh, CRIM
	iii) Gridhrasi	41	CRIBh, CRID
	iv) Pangu	53	IIPC
	v) Kampavata	03	CRIM
	vi) Khanja	01	IIPC
2	Anna-Vaha Srotas Vyadhi		
	i) Parinamsula	55	CRIBh, RRIT, CRUH, CRUK
	ii) Annadravasoola	32	RRCI, CRUH
	iii) Arsa	176	CRIM, CRID
	iv) Bhagandara	58	CRID, CRIM
	v) Kamala	39	RRCH
3.	Tamaka Shwasa	248	RRCV, IIKP, RRIP, RRIJu
4.	Mutra- Roga		
	i) Madhumeha	116	IIKP, CRIM, ALRCAC, CRID
	ii) Mutrasmari	32	CRID, IIKP
	iii) Vrikka- Shotha	770	CRUV
5.	Medo-roga	39	CRID, ALRCAC, CRIM
6.	Hridroga	490	CRUV
7.	Vyana- Bala- Vaisamya	131	CRID, CRIM, RRIC, RRCI, RRCM
8.	Vishama -jvara	173	RRIJ, RRCH
9.	Satata-Jvara (Kalazar)	03	RRIP
10.	Slipada	111	CRIBh, RRCV, RRCN
11	Twaka- Roga		
	i) Kitibha	50	RRIT, RRIJu, CRID

S.No.	Diseases Groupwise	Pts. Nos.	Participating Projects
12.	Manas -Roga		
	i) Manas Mandata	01	ARUB
13.	Medhya- Rasayana	07	ALRCAC
14.	Other Diseases		
	i) Karkatarbuda	05	CRID
	ii) Kuposhana	49	RRCM, RRCB
	iii) Sirah Soola	14	ALRCAC
	iv) Timira-roga	60	CRID

C- Statement Showing Number of Patients Attended at O.P.D. and Admitted in I.P.D. during 1996-97

S.No.	Institute/Centre	OPD Patients			IPD Patients		
		New	Old	Total	Admit-	Disch-arged	Bed occup ancy %
1.	CRI, Delhi	12791	13847	26638	222	216	28.56
2.	CRI, Bhubaneshwar	7363	8248	15611	211	202	35.00
3.	CRI, Mumbai	1857	6229	8086	79	74	13.00
4.	IIK, Patiala	5162	5339	10501	263	263	34.15
5.	IIP, Cheruthuruthy	22514	20244	42758	239	239	58.38
6.	RRI, Lucknow	6043	7195	13238	37	36	10.25
7.	RRI, Calcutta	3331	10969	14300	IPD held up due to collapsed condition of the Building of old premises.		
8.	RRI, Junagarh	3019	3398	6417	11	11	2.59
9.	RRI, Patna	7346	10460	17806	114	114	Not reported
10.	RRI, Gwalior	-	-	782	24	24	20.70
11.	RRI, Trivandrum	1061	10500	11561	79	115	N.R.
12.	RRI, Jaipur	2677	993	3670	31	39	37.69
13.	RRC, Nagpur	2508	4395	6903	-	-	-
14.	RRC, Bangalore	1395	4732	6127	-	-	-
15.	RRC, Jammu	5940	9680	15620	-	-	-
16.	RRC, Mandi	6696	4740	11436	76	80	29.91
17.	RRC, Hastinapur	7369	10542	17911	43	41	18.7
18.	RRC, Gangtok	4265	3164	7429	-	-	-
19.	RRC, Vijaywada	3480	3532	7012	48	51	31.78
20.	RRC, Itanagar	5448	8322	13770	15	15	10.08
21.	ALRCA, Chennai	326	704	1030	-	-	-
22.	ARU, Bangalore	635	753	1388	19	17	47.63

S.No.	Institute/Centre	OPD Patients			IPD Patients		
		New	Old	Total	Admit-	Disch-arged	Bed occup ancy %
23.	CRU, Kottakal	-	-	-	120	126	41.2
24.	CRU, Hyderabad	-	-	-	91	92	-
	Total	1,11,226	1,47,986	2,59,994	1,722	1,492	-

(d). Health Care Research Programme

There are three types of field level Clinical Research Programmes, run by the Council viz. i) Survey and Surveillance Programme, ii) Community Health Care Research Programme mostly attached with CRIs, RRIs and RRCs under broad term "Mobile Clinical Research" and iii) Tribal Health Care Research Programmes, located in Tribal population, dominated areas of the country. These Units are equipped with a mobile van or jeep, a physician and ancillary staff who periodically visit villages/tribal areas to conduct research studies. These units provide medical aid at their doorstep and at the same time they recorded their health statistics, e.g. the incidence of diseases and local health care practices which is traditionally safe guarding their health for centuries. The units also impart knowledge about principles of health & hygiene in the villages where it works. Efforts are made to collect folk medical practices and locate valuable manuscripts etc. if it comes to the knowledge of research workers while interacting with the village community.

I. Servies Oriented Survey & Surveillance Research Programme

The data regarding socio-economic status, incidence of diseases and their relationship with various etiological factors are compiled from the villages selected randomly. The folklore medical practices are also noted. During the period under report 23 villages with a population of 40,240 were surveyed and 8,241 patients were treated with Ayurvedic drugs.

II. Community Health Care Research Programme:

Each of the Institutes/Centres has been assigned a few villages, in the nearby areas under this Programme. The knowledge about health care, prevention of diseases, health promotive measures and use of local herbs for treatment of common ailments is imparted to the people of villages included under the programme. The details of socio-economic status, environmental factors influence the incidence of the disease are recorded. This programme has been executed in 27 villages with a population of 32773 and 7,191 patients have also been provided incidental medical aid.

III. Trial Health Care Research Programme:

This programme has been initiated with the aim and objects to study the living conditions of tribal people, folk medicines used by them, availability of medicinal plants of the area, propagation of knowledge about oral hygience, prevention of diseases, use of common medicinal plants of the area and to provide medical aid at their door steps. This programme has been continued

further by the Tribal Health Care Research Projects functioning at Car Nicobar (Andaman Nicobar Islands), Jammune (Dist. Palamau), Chinchapada-Dule (Maharashtra), Jagdalpur (Madhya Pradesh), Jhabua (M.P.), Imphal (Manipur), Ziro (Arunachal Pradesh). 21 villages consisting, population of 30,137 individuals have been covered and incidental medical aid extended to 16,117 patients during the reporting period.

Service Oriented Survey & Surveillance Screening Research Programme

S.No.	Institute/ Units	Name of the Villages	Population covered (Approx.)	No. of Patients treated	Common Diseases
1.	CRIA- Delhi	Manjari Mochammadpur	-	272	Pratisyaya, Ajirna, Amvata Amlapitta, Sotha, Kasa.
2.	IIP- Cheruthuruthy	Mayannur Nelluvaya	3599	1091	Vatavikar, Sandhisula, Twakaroga, Kasa, Jvara, Udarasula.
3.	RRI- Gwalior	Jigsoli, Bilpura	2600	553	Jvara, Vrana, Pratisyaya Atisara, Visamajvara, Kandu, Kasa.
4.	RRI -Junagarh	Navagam	942	53	Twakadosa, Ajirna, Sandhivata, Amplapitta.
5.	RRI- Lcuknow	Paikramau	5000	877	Atisara, Jvara, Twaka roga, Kasa, Vatavyadhi.
6.	RRI-Patna	Saidpur gonesh, Bhiropur	2371	1089	Atisara, Kasa, Krimi, Pravahika Vrana, Twakaroga.
7.	RRC- Bangalore	Naganayakan Halli	1500	768	Kasa, Vatavyadhi, Jvara, Pandu, Vrana, Udarsula.

S.No.	Institute/ Centre/Unit	Name of the Villages	Population	No. of Patients attended	Common Diseases
8.	RRC- Gvwahati	Dolibari	1,000	416	Common diseases
9.	RRC- Jammu	Migrant camp at Muthi Ph. I&II	3,188	222	Raktacapa, Amlapitta, Pandu, Yakrtavikar Tvakaroga.
10.	RRC- Jhansi	Madora	1100	155	Jvara, Kasa, Jvara-kasa, Twakaroga, Visamajvara.
11.	RRC- Mandi	Mathiuli, Sillhakipper	352	95	Jvara, Amlapitta Amavata, Kasa Pratisyaya, Pravahika.
12.	RRC -Nagpur	Digdoha, Chicholi	4,919	339	Visamajvara, Vrana, Pratisyaya, Krimi, Kasa.
13.	RRC -Vijayawada	Godavalli Kottur	2,925	1,417	Kasa, Jvara Atisara, Daurbalyata, Sandhivata, Vatavyadhi.
14.	MCRU- Jamnagar	Navagamghed	3,744	94	Jvara, Pratisyaya, Udarasula, Karna, Srava, Swasa.
15.	MCRU-Varanasi	Fatterpur Dahiyawa	7,000	800	Pravahika Striroga, Krimi, Atisara, Sandhisotha Pandu.
	Total	23	40,240	8241	

Community Health Care Research Programme

S.No.	Institute/ Units	Name of the Villages	Population covered (Approx.)	No. of Patients treated.	Common Diseases
1.	CRHA Mumbai	Pratishtadevi Bhingari	500	416	Pratisyaya Kasa, Vatavyadhi. Sandhisula, Agnimandya.
2.	RRC Cheruthuruthy	Piralur, Mundathicode		762	Common diseases
3.	RRI Gwalior	Rampura.	2,600	381	Vrana, Kandu, Udararoga Jvara, Pratisyaya, Kasa.
4.	RRI -Junagarh	Chokali Gopalgadh	1,086	61	Common diseases
5.	RRI- Patna	Pakauli	919	374	Kasa, Krimi, Jvara Atisara, Katisula, Pravahika Svasa
6.	RRC Bangalore	Obenudana halli Vaderhalli	2,000	419	Vrana, Kasa, Vatavyadhi. Jvara, Udarasula,
7.	RRC Gangtok	Rumtek	1,656	135	Daurbalyata, Jvara, Twakaroga, Adhman.
8.	RRC -Guwahati	Rodhala	5,000	191	Common diseases
9.	RRC- Itanagar	Pama	1,000	1,157	Kasa, Jvara, Atisar, Twakaroga, Udarasula, Visamajvara, Amlapitta.

S.No.	Institute/ Units	Name of the Villages	Population covered (Approx.)	No. of Patients treated.	Common Diseases
10.	RRC-Jammu	Keran	200	15	Pratisyaya, Twakaroga, Pandu
11.	RRC-Jhansi	Meri	2,000	165	Atisara, Pandu Jvara, Sweta Pradar, Udarasula.
12.	RRC- Mandi	Majhawar	466	340	Krimi, Pratisyaya, kasa Pradara.
13.	RRC-Nagpur	Dhaba, Dagma	3,880	230	Visamajwara, Pratisyaya, Kasa, Vatavyadhi.
14.	RRC- Vijaywada	Velpuru Phiryadi-nainavarma	2,778	1,904	Kasa, Pradara, Jvara, Swasa Twakaroga, Rajodosa Atisara.
15.	ALRCA-Chennai	Tharapakkam village, Therapakkam colony, Pettai, Seevaram, Muttakaram Chavadi, Mettukuppam	8,688	681	Vatavyadhi, Kasa, Twakaroga, Amlapitta, Sweta Pradara.
	Total	27	32,773	7,231	

Tribal Health Care Research Programme

S.No.	Unit location	Tribal Villages/ pockets covered	Population covered (Approx.)	No. of Patients treated	Common Diseases
1.	THCRP -Car Nicobar	Car-Nicobar	3,322	3,322	Swasa, Sandhisula, Twakaroga, Raktacapa, Vatavyadhi, Visama, Jvara.
2.	THCRP - Chinchapada	Chouki (4 pocket) Nagzhiri (6 pockets) Bandharapada, Vadsatra, Mahalkadu (and Unit HQ)	9646	4,512	Jvara, Visam-Jvara, Pandu, Kasa, Udarasula Atisara.
3.	THCRP -Imphal	Imphal Hq.	-	1,865	Sandhivata, Kasa, Twakroga, Amavata, Amlapitta, Nasaroga. Swasa.
4.	THCRP- Jagdalpur	Agahanpur & HQ OPD	5,000	591	Vrana, Pratisyaya. Jvara, Mukharoga.
5.	THCRP- Jhabua	HQ OPD	-	130	Jvara, Pravahika, Sandhisula, Visam jvara, Amlapitta.
6.	THCRP -Palamau	Bahera, Khurakhurd, Khura chando	5,451	1,767	Visamajvara, Kasa, Jvara, Pradara, Switra, Atisara,, Vrana.

S.No.	Unit location	Tribal Villages/ pockets covered	Population covered	No. of Patients treated	Common Diseases
7.	THCRP -Ziro	Talo, Joram Hari, Dutta, Mundant taga, (HQ OPD)	6,718	3,930	Vicarcika, Dantaroga, Atisara, Yakratvikara, Krimi, Stanvidradhi, Pradara.
	Total	315	30,137	16,117	

MEDICO-ETHNO BOTANICAL SURVEY PROGRAMMES

Medico-ethno-botanical survey of different areas of the country is one of the programme continuing under the Council since its inception. Under this programme, the exploration of medicinal flora of the different regions of the country is of paramount importance to procure authentic drugs (Dravyas) for the various types of the research studies namely clinical, phyto-chemical, pharmacological and pharmacognostical undertaken by the Council.

Some of the achievements of the Medico- Ethno- Botanical Survey Programmes undertaken are:

1. The Council has been able to collect, identify and supply the authentic/ genuine drugs for its various research programmes.
2. The survey teams functioning at various Institutes/Centres/Units have visited forest areas of their regions for collection of the drugs.
3. The Council has more than one lakh herbarium specimens and 3050 different drug samples of animal, mineral and vegetable origion in the various regional herbarium museums managed under the Council all over the country.
4. The efforts are being made to establish a most ideal Central Medicinal Plants Herbarium and Museum at CCRAS Hqrs., New Delhi which would be a centre of excellence in the field of medicinal plants collection for reference and research purposes.
5. The articles on the controversial but important drugs and their identification with the latest informations have also been published from time to time.

Resume of Medico-Botanical survey work done.

During the reporting period 1996-97, the 17 Survey Units of the Council (spread over 16 states), which are located at Bangalore, Bhubaneshwar, Calcutta, Gangtok, Guwahati, Itanagar, Jaipur, Jammu-Tawi, Jhansi, Junagarh, Gwalior, Mandi, Nagpur, Patna, Tarikhet, Trivandrum and Vijayawada, have carried out some of the following programmes:

1. The survey unit located at RRC (Ay.), Bangalore (Karnataka) has carried out four medico-botanical survey tours to the district of Uttarkannada (North Kanara) of the Western Ghat forestry project. 329 speciemens belonging to 106 genera and 33 families were collected and processed. Herbarium specimens were prepared, identified, reviewed and check list maintained. Attended seminars and symposium on medicinal plants. Botanical monographs were reviewed for publication.

2. The survey unit located at CRI (Ay.), Bhubaneshwar (Orissa) carried out routine work in the herbarium and medicinal plants garden and also planted drug plants required for IPD of the Institute.

3. The survey unit located at RRI (Ay.), Calcutta (West Bengal) has undertaken local survey tours to Hoogly district and 24 Parganas. 117 medicinal plants were collected and identified. 12 new drugs were also collected and have been maintained in the museum. Regional names of medicinal plants were supplied to ISM&H. Unit attended seminars and symposiums.

4. The survey unit located at RRC (Ay.), Gangtok (Sikkim) has collected 4804 plants speciemens belonging to 854 species, 487 genera and 106 families, for herbarium since its inception. 74 drug samples of plant origin, one mineral origin and two of animal origin have been included in the museum of the centre, during the reporting period.

5. The survey unit located at RRC (Ay.), Guwahati (Assam) conducted survey tours to Assam, Meghalaya and Manipur. Unit has collected 18 plants, 20 folkore claims and preserved 4 species of the plant in the museum. 988 specimens were processed for herbarium. Unit attended seminars.

6. The survey unit located at RRI (Ay.), Gwalior (M.P.), surveyed Gwalior forest division. 12 specimens were collected for herbarium, one for museum and one for drug supply. Unit has collected two folklore claims. Attended seminars and published papers.

7. The survey unit located at RRC (Ay.), Itanagar (Arunachal Pradesh) has carried out the survey work in 14 forest divisions earlier. The Unit has collected 635 plants and one animal specimen during the survey of the area alloted. Besides they have added 170 drug samples in their museum.

8. The survey unit located at RRI (Ay.), Jaipur (Rajasthan) identified 522 plants, added 808 plant specimens to herbarium and supplied 7 raw drugs. Institute presented papers in seminars.

9. The survey unit located at RRC (Ay.), Jammu (J&K) submitted the manuscript on the work entitled "Medicinal Flora of Jammu" to CCRAS (Hqrs.) for perusal and further necessary action. Besides the Unit has collected raw drugs for the OPD of the Centre.

The survey unit located at RRC (Ay.), Jhansi (U.P.) has supplied 79 raw drugs. 142 kg. of fresh raw drugs are kept in the drug depot. 130 kg. of fresh raw drugs were procured from garden. 412 specimens have been prepared for herbarium.

11. The survey unit located at RRI (Ay.), Junagarh (Gujarat) has collected medicinal plants for museum and herbarium. Besides, the Unit has also supplied the crude drugs for the research purposes and collected folkore claims. 12 new species have been reported. Papers were submitted for publication.

12. The survey unit located at RRC (Ay.), Mandi (Himachal Pradesh) has conducted two survey tours and collected 200 plants. 20 plants have been added to the museum.

13. The survey unit located at RRC (Ay.), Nagpur (Maharashtra) has undertaken a survey tour. Plant specimens were prepared for herbarium. 3 species of the plant were added to the museum.

14. The survey unit located at RRI (Ay.), Patna (Bihar) conducted the survey tour to Giridih forest area and processed few plants for herbarium.

15. The survey unit located at IIADR, Tarikhet (U.P.) has maintained 37,500 herbarium sheets pertaining to Uttrakhand regions of Himalaya comprising 1200 genera. The Unit is also keeping 900 samples of raw drugs in their museum.

16. The survey unit located at RRI (DR), Trivandrum (Kerala) has undertaken a survey tour, during the current year. 114 herbarium specimens were identified and incorportated in the herbarium. 20 drug samples were supplied to the different units.

17. The survey unit located at RRC (Ay.), Vijayawada (Andhra Pradesh) has indexed 150 plants, attended seminars and published one book.

CULTIVATION OF MEDICINAL PLANTS

Five herbal gardens of the Council located at Pune (Maharashtra), Mangliawas (Rajasthan), Jhansi & Tarikhet (U.P.) and Itanagar (Arunachal Pradesh) has taken up a small scale experimental and semi-large scale cultivation of a few important plants of Ayurveda and Siddha systems of medicine. Important medicinal plants species are properly maintained in these gardens and the plantation includes those of tropical, sub-tropical and temperate regions, besides exotic ones. The main objective of this programme is to study adaptability, growth, flowering, fruiting and also to assess the yield at different altitudinal levels and other ecological conditions etc., besides providing adequate quality for research and pharmaceutical purpose. These herbal gardens also work out suitable agro-chemical technique for the successful cultivation and growth of scarcely distributed/rare/threatened medicinal plants species.

The Guggulu herbal farm at Mangliawas has provided adequate information for cultivation of Guggulu plants on a large scale for procurement of oleo-gum-resin and also conservation of this most important Ayurvedic medicinal plant which is at the verge of extinction.

The teqhnique evolved by the Council for cultivation of Saffron (Kumkum) at Ranikhet, Chamba (U.P.) and other adjoining areas is noteworthy achievement.

A brief resume of the work carried out under the cultivation programme in each of the cultivation centres is provided hereunder:

Jawaharlal Nehru Ayurvedic Medicinal Plants Garden & Herbarium, Pune.

Jawaharlal Nehru Ayurvedic Medicinal Plants Garden & Herbarium, Pune possesses about 19 acres land of which about 10 acres were developed and being utilized for cultivation studies and maintenance of the demonstrative garden. During the reporting period another 5 acres of land were developed with the help of the grant received under Central Scheme for Development and Cultivation of Medicinal Plants and atleast 3 acres of this newly developed land has been brought under cultivation. During the

reporting period the garden was maintained about 400 species of medicinal plants out of which 150 taxa are from among the medicinal plants included in Ayurvedic Formularly Part-II.

Measures were taken to develop large number of seedlings and to undertake mass scale plantation of the scarce medicinal species recommended for development and cultivation by the Ministry of Health & Family Welfare, Government of India. 257 plants of Shalparni (*Desmodium gangeticuum*) and 800 plants of Guduci (*Tinospora cordifolia*) were planted in the lower part of the garden. 54 plants of Gambhari (*Gmelina arborea*), 47 plants of Arjuna (*Terminalia arjuna*), 74 plants of Bilwa (*Aegle marmelos*) were planted in the newly prepared pits in the rocky area located in Southern part of the garden. 59 new plants of Shyonak (*Oroxylum indicum*) were located in the garden and they were maintained properly for transplantation under Central Scheme.

Under experimental cultivation, trials were made to study the effect of manures & fertilizers on the yield of Trivrita (*Operculina turpethum*) and Kapikachchu (*Mucuna pruriens*). The results indicate that the yield of Kapikachchu can be increased to 1.5 times by application of cowdung manure @ 112 quintal/acre as compared to control. In case of Trivrita no significant effects were observed.

188.100 Kg. dried crude drugs namely Amalaki (*Phyllanthus emblica*), Nirgundi (*Vitex negundo*), Bilwa (*Aegle marmelos*) and Guduci (*Tinospora cordifolia*) were supplied to various research Units of the Council.

59.800 Kg. dried crude drugs which were collected from the garden during the reporting period were stored for future supplies. Among these, Haritaki (*Terminalis chebula*), Bibhitaka (*Terminalis belerica*), Madana (*Catunaregum spinosa*), Bhallataka (*Semecarpus anacardium*), Atmagupta (*Mucuna pruriens*), Bakuchi (*Psoralea corylifolia*), Latakaranja (*Caesalpinia bonduce*), Ushira (*Vetiveria zizanioides*), Japa (*Hibiscus rosasinesis*), Bilwa (*Aegle marmelos*), Nirgundi (*Vitex negundo*), Amalaki (*Phyllanthus emblica*) are plantd in the garden on large scale and being maintained to meet the requirements of the research projects.

Effects were made to propagate the sale of Council's publications by displaying them during the visits of the students and other visitors. The nstitute received a sum of Rs. 438.45 from the sale of books and Rs.1400/- from the sale of the garden produce during the year under report.

Regional Research Centre, Jhansi.

At Regional Research Centre, Jhansi about 15 acres area is earmarked for cultivation of medicinal plants on experimental, semi-large scale cultivation as well as for demonstration purposes. The garden is maintaining more than 200 medicinal plants including Green House.

At Green House about 500 poted plants comprising near about 150 species of important Ayurvedic Medicinal Plants are maintained for demonstration under pot cultivation programme.

Total produce of the garden during the reporting year was about 130 Kg. of raw drugs which was deposited in the Central Drug Depot of the Centre.

Indian Institute of Ayurveda for Drug Research, Tarikhet.

The Institute's herbal garden at Ranikhet is located on a hillock and is surrounded by pine forest on its northern and western sides. It has also another small medicinal plants garden at Chamma about 400 kms. away from Ranikhet. At both places, cultivation of medicinal plants activities were continued.

The garden maintains more than 100 medicinal plants species from shrubs and trees, mentioned in Ayurvedic Formulary Part-I.

Medicinal Plants Garden at Chamma has about 50 medicinal plants species growing in different beds and are properly maintained. The Institute has also supplied raw drus materials to different Institutes/Centres of the Council for Research purpose from time to time.

Experimental Cultivation of Saffron

Saffron Experimental Cultivation Programme was continued on about 1.5 acres of land, out of total land, available for medicinal plants cultivation activities in the herbal garden of the Institute at Ranikhet. During the reporting period a total of 5,000 flowers were collected, approximately 38 gms. of Saffron consisting of dry stigma and little part of style was collected.

Guggulu Herbal Farm, Mangliawas, Rajasthan.

The Guggulu Herbal Farm, Mangliawas is situated about 25 kms. on Ajmer- Beawer Road. The main activity of this Herbal Farm is- conservation, cultivation and propagation of Guggulu plant (*Commiphora wightii*) on large

scale and observing its growth behaviour under different experimental conditions. The plantations of the Guggulu is being carried out in about 40 acres of the land.

At present there are about 15, 614 Guggulu plants growing on mass cultivation programme in different blocks and the possible attempts were made to maintain and protect them. About 70 other medicinal plants species also growing in the farm.

During the reporting period about 900 Guggulu plants dried due to termite infestation and extraction of gum.

165 Guggulu plants worth Rs. 3300/- supplied to different agencies. Bala (root-500 gms.) Sissam (heartwood- 500 gms.), Arjuna (stem bark-500 gms.), Bilva (fruit- 500 gms., seed-500 gms., pulp-500 gms.) and Kantakari (root-500 gms.) were also supplied as per requirements of different institutions functioning under the Council.

Regional Research Centre, Itanagar.

The medicinal plants garden of the Centre acquired about 17 acres of the land consisting to steep slopes and ditches etc. About 9 acres of the land is presently earmarked for cultivation of the medicinal plants. A total of 166 species of medicinal importance are growing in the garden and also properly maintained for the demonstration purpose. The entire plantation also represents 94 species mentioned in the Ayurvedic Formulary Part -I.

About 25 kgs. of crude drug consisting of different parts of medicinal plants species have been collected from the garden. About 23.50 kgs. of the plant material collected from the 8 drugs was supplied to Council's different Institutes/Centres for research purpose.

PHARMACOGNOSY RESEARCH STUDIES

The application of various tools and techniques, adopting different methodology in different aspects of approach for ascertain the genuineness/ authenticity of the crude drugs for their proper identification are highly required under Drug Research Programme. Pharmacognostical studies play an important role in the drug research undertaken by the Council. Pharmacognosy Research Units functioning under this Programme at Calcutta, Delhi, Lucknow, Jammu and Pune have taken up the pharmacognostical investigations on the following drugs used in Ayurveda.

1. Banafsha (*Viola odorata* Linn.): Whole plant
2. Dhanvayasa (*Fagonia cretica* Linn.): Stem
3. Kakadani (*Capparis sepiaria* Linn.): Whole plant
4. Kusumbha (*Carthamus tinctorius* Linn.): Flower
5. Mahaneem (*Melia azedazach* Linn.): Leaf
6. Muchkund (*Petrospermum acerifolium* Willd.); Flower
7. Neem (*Azadirachta indica* A. Juss): Leaf
8. Shakhotaka (*Streblus asper* Lour): Stem-bark
9. Suvarchala (*Cleome viscosa* Linn.): Root, Stem & Leaf
10. Talisa i) (*Abies spectabilis* (D.Don) Mirbel): Leaf
    ii) (*Abies pindrow* Royle): Leaf
11. Yavani (*Trachyspermum ammi* Linn.): Fruit

PLANT TISSUE CULTURE

Plant tissue culture laboratory at JNAMPG&H, Pune, continued experiments on *in vitro* propagation, multiplication, seed germination and chemical investigation of Sariva (*Hemidesmus indicus* R.Br.), Brahmi (*Bacopa monnieri* L.), Gandhaprasarini (*Paederia foetida* L.), Banafsha (*Viola serpens*, Willd).

Sariva (*Hemidesmus indicus* R.Br.) the complete plantlet was grown in laboratory on MS medium supplemented with different concentration of auxin and cytokinins, much callus was seen growing near the crown level, which affected the normal growth of the plantlet. It was also observed that shooting can be initiated from differentiation of callus grown through leaf culture.

Brahmi (*Bacopa monnieri* (L.) Pennel.) was successfully grown *in vitro* through nodal segments.

Efforts were made to grow a well known Himalayan plants Banafsha (*Viola serpens* Wall.) through tissue culture.

Malkangini/Jyotishmati (*Celastrus panicolatus* Willd.) was regenerated from seeds which were dipped in the concentrations i.e., 0.1% to 5% GA3 solutions for 24 hours and they were sown in soil. Germination was successfully induced in the seeds by 0.5% GA3 and as much as 32% germination was recorded in the laboratory.

MUSK DEER BREEDING PROGRAMME

The Musk Deer Breeding Farm was established during 1972 at Mehroori, District Almora at an altitude of 2250 meters. The area of the Farm is 2 acres only. The climatic condition of the area is cold, moderately humid and covered with ever green forest of Oaks, Rhododendrons, Utish with undercover of various shrubs and herbs. This year in the farm 20 animals were maintained which include 8 males and 12 females. Seven females were subjected to copulation and out of which seven fawns were born. Among them three were born dead and two female and two male fawns servived. But within five months 2 male fawns died.

The data regarding routine growth, development and reproduction etc. were duly recorded and observations on different aspects of life cycle were noted.

During the year one adult female died in the farm inspite of best possible treatment and medicare. There were 21 animals at the end of reporting period.

CHEMICAL RESEARCH PROGRAMME

Chemical studies have an important role in the development of drug research. These studies reveal the hidden secrets of plant kingdom i.e. what are the various compounds present and which are the active ingredients responsible for their effectiveness. The Phytochemical Research Units located at Calcutta, Delhi, Hyderabad, Lucknow, Madras, Trivandrum and Varanasi have conducted studies on 17 plants and have isolated active principles from them to carry out further studies. A brief resume of the work carried out during the year 1996-97 is reported as under:

1. Amarvela (*Cuscuta reflexa* Rox. & *C. chinensis* Lam.) ChRUC

Chemical work on the parasitic planta *C. reflexa* and *C. chinensis* has resulted in the isolation of a no. of flavone and/or flavone glycosides. One of the flavones has been characterised as (Fig. 1). Further studies for the characterisation of this flavone glycoside and others are in progress.

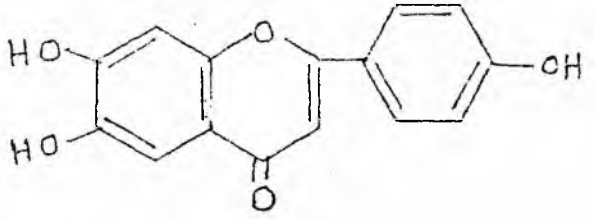

Fig. 1

2. Arjuna (*Terminalia arjuna* Roxb.) ChRUV

The methanolic extract of *Arjun* on repeated column chromatography furnished three compounds which were characterised on the basis of chemical degradation and detailed spectral analysis as oleanolic acid, arjunic acid and arjunic acid diglucoside.

3. Brihatgosksura (*Pedalium murex* Linn.) **ChRUV**

In continuation to previous phytochemical work on *P. murex* efforts are being made to analyse spectral data and characterise the isolated phytochemicals Pm-1, Pm-2 and Pm-3.

4. Chirata (*Swertia chirata* Buch-Ham.) **ChRUC**

Previous chemical & pharmacological work on *S. chirata*, one of the major constituents of antimalarial drug Ayush-64 provided interesting results. Chemical work on this drug *S. chirata* enabled to isolate and characterise a no. of xanthone derivatives. The most active compound was 1,5,8- trihydroxy-3-methoxy xanthone (Fig. 2). Activity of this compound is comparable to that of anti-inflammatory drugs-phenylbutazone and betamethasone.

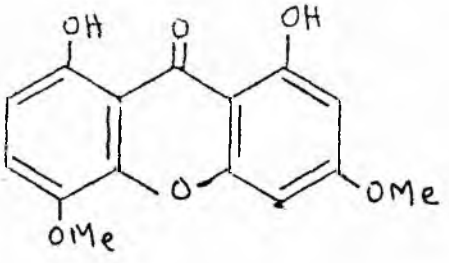

Fig. 2

5. Dikamali gum (*Gardenia gummifera* Linn.) **CSMDRIAC**

Gardenin-A (5- hydroxy- 6,7,8,3',4',5'- hexamethoxy flavone) was obtained by digestion of Dikamali gum-resin with ether. Acetylation and methylation of gardenin- A afforded acetyl and methyl gardenin-A respectively. Their 13_C NMR data are nereby reported for the first time. Gardenin-A, acetyl gardenin-A and methyl gardenin-A were subjected to anti-bacterial activity studies and *in vitro* pharmacological screening.

6. Jatamansi (*Nardostachys jatamansi* DC.) **ChRUC**

Recent investigation on this plant has revealed the presence of a no. of compounds. One of which has shown to be a furanosesquiterpene, m.p. 198°, M^+ 430, the structure of which is underway.

7. Juhi (*Jasminium grandiflorum* Linn.) ChRUC

Further continued search for phytochemicals in *Juhi* has resulted in the isolation and characterisation of cinnamic acid (Fig. 3). Another compound, a triterpenoid isolated from the same plant (flowers) is awaiting characterisation.

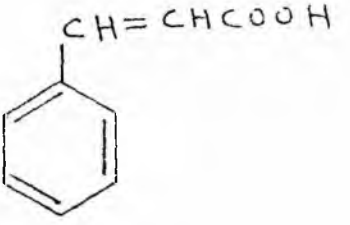

Fig. 3

8. Madana (*Randia dumetorum* Lam) ChRUC

Triacontanoic acid esters have been isolated and characterised from the root bark of *Madana*. This is the first report of the occurrence of triacontanoic esters in *Randia* genus.

Coumarin derivative, scopoletin (Fig. 4) has also been isolated and characterized from the same plant Madana.

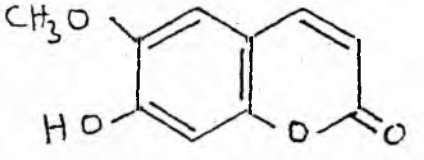

Fig. 4

9. Mahanimba (*Ailanthus excelsa* Roxb.) **ChRUC**

A steroid of rare occurrence, stigmasta- 4, 22- dien-3-one (Fig. 5) has been isolated and characterized from the above plant.

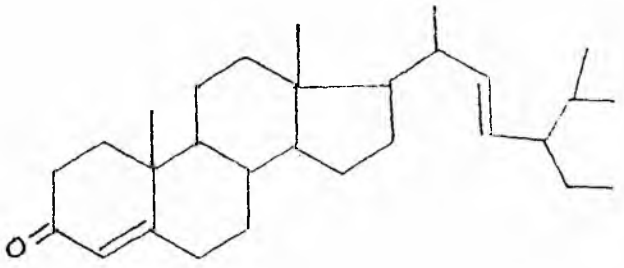

Fig. 5

10. Paccapuli (*Hibiscus furcatus* Roxb.) **ChRUT**

The leaves of the drug afforded sitosterol, quercetin, gossylin and gossypitrin. These compounds were identified on the basis of Rf. values and co-PC/TLC with authentic samples.

11. Parijata (*Nyctanthes arbortristis* Linn.) **CSMDRIAC**

A new iridoid glucoside characterised as 6- acetoxy-7-0-cinnamoyl loganin (Fig. 6) has been isolated from the leaves of Parijata and has been characterised from ^{1}H and ^{13}C NMR spectral studies.

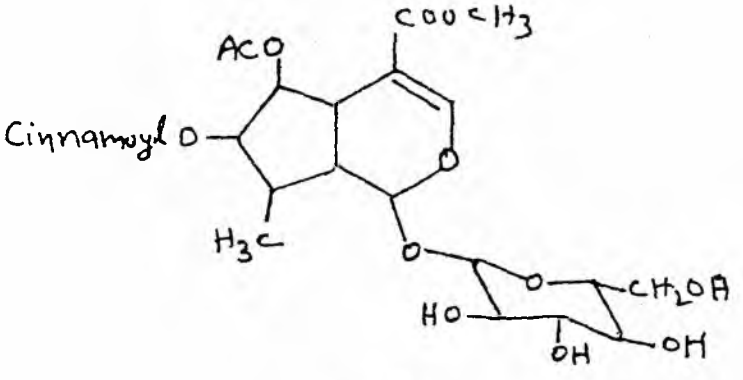

Fig. 6

12. Pithari (*Glossocardia bosvallia* DC.) **ChRUH**

About 3 kg of shade dried plant material of Pithari was powdered and extracted with chloroform in hot condition. T.L.C. examination and colour reactions of the extract after concentration indicated the presence of steroids and terpenes. Purification of the extract by column chromatography method closely monitored by T.L.C. yielded a pure steroid having m.p. 286. Its spectral data (I.R., U.V, N.M.R & Mass) is coinciding with a reported compound in literature namely 'Sulviolide'. Efforts are in progress to procure the authentic samples for direct comparison. Tissue culture work on this plant is giving encouraging results.

13. Sthoreyaka (*Taxus baccata* Linn.) **ChRUV**

Earlier isolated compounds viz. sciadoptisin, conidendrin from this plant, the spectral analysis were completed during this period and finally chemical structures were established. The work of detailed spectral analysis of some of the isolated compounds from extracts of different parts of this drug are in progress.

14. Surabhi Nimba (*Murraya koenigii* (Linn.) Spreng) **ChRUC**

From the seeds of *M. koenigii*, a linear pyranoflavone (Fig. 7) has been isolated and characterised.

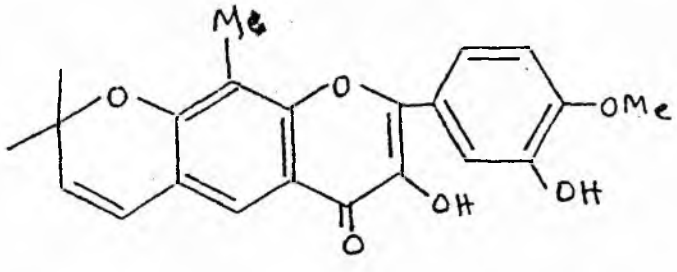

Fig. 7

15. Talisa (*Abies pindraw Spack*) **ChRUV**

During the course of chemical investigation, Unit has characterised two more compounds i.e. oleanolic acid and hesperidine - 3' - methylether from the methanolic extract of the leaves of *A. pindraw*.

16. Vijaya (*Cannabis sativa* Linn.) **ChRUC**

Chemical investigation of the whole plant of *Vijaya* resulted in the isolation and characterisation of methyl ester of p-hydroxy benzoic acid (Fig. 8) and cycloeucalenol acetate (Fig. 9).

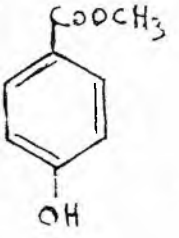

Fig. 8

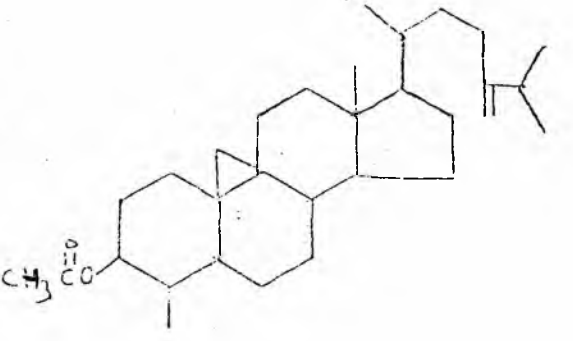

Fig. 9

17. Virataru (*Dichrostachys cinerea* W. & A.) **CRID**

Benzene extract of the drug afforded three compounds having melting points as 78-80°, 195-200° & 143-45°. Compounds 2nd and 3rd showed positive L.B. test. Further identification is in progress.

Ethanolic and aqueous extracts of the roots of this drug were also supplied to Pharmacological Research Unit, New Delhi for pharmacological screening.

18. Miscellaneous Work

a) Extraction supply Unit: **ChRUC**

As usual, from the Extraction Supply Unit, different following extract have been supplied to RRI (Ay.), Calcutta for the preparation of coded drug Ayush-56 & Ayush-64.

Plants Name & quantity		Extracts	Date of supply
M. minuta	(15 kg Crude)	5.00 kg	21.9.96

b) Standardisation: **ChRUC**

The antifertility drug, Pippaliyadi vati received from the Council has also been standardised. The mathod of standardization has been developed by

ChRUC. In addition on regular basis, the antimalarial drug Ayush-64 sent from different institutes under the Council has been standardised.

(c) (i) Qty. of Neem Oil worked out - 130 Lit.

(ii) Qty. of Nimbathiktham isolated/ supplied to the clinical/ pharmacology unit - 4.075 kg

(iii) Qty of Psoralin oil supplied for clinical section 4.510 ml.

(d) Amalvetas (*Garcinia pedunculata*) **CRID**

Benzene extract of the fruits was supplied to Pharmacological Research Unit, New Delhi for Pharmacological investigation.

(e) Literary work: **CRID**

Preliminary literature survey of *Pterocarpus* genus and *Dichrostachys spp.* was also carried out.

(f) Tagara (*Valeriana wallichii* DC.) **CRID**

The plant was screened for its extractive values after extractions of the powdered plant (root) in different solvents. The results are as under:

Benzene extract: 5.71% w/w.

Ethyl alcohol: 3.65% w.w.

Further work is in progress

(g) Musali safed (*Chlorophytum tuberosum* Bakar) **CRID**

Tubers of the drug were extracted with benzene under reflux. The extract on concentration under reduced pressure gave a semi-solid mass with percentage extractive value as 1.94 w/w. Further work is in progress.

(h) Lily-Bhed (*Lilium polyphyllum*) **ChRUV**

The isolation and characterisation of active principles of this drug is in progress.

(i) Extract supply **ChRUH**

Petroleum-ether, chloroform and methanol extracts of stem bark of Sigru (*Moringa oleifera* Lam.) and Tandula (*Amaranthus spienosus*) were

despatched for pharmacological screening. Shankhapushpi (*Evolvulus alsinoides*) was powdered and extracted repeatedly with solvents of increasing polarity. After extraction was complete, the solvent was removed under reduced pressure and the three extracts viz. petrol, chloroform and methanol were sent for pharmacological screening.

About 1 kg of the seeds of *Strychnes nuxvomica* (market sample) were powdered and extracted in a soxhlet extractor with petroleum-ether. After concentration under reduced pressure, the oil was obtained. Then the plant material was extracted successively with chloroform and methanol. All the three extracts after concentration were sent for pharmacological testing.

Again 1 kg of the rhizome of *Allium sativum* (Lasun-market sample) was powdered and extracted with petroleum-ether and methanol is a soxhlet extractor. Both these extracts after concentration were sent for pharmacological screening.

PHARMACOLOGICAL RESEARCH PROGRAMME

The relevance of pharmacological research studies under the Council was considered to evaulate the activities of the crude drug as well as its isolates in experimental animal models and simultaneously in human subjects to study their therapeutic efficacy in different clinical conditions so that the observations and results can be confirmed further. Under this programme, the total pharmacology as well as the specific pharmacology of the drugs was done to confirm their activities, besides, the toxicology of the certain plants/plant materials was also undertaken to establish their LD-50 values acute/sub-acute, chronic toxicity in the animals, treated under different groups. The Pharmacological/Toxicological Research Units functioning at Calcutta, Cheruthuruthy, Delhi, Jaipur, Jhansi, Lucknow, Mumbai, Patiala, Trivandrum and Varanasi carried out research studies on 21 drugs (single drugs, coded drugs and compound formulations) during the period under report.

1. *Ardraka* (*Zingiber officinalis* Rpsc.) PhRUC

Insignificant effect on respiration was observed.

2. *Ayush*-82 PhRUL

It was investigated for its hypoglycaemic effect in alloxan induced hyperglycaemic rats. The drug was given in graded dose of 2,3 and 4 mg. per kg. *i.p.* in different groups. It did cause a significant hypoglycaemic effect. However, when Ayush-82 (4 gm. per kg. *i.p.*) is given along with Shilajit (300 mg. per kg *i.p.*), the response achieved was the maximum among all the treated groups.

3. *Bala* (*Sida cordifolia* Linn.) PhRUC

The benzene soluble aerial part was found significantly effective as analgesic in comparison of alcoholic extract of aerial part of the drug in the experimental animals treated under different groups.

4. *Baugainvilia spectrabilis* (Alcoholic extract of areal part) PhRUC

The Unit has reported earlier the significant effect of above said drug in

STZ treated hyperglycaemic and normoglycaemic rats. Besides the drug was compared with the tolbutamide at a dose level of 6.25 mg. per kg. body weight.

The further studies revealed the significant effect of the drug in lowering the level of serum-SGPT, cholesterol and triglyceride level in *B. spectabilis* treated diabetic group. Besides, the drug showed a significant protection in STZ induce rise in serum urea and creatinine. Histopathology of pancreas of STZ induced diabetic, treated with extract, was performed with special strain in B- Cells of *B. spectabilis* treated group showed regeneration after 28 days of treatment.

5. *Bimbi* (*Coccinia indica* W. & A.) **IIPC**

The petroleum-ether, chloroform and ethanol extracts and decoction of the above drug were administered in experimental animal model. Ethanol extracts and decoction produced mild CNS depression and potentiated diazepam induced hypnosis in mice. The ethanol extracts also produced significant anti-inflammatory effect in xylene induced mice ear oedema. Petroleum-ether extract produced mild analgesic effect and the decoction produced the mild depression of spontaneous motor activity.

6. *Chorak* (*Angelica glauca* Edgn.) **CRIN**

The study did not reveal to observe analgesic and antipyretic effect, when compared with Aspirin and Paracetamol respectively.

7. *Gandhamarajara Veerya* (Civet cat) **IIPC**

About 24.77 gms. of Veerya was collected from only one animal, maintained in the capativity at the Centre.

8. *Isku* (*Saccharum officinarum* Linn.) **CRIN**

LD- 50 values of Isku in mice and rats observed with the dose of more than 2 gms. per kg. administered by oral root.

9. *Karanja* [*Pongamia pinnata* (Linn.) Merr.] (Roots) **PhRUV**

Petroleum-ether and benzene extract fractions significantly reduced the number of ulcers and severity of ulcer index during the Pylorus ligated gastric ulcer studies.

10. *Lavanga* [*Syzygium aromaticum* (Linn.) Merr.] **CRIM**

LD - 50 value of clove powder in mice and rats is more than 4 gm/kg by oral route in acute toxicity studies.

11. *Madhuka* [*Madhuka longifolia* (Linn.) Mac.] (Seeds) **PhRUD**

Alcoholic and aquous extracts of the drug did not produced any adverse/ toxic effect upto 10 days in the treated animal with the doses of125, 250 and 500 mg. per kg. body weight. Besides, no significant analgesic and anti-inflammatory effect was observed.

12. *Neem Oil* (*Azadirachta indica* A. Juss.) **CRIM**

LD-50 value of Neem oil in rats by oral roots is more than 4.0 gm/kg.

13. *Pushkarmoola* (*Inula racemosa* Hook.f.) **PhRUL**

Alcoholic, petroleum-ether extracts of the drug were considered for the studies. The study revealed that alcoholic extracts of *I. racemosa* is effective in protecting the broncho constriction effect caused by histamine aerosol while administered orally as well as *i.p.* route. The effect was found more in higher doses.

14. *Shankhpushpi* (*Evolvulus alsinoides* Linn.) **PhRUT**

Petroleum-ether, chloroform and methanol extracts of the whole plant did not exhibit any toxic effect/mortality upto 1000 mg. per kg. body weight in treated animals.

15. *Shilajit* **PhRUL**

The drug was given in graded doses in different groups of the treated animals for about 7 days. The significant hypoglycaemic effect was observed from the 3rd day onwards.

16. *Sigru* (*Moringa oleifera* Lam.) **PhRUT**

Methanol extracts of the root bark of the Sigru exhibited significant hypoglycaemic, analgesic, anti-inflammatory, anthelmintic effect in experimental models. No toxicity was noticed.

17. *Sthoreyaka* (*Taxus bacata* Linn.) **CRIM**

The drug did not indicate the analgesic effect (by hot water method) as

compared to Aspirin. Besides the drugs failed to show anti-pyretic effect compared to Paracetamol syrup and Tribhuvan Kirti tablets in treated animals (mice).

18. *Talisa* (*Abies pindrow)* (leaves) PhRUV

The different extracts of drug i.e. petroleum-ether, benzene, chloroform, ethanol extracts, exhibited significant anti-inflammatory, analgesic effect comparable to the standard drug Phenylebutazone. 100% mortality was observed with 400 mg. per kg. and 800 mg. per kg. doses of petroleum extracts, benzene extracts and chloroform extracts respectively.

19. *Vidang* (*Embelic ribes*) Brum. f. (Seed) TRUJh

No acute toxicity and behavioural changes due to drugs was observed in the rats and it was found that the drug is safe even at the dose of 5000 mg. per kg. *p.o.* and no noticable behavioural changes were observed.

20. Visamusti (*Strychnos nuxvomica* Linn.) IIPC

Petroleum-ether, chloroform and ethanol extracts and decoction of the drug failed to exhibit analgesic activity (both in radiant heat method and in acetic acid induced writhing in mice), to affect the performance of trained mice on rota rot and to produce anti-inflammatory effect (xylene induced mice ear oedema).

21. Virataru (*Dichrostachya cinerea* W. & A.) (Root) PhRUD

Aquous and alcoholic extracts of the drug was studied. None of the extracts exhibited any significant analgesic or anti-inflammatory effect.

DRUG STANDARDISATION RESEARCH STUDIES

Ayurvedic formulations are gaining tremendous support are popular in National Health Care System and have captured internationational attention as well. There are many classical preparations popular in the country which bear the same name but have different ingredients as well as differ in their method of preparation also sometimes. Govt. of India formed a Committee to prepare a comprehensive list of popular Classical Formulations and a standard list of ingredients their identity and method of preparation of these formulations were compiled to maintain uniformity all over the country. This compilation is notified as 'Ayurvedic Formulary of India' and presently has been published only in two parts (Part- I & II).

The drug standardisation plays an important role in determination of authenticity of medicinal formulations and genuine single drugs for use in the Health Care System. Standardisation of Ayurvedic formulation consisting of herbal, herbomineral and also having constituents of animal origin is a difficult task. The Council evolved its own analytical standards for these formulations and did standardisation work. A compilation of 431 formulations out of 444 of above Formulary Part-I has already been published by the Council. Standardisation of Part -II of the said formulary consisting of 191 formulations is under progress. This work is assigned to three Drug Standardisation units located at CSMDRIA, Chennai, DSRP- BHU, Varanasi and DSRP -Gujarat University, Jamnagar separately, so that final data can be compiled by studying and comparing the values from three sources. The study assumes importance as analytical datas are based on the textual formulations prepared by the Research Project itself. DSRP -Jamnagar has completed standardisation work on 182 formulations whereas CSMDRIA-Chennai has completed only 140 and DSRP-Varanasi has completed 171 formulations.

Having regard to this, the Council has also undertaken the task of standardisation and laying down physico-chemical values of the single drugs that are entering as ingredients in the particular formulations, also on the process of manufacture like Asava, Arista, Avaleha, Bhasma etc. in addition to 'shelf-life' study. Standardisation studies on single drugs, proccess of manufacture and finished products (formulations) are carried out at

Captain Srinivas Murthy Drug Research Institute for Ayurveda, Chennai (CSMDRIA-C), Regional Research Institute, Trivandrum (RRI-T), Indian Institute of Ayurveda for Drug Research, Tarikhet (IIADR-T) and Drug Standardisation Research Project, Gujarat Ayurveda University, Jamnagar (DSRP-J). While rapid analytical values were laid down at CSMDRIA-C, DSRP-J, and Drug Standardization Research Project, IMS, BHU, Varanasi (DSRP-V) and the studies on single drugs as well as finished products were taken up at Regional Research Centre, Bangalore (RRC-B).

Based on the experience gained by the studies carried out as a second phase of study the Council has worked out a plan to lay down analytical values and to identify main and other costly ingredients, and by preparing different proportionate ingredients, in different quantity or deleting some of them other than the Standard Formulary and to establish whether there is any change in the analytical value other than the Standard Formulary already worked out. This study has indicated good encouraging results, and it is presumed that in time to come genuine, authentic and quality controlled formulations will be available for clincial armamentarium.

Details of work done by Drug-Standardisation Research Units/Porjects during the year 1996-97 are as follows.

Standardisation of Single Drugs:

Kemuk	(*Costus speciosus* (Koening) Smith)	- CSMDRIA-C
Kancnar	(*Bauhinia purpurea*) stem bark	- DSRP-J
Bhumyamalaki	(*Phyllanthus amarus*) whole plant	- DSRP-J
Madanaphal	(*Randia dumetorum* Lam.) fruit	- RRI-T
Marica	(*Pipper nigrum* Linn.) fruit	- RRI-T
Vidanga	(*Embelia ribes* Burn.) fruit	- RRI-T
Sunthi	(*Zingiber officinale* Rosc) Rhizome	- RRI-T
Amalaki	(*Embelia officinalis* Gaertn.) fruit	- RRI-T
Nagkesar	(*Mesua ferrea* Linn.) flower anther	- RRI-T
Goksura	(*Tribulus terrestris* Linn.) root	- RRI-T
Citraka	(*Plumbago rosea* Linn.) root	- RRI-T
Dhaniya	(*Coriandrum sativum* Linn.) fruit	- RRI-T
Jivanti	(*Holostemma adakodien* J.A. Schular) root	- RRI-T

Pippali	(*Piper longum* Linn.) fruit	- RRI-T
Arjuna	(*Terminalia arjuna*) stem bark	- RRI-T
Vibhitak	(*Terminalia bellirica* Roxb.) fruit	- RRI-T
Musta	(*Cyperus rotundus* Linn.) root tuber	- RRI-T
Gajpippali	(*Piper retrofractum* voul.) fruit	- RRI-T
Talispatra	(*Abies webbiana* Lind.) leaf	- RRI-T
Ciraita	(*Swertia chirayata*)	-DSRP-V
Saptaparna	(*Alstonia scholaris*)	-DSRP-V
Kuberaksa	(*Caesalpinia crysta*)	-DSRP-V
Kutaki	(*Pichrorhiza kurroa*)	-DSRP-V

Pharmacognostic Study

Draksa	(*Vitis vinifera* Linn.)	- RRC-B
Dhataki	(*Woodfordia fruticosa* kurz) flower	- RRC-B
Kutaja	(*Holarrhena antidysenterica* Roth DC.) stem	- RRC-B
Citraka	(*Plumbago rosea*) root	-CSMDRIA-C
Pippalimula	(*Piper longum* L.) root	-CSMDRIA-C
Hingu	(*Ferula foetida* Regel) resin	-CSMDRIA-C
Ajmoda	(*Trachyspermum roxburghiana* Sprague) fruit	-CSMDRIA-C
Cavya	(*Piper nigrum* L.) root	-CSMDRIA-C
Matulunga rasa	(*Punica granatum*) fruit	-CSMDRIA-C

Phytochemical study

Parijata	(*Nyctanthes arbortistic)*	-CSMDRIA-C
Nadi Hingu	(*Gardenia gummifera*)	-CSMDRIA-C
-	(*Hibiscus furcatus*)	-RRI-T
-	(*Myristica* Sp.)	-RRI-T

Physico-chemical Study

(a) Single drug

Bakula	(*Mimusops elengi)* leaf	-DSRP-J
Bimbi	(*Coccinia indica*) leaf	-DSRP-J

Nili	(*Indigofera tinctoria*) leaf	-DSRP-J
Bhumyamalaki	(*Phyllanthus amarus*) whole plant	-DSRP-J
Ajmoda	(*Apium leptophyllum*) fruit	-DSRP-J
Katuki	(*Picrorhazia kurroa*) root	-DSRP-J

(b) Processed drugs (Herbal & minerals)

Sodhit Guggulu (Nirgundi patra + Haridra kwatha)	-DSRP-J
Cangeri ghrtam	-RRI-T
Pranada gutika	-RRI-T
Swarna maksik	-DSRP-V
Rajat maksik	-DSRP-V

T.L.C. Study:

Madayantika	(*Lowsonia inermis*) leaf	-DSRP-J
Sahadevi	(*Vernonia Cinerea*) whole plant	-DSRP-J

Standardisation of Formulations

Citrakadi vati	CSMDRIA-C
Bhringaraja Taila	DSRP-J
Citrak Haritaki	"
Yogaraj guggulu	"
Pancatikta kwatha	RRC-B
Kutajarista	"
Amritottar kwatha	DSRP-V
Darunagaradi kwatha	"

Shelf Life Study

Draksavaleha	DSRP-J

Drug Supply (RRI-Trivandrum)

Neem oil	-	130 Lit.
Psoralin oil	-	4.51 Lit.
Nimbatiktam	-	4.075 kg.

Microbiological Study (CSMDRIA -Chenni)

Study for antibacterial activity

- (Solanum trilobatum)
- (Plumbagin)
- (Indigofera asphalathoides)

LITERARY RESEARCH PROGRAMME

The Literary and Medico-Historical Research Programmes of the Council are being carried out at Indian Institute of History of Medicine, Hyderabad; Documentation and Publication Division, New Delhi and Literary Research Unit, Chennai.

Indian Institute of History of Medicine, Hyderabad

This Institute maintains a Library and Museum of Medico-historical importance and also publishes a biannual magazine viz. 'Bulletin of Indian Institute of History of Medicine'.

Research Activities

With regard to biographical studies of commentators of classical treatises of Ayurveda & Unani material on 4 commentators has been compiled and 3 articles have been prepared. Searched and collected 8 rare books. Material was compiled on different topics of medico-historical value and 7 articles have been prepared. Collected biographies of two eminent physicians of Hyderabad. Further, works are to be continued on 4 different topics of medico-historical value. Presented 8 research papers at different seminars/conferences.

Publication

During the reporting period 38 medico-historical articles, 4- Book reviews have been edited and published along with News & Notes on medico-historical activities in Volume - 25 (No. 1 & 2) 'Silver Jubilee Issue', 1995 and Volume- 26 (No. 1 & 2) 1996.

Library and Referral Services

About 95 new books, 12 rare books and 218 periodicals on medicine and allied sciences have been acquired and added in the Institute's Library, besides 145 new registrations have been made for referral services.

Museum & Photography

The work on compilation of new museum guide is under progress.

Documentation and Publication Division, New Delhi

1. *Ausadh Pralekhana*

Classical Ayurvedic references on 7 mineral drugs viz. Godanti, Tuttham, Anjan, Abhrak, Gandhak, Kharpara and Navsadar have been obtained from ancient text. Textual informations regarding two medicinal plants i.e. *Nandi (Ficus retusa* Linn.) and *Patula* (*Stereospermum suaveolas DC.*) from the original text and journals of allied sciences were also obtained.

2. *Vyadhi Pralekhana*

The references regarding Satatjvara, Dengue, Kitibha were also collected from the text, besides, references on Netra Roga, AIDS, Cancer, Hepatitis-B and Hypertension were updated.

3. Documentation Bulletin

The conjoined issues No. 1 & 2-4 of the CCRAS Documentation Bulletin relating to its 17th Volume was circulated to Institutes/Centres/Units functioning under the Council.

4. Library

The Library procured 110 new books on Ayurveda, Siddha and Allied Sciences as per recommendations of the Library Committee.

5. Publication Programme:

The issues of News Letter for the period November, 1995 to February, 1996 were released during the period under report. The publication wing also brought out the conjoined issues No. 3-4 of the 15th Volumes of the J.R.A.S. for the year 1994 and conjoined issues Volume No. 16. The conjoined issue of B.M.E.B.R. (Bulletin of Medico-Ethno Botanical Research) for the year 1994, 1995 and 1996 Volume 15th (No. 1-4), Volume 16th (No. 1-2 and 3-4) and Vol. 17 (No. 1-2) was also published.

The monographs published are:

i) Medico-Ethno Botanical Exploration of Phulbani and Koraput.

ii) Tamak Shwas by Dr. H.R. Goyal were also compiled and published.

The following monographs were released:

i) Pharmacological Investigations of certain Medicinal Plants and compound formulations used in Ayurveda and Siddha.

ii) Ayush-56- An Ayurvedic anti-epileptic drug.

An amount of Rs. 12,435/- as subscription on the sale of periodicals and Rs. 82, 334/- on the sale of the publication on books and monographs etc. was received during the reporting period.

Literary Research Unit, Chennai

The Unit has obtained zerox copies of the following manuscripts from the Ambedkar Library, Anna Hospital Campus, Chennai

Sl. No.	Name of the Manuscripts	ASC. No.
1.	Dravyaguna	4520
2.	Parahit Samhita	4537
3.	Sakuntala Parinayam	4533
4.	Rasarnavas	4551
5.	Kasyapa Samhita	4548
6.	Vaidya Bhasha Tarka	4549
7.	Vaidya Darpana	4526
8.	Dakshina Murthy Nighantu	4547
9.	Rasa Ratnakara	4534
10.	Dhanvantari Vilasa	3800
11.	Kalpa Samucchaya	4544
12.	Rasa Nighantu- Vaidya Bhaisajatarka	4543

The Unit is also keeping and preserving 6 verunacular manuscripts and 30 plam leaf manuscripts.

AMCHI RESEARCH UNIT, LEH-LADDAKH

The Clinical Research Unit of Tibetan/Amchi System of Medicine is functioning under the Council at Leh-Laddakh since long. In order to re-organise and strengthen this system of medicine the Unit has undertaken Clinical trials on the diseases, prevalent in that area, collecting the raw drugs, used in Amchi System to cater the need of its O.P.D.

The Unit is also compiling the work on the rare manuscripts of Tibetan medicine. A book entitled "Amachi Pharmaco-therapeutics" has been published by the Unit and its English translation work is under progress.

This year the team conducted a tour to Leh Phu area for collection of herbal and mineral drugs. 30 different important plants have been collected for the use in O.P.D. of the Unit, some of the plants were also collected for herbarium specimens. An another tour were also conducted to Phokar area, Kargil district where large number of plants are available. The team has collected around 39 different kinds of herbs which are important for medicinal use.

During current year the Unit has treated 450 male, 553 female (Total 1003) patients in O.P.D., suffering from different ailments, out of which, 27 patients were treated with Accupuncture (Golden needles), 15 patients with Couping therapy, 12 with Venesection, 65 patients with Moxabustion and 10 with Hydro therapy. Out of these techniques Moxabustion seems to be more effective in the treatment of paralysis, Vata-Kapha disorder, kidney diseases and other diseases caused due to cold weather.

The Unit is doing a significant work under health care programme and participated in the various seminars/workshops organised in the area time to time.

FAMILY WELFARE RESEARCH PROGRAMME

This programme has two main aspects namely clinical trials and chemico-pharmacological studies including toxicological studies. The clinical trials of herbal, herbo-minerals formulations and single plant drugs are conducted on women of reproductive age group (15-45 years) for their anti-fertility potential. On the other hand chemico-pharmacological Research Programmes are designed to study the effect of different extracts of plant drug for their anti-fertility, anti-implantation, anti-ovulatory and estrogenic activities in experimental animal model. The toxicological studies cover acute, sub-acute and chronic toxicity of the drugs on animals.

Clinical Studies:

Clinical evaluation of five drugs and combination of drugs have been taken up at the Institutes/Units functioning at Ahmedabad, Calcutta, Chennai, Delhi, Jaipur, Lucknow, Mumbai, Patiala, Trivandrum and Varanasi. The details about the number of new cases included into the study during the reporting period, number of old cases carried forward from previous year number of drop outs and number of cases continuing at the end of reporting period (separately for each drug) are reported in Table No. 1. The clinical evaluation of the drugs based on the studies of yester years is given in Table No. 2.

Chemico-Pharmacological Studies:

Chemico-Pharmacological studies were carried out at the Units functioning at Bhubaneshwar, Jamnagar, Trivandrum, Varanasi and Toxicological studies at Jhansi. The work carried out by these Units is summarised hereunder.

1. **Banjauri (*Vicoa indica*)** Whole extract **PhURFT**
   Anti-implantation study.

Earlier study upto 2gm/kg. did not give any significant activity in female rats.

The extracts was further tested using 5,10, and 25gm./kg orally. This study was in progress and the results are yet to be analysed.

2. Arka (*Calotropis procera*) Acute Toxicity study **PhRUFT**

Aqueous extracts of leaves and root were used for actue toxicity studies in the doses of 100 mg/kg. They are found to be non-toxic.

Arka (*Calotropis procera*) Anti-implantation study **PhRUFT**

Leaf and root decoctions were given in doses of 10 and 25 gm/kg.

The leaf extract showed significant anti-implantation effect at 10gm./kg. in female rats. Further studies on the drug are in progress.

3. Nirgundi (*Vitex negundo*) **PhRUFT**

(a) Anti-implantation activity carried out by using Holtzman rats.

Proven fertile females were used for study in groups of 6 or more.

V. negundo stem extract in 10 gm. and 25 gm./kg. and leaf extract in 5,10 & 25 gm./kg. was administered to rats. In control group, water was given orally. The study was in progress and results are yet to be analysed.

(b) Anti-fertility.

Aqueous extract of shade dried leaves and stem were separately taken for preliminary study in female rats for their anti-fertility potentiality.

4. Karvitori (*Luffa acutangula*) Antifertility effect **PhRUFV**

Water extract showed significant antifertility effect on preliminary test. Needs further study in order to have mode of action etc. on different dose and period. Pet. ether extract and ethanolic extracts were found to be non-significant.

5. Ghritkumari (*Aloe barbadensis*) Antifertility effect **PhRUFV**

Results of water and ethanolic ext. are awaited. Pet. ether extract is yet to be studied.

6. Chandan vati **PhRUFT**
Clinical efficacy in dystrophic uterine bleeding

The drug was found to possess singificant oestrogenic activity in immature female rats. It produced a biphasic effect on bleeding time i.e. prologation at lower dose level (200 mg/kg.) and shortening at higher dose level (400 mg./kg.). It did not produce significant effect on clotting time. Significant antispasmodic activity was also observed in isolated rat uterus preparation.

7. Karvitori (*Luffa acutangula*) Antifertility activity **PhRUFJ**

Weak to moderate antifertility activity in the Churna of fruit of Harda Resource Forest area sample (Sample- I) was observed i.e. 16.67% pregnancy inhibition at 200 mg./kg. dose level and 50% inhibition at 400 mg/kg. level. The drug had no effect on litter size, pup weight, and length. The whole plant decoction of the same sample percent produced significant antifertility activity. Sixty seven percent pregnancy prevention at lower dose level and 83% prevention at higher dose level (2.58/kg-1) was observed. Antifertility activity of similar magnitude was observed in the whole plant decoction of sample-B also (obtained from Junagarh). Fifty percent prevention was observed with 1.25 g/kg dose and 100% prevention with 2.5 g/kg dose.

Table 1

Statement of the cases Studied for Clinical Evaluation of Oral Contraceptive Agents 1996-97

Name of the drug	Centre	Studies			Number of Dropped out due to				Continuing the drug
		New	Old	Total	Pregnancy		Side effects	Other reasons	
					D.F.	D.O.			
Ayush AC-IV									
	Lucknow	34	78	112	5	-	-	34	78
	Trivandrum	54	80	134	-	1	-	65	68
	Calcutta	12	11	23	1	1	-	8	13
	Patiala	30	6	36	-	3	3	12	18
	Mumbai	25	47	72	6	-	2	12	52
	Jaipur	62	14	76	21	22	16	-	17
Pipplyadi Yoga									
	Calcutta	23	23	16	-	1	2	12	21
	Ahmedabad	35	53	88	0	1	1	21	65
Neem Oil									
	Delhi	33	34	67	1	4	-	16	46
K-Capsule									
	Varanasi	34	84	115	11	-	-	27	17
Vandhyavari									
	Mumbai	119	534	635	6	-	-	-	647

Table 2

Statement of the cases Studied for Clinical Evaluation of Oral Contraceptive Agents

Drug formulation	Drug Analysed		Drug yet to be analysed	
	Number of women studied	Total number of women cycles studied	Number of women studied	Total No. of cycles studied
1. K-Capsule Japakusum (*Hibiscus rosa- sinensis*)	776 (Max. cycles followed 103)	20344	565	
2. J-Capsule Vidanga Beej (*Seeds of Emblia ribes*)	88 (Max. cycles followed 36)	851	Nil	These Data are yet, to be complied are analysed
3. Ayush AC-IV	4073 (Max. cycles followed 36)	35615	2151	
4. Pipplyadiyoga				
Group I	861	8607		
Group II	811	4438	606	
5. Neem Oil	43	450	220	

Results

(Pearl Index- Hundred Women Years-HMY)

Details	Oral Contraceptives			IV Application		
	K- Capsules	J-Capsules	Ayush- AC- IV	Pippaliyadi Yoga Gr. I	Gr.II	Neem Oil
Due to Drug failure	2.86	0	5.59	8.09	3.52	0
Due to patient failure	1.11	0	7.62	0.55	6.48	4.6
Combined (I+II)	3.67	0	13.21	8.64	10.00	4.6

PUBLICATIONS/PARTICIPATIONS

A. Publications

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
A. Clinical and Basic Research				
1.	Bhattathiri, P.P.N. *et al.*	Management of Amavata with certain *Ayurvedic Preparations.*	J.R.A.S. Vol. 15 (No. 3-4) 115- 121, 1994	1996 (Published)
2.	Hemadri, K. Rao, S.S.B. & Acharya M.V.	Skin disease- tribal medicine	Indian Medicine 46 (2): 8-9 46 (3): 5-8	1996
3.	Kumar, N. & Kumar, A.	Evaluation of the effect of Kutajaghan vati with Shankha *Drava in the management* of Grahani Roga.	JRAS, Vol. XV (No. 3-4) 122-128, 1994	1996 (Published)
4.	Kumari, K. & Trivedi, V.P.	AIDS- a dreadful disease with its *preventive measure & rehabilitation* with special reference to Jammu and Kashmir.	Akhil Bhartiya Ay. Mahasammelan Patrika	May 1996
5.	Gupta, S., Shahi, V.K. & Mishra. D.K.	Vyan Bal Vridhi Nidan Chikitsa Mein Katipaya Ayurvedic Aushadhi *Yoga Ki* Karmukta.	Sachitra Ayurveda	Nov. 1996

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
6.	Pandey, V.N. *et al.*	An effective Ayurvedic hypoglycemic formulation.	JRAS, Vol. XVI, (No. 1-2) 1-14	1995
7.	Swamy, G.K.	Management of Sirahsula with Varunadi Kshera Ghritha Nasya.	Manphar Vaidya Patrika Vijayawada (AP), 2 (5): 32-34	Feb. 1997
8.	Uniyal, M.R.	Ayurved Mein Vraka Roga & Chikitsa.	Sachitra Ayurveda	April 1996
9.	Uniyal, M.R.	Madhumeha Ka Desi Upachar.	Jeevaniya Hemant-Shishir	1996
10.	Uniyal, M.R.	Dengue Bukhar Ke Macchar Par Prabhavkari Jadi Butiyan Avam Upachar.	Sachitra Ayurveda	Jan. 1997
B. Health Care Research & Ethno-Medicine.				
11.	Maity, S.K.	Amulya Banousadhi-Yanjadumur (Gular).	Krishi Vikas Varta	March 1996
C. Dravya- Guna, Medico Botanical Survey & Cultivation				
12.	Das, S.R. and Naskar, D.	Preliminary recording of Medicinal plants of Birbhrum Distt. (W.B.)	BMBER XV (1-4) 1-21, 1994	1996 (Published)

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
13.	Dixit, R.S. *et al.*	Some Important Ayurvedic Medicinal plants of Bundelkhand.	Sachitra Ayurveda Ist Part, 10-33	May 1996
14.	Dixit, R.S. *et al.*	Some Important Ayurvedic Medicinal plants of Bundelkhand.	Sachitra Ayurveda IInd Part, 10-96	June 1996
15.	Hakim, A. & Badola, O.P.	The Forest type of Udhampur forest Division (J. & K.).	BMEBR, Vol. XV (No. 1-4), 41-49, 1994	1996 (Published)
16.	Maity, S.K.	Amulya Banousadhi-Betoshak (Bathua).	Krisi Vikas Varta	Jan. 1997
17.	Maity, S.K.	Amulya Banousadhi-Bel.	Krisi Vikas Varta	Sept. 1996
18.	Maity, S.K.	Amulya Banousadhi-Gulancha.	Krisi Vikas Varta	July 1996
19.	Nair, K.V., Nair, A.R. & Nair, C.P.R.	Bio-diversity of Medicinal plants based on Ayurveda.	BMEBR, XVI, No. 3-4 143-147, 1995	1996 (Published)
20.	Rawat, M.S.	Ethno-Medico-Botanical aspects of some plants of Arunachal Pradesh	BMEBR, Vol. XVI, 83-89, 1995	do-
21.	Shankar, R. *et al.*	Some important Ayurvedic Medicinal plants of Arunachal Pradesh.	BMEBR, Vol. XVI, 27-32, 1995	do-
22.	Shankar, R. *et al.*	Some medicinal Pteridophytes from the District Lower Subhansiri and Papumpare (A.P).	BMEBR, Vol. XV, 36-40 1994	do-
23.	Shankar, R. *et al.*	Medicinal Plants from Dibang Valley (A.P.) -social forestry and Afforestration.	BMEBR, Vol. XIV, (No. 3-4), 144-149, 1993	do-

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
24.	Uniyal, M.R.	Himalaya Mein Jari-Bhutiyan Ki Safal Kheti.	Sachitra Ayurveda	June 1996
25.	Uniyal, M.R.	Uttrakhand Ke Janpatho Mein Kattir Udog Avam Ausodh Upayogi Vanaspatiyan.	Sachitra Ayurveda	Oct. 1996
26.	Uniyal, M.R.	Rajasthan Mein Sanaya Ki Safal Kheti.	Ayurveda Mahasammelan Patrika	Feb. 1997
27.	Uniyal, M.R.	Rajasthan Ke Jodhpur Barmer Janpath Mein Sanaya Ki Kheti.	Sachitra Ayurveda	Nov. 1996
D. Pharmaceutical, Pharmacognostical & Chemical Research				
28.	Chatterjee, A. *et al.*	Now Synthesis of (±) 2,3 Dimethory-hexahydroberbine.	Ind. J. Chem. 36B	1997
29.	Joshi, P.C. & Mandal, S.	Isolation and Identification of Komalin from *Boenninghausenia albiflora* Rechb. ex Meissm.	BMEBR, Vol. XV (No. 1-4), 101-105, 1994	1996 (Published)
30.	Joshi, P.C., Mandal, S. & Das, P.C.	Coumarins and Alkaloids of genus *Boenninghausenia*-A Review	BMEBR, Vol. XVII (No. 1-2), 52-61	1996

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
31.	Mandal,S *et al.*	Chemical examination of Anantamul (*Hemidesaus indicus* B.Br.).	BMBER, XV (No. 1-4), 82-85, 1994.	1996 (Published)
32.	Roy, R. *et al.*	Phytochemical investigation of *Anamita coculus*	Ind. J. Che. Soc., 74, 61.	1997
E. Pharmacology				
33.	Leena, K.B., Shenoy, R.T. & Nair, R.B.	An experimental for Tropical Pancreatitis.	Proceeding of 9th Kerala Science Congress, STEC.	1997
34.	Roy, R. *et al.*	Antifugal activity of the flavonoids from roots of *Clerodendron infortunatus.*	Fitoterapia, 67, 473	1996
35.	Shaney, K.T., Leena, K.B. & Nair, R.S.	Pancreatic changes (Enzymes & Histological), in an experimental model fed with *Cassava based* diet.	In Tropical Tuber Crops Problems, Prospects & future stratagies, Oxford & IBH Pub. Co. Ltd. New Delhi	1996
36.	Singh, R.K *et al.*	Pharmacological actions of *Pongamia pinnata* seeds- A Preliminary study.	Ind. J. Exp. Bio. 1204-1207	1996
F. Literary & Miscellaneous				
37.	Ali, Momin	A Brief History of Indian Alchemy covering Transitional & Tantric periods (Circa 800 AD 1300-AD).	IIHM, Vol. 26, (1-2)	March 1996

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
38.	Ali, M. & Ramachari, A.	One hundred fifty years of Osmania Medical College (1846-1996).	IIHM, Vol. 26 (1-2)	March 1996
39.	Ali, M.	Studies in the *Charak Samhita* by Dr. Aparna Chattopadhyay.	IIHM, Vol. 26 (1-2)	March 1996
40.	Ali, M.	Sarve Santu Niramaya (Samnya Roga-Saral Chikitsa by Dr. R.N. Sharma).	IIHM, Vol. 26 (1-2)	March 1996
41.	Ali, M.	Book Review Abul fatqh-A commentator of Ali -Oanoon.	IIHM, Vol. 26 (1-2)	March 1996
42.	Hussain, S.A.	Abul Fatah- A commentator of Al-Oanoon.	IIHM, Vol. 26 (1-2)	March 1996
43.	Hussain, S.A.	Moabjat- E- Hindi.	IIHM, Vol. 25 (1-2)	Nov. 1996
44.	Hussain, S.A. *et al.*	Lesser known Ayurvedic physicians of India from an Urdu Book- Rumooz-ul Atibba.	IIHM, Vol. 26 (1-2)	March 1996
45.	Kumari, K.K.	Balanced Diet in Ayurveda.	Ind. Med. Monthly Journal. Vijayawada (A.P.).	Oct. 1996
46.	Kumar, Vinod *et al.*	Eminent Ayurvedic Physicians of Nizam Dynasty.	IIHM, Vol. 25 (1-2)	Nov. 1996
47.	Mehendala, V.V.	Runga, Ani Chikicchaka.	Tarun Bharat	Feb. 1997

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
48.	Narayana, A.	A Medico-Historical review of Arjuna.	IIHM, Vol. 26 (1-2)	March 1996
49.	Narayana, A.	Khadira (Acacia catechu Willd.) A Medico-Historical Review.	IIHM, Vol. 26 (1-2)	March 1996
50.	Narayana, A.	Medical Science in Ancient Indian culture with special references to Atharvaveda.	IIHM, Vol. 25 (1-2)	Nov. 1996
51.	Sharma, P.C.	Onion: A valuable dietary article for Diabetics.	Nisargopachar Varta, Year 4, Vol. 10	Oct. 1996
52.	Sharma, P.C.	Garlic: A condiment of High Medicinal Value.	Nisargopachar Varta, Year 4, Vol. 11	Nov. 1996
53.	Sharma, P.C.	Apamarga: A remedy for liver disorders.	Nisargopachar Varta, Year 4, Vol. 12	Dec. 1996
54.	Sharma, P.C.	Kalmegh: A remedy for liver disorders.	Nisargopachar Varta, Year 5, Vol. 1	Jan. 1997
55.	Sharma, P.C.	Kumari: A valuable dietary article for Diabetics.	Nisargopachar Varta, Year 4, Vol. 9	Sept. 1996
56.	Sharma, P.C.	Vacha: A valuable dietary articles for Diabetics.	Nisargopachar Varta, Year 4, Vol. 8	Aug. 1996

S.No.	Name of the Author (s)	Title of the paper	Name of the Journal	Date of Publication
57.	Sharma, P.C.	Antibala- A valuable dietary article for Diabetics.	Nisargopachar Varta, Year 4, Vol. 5	May 1996
58.	Sharma, P.C.	*Vasa*- A valuable dietary article for Diabetics.	Nisargopachar Varta, Year 4. Vol. 6	June 1996
59.	Sharma, P.C.	*Shatavari*- A valuable tonic for lactating women.	Nisargopachar Varta, Year 4, Vol. 4	April 1996
60.	Sharma, P.C.	*Palasha*- A valuable tonic for lactating women.	Nisargopachar Varta, Year 4, Vol. 3	March 1996
61.	Subhakta, P.K.J.P.	Embrylogy in Holy Bible.	IIHM, Vol. 26, (1-2)	March 1996
62.	Swamy, G.K.	Importance of Sirah (Head).	Ind. Med. Journal 46. (6): 6-7	Sept. 1996
63.	Uniyal, M.R.	Ayurveda Shiksha Ke Adhyana Prashiksh-ana Tatta Vishayaki Prastha Bhoomi Par Vichar.	Sachitra Ayurved	Feb. 1997
64.	Uniyal, M.R.	Divyoshodhi Adjityaparni-Brahamu suvrchala	Ay. Mahasammelan Patrika	July 1996
65.	Uniyal, M.R.	Nanatamak Vatavayadhiyo ka Ay. Mahoausadhi- Guggulu.	Ay. Mahasammelan Patrika	Nov. 1996
66.	Uniyal, M.R.	Sarvashastha Sawasthya Ka Adhara -Nidra.	Sachitra Ayurved	Aug. 1996
67.	Uniyal, M.R.	Bhartiya Varksho Mein 'Pippal'.	Jeevaniya Patrika	1996

II. Participations

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
A. Clinical and Basic Research			
1.	Arya. M.P.S. *et al.*	Epidemiolagical survey and clinical trial of various sets of single and compound Ayurvedic formulation in different stages of Slipada.	Workshop on Slipada at CRI (Ay.) Bhubaneshwar (CCRAS), 22-23/4/1996
2.	Audichya, K.C.	Med. plants and Kidney disorders.	National Seminar on Kidney Disorders, Shimala, Oct. 1996
3.	Bhatia, D. and Kishore, P.	Laboratory diagnosis of Tamak Swasa (Bronchial Asthma).	Workshop on Tamak Swasa, IIK, Patiala, 13-14 March 1997.
4.	Bhattithiri, P.P.N.	Activities of RRC (Ay.), Vijayawada with special reference to Slipada.	Workshop on Slipada at CRI (Ay.) Bhubaneshwar (Orissa), 22-23/4/96
5.	Bikshapathi, T. *et al.*	A review of clinical studies on Slipada.	-do-
6.	Bikshapathi. T.	Clinical study of *Picrorhiza kurraea* in cases of Bronchial Asthma.	Workshop on Tamak Swasa, IIK, Patiala, (CCRAS), 13-14 March 1997

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
7.	Bikshapathi, T.	Cetrain medicinal plants in the management of Bronchial Asthma.	Workshop on Tamak Swasa. IIK, Patiala, (CCRAS), 13-14 March 1997.
8.	Chaturvedi, D.D. *et al.*	A clinical trial of Vardhman Pippali Prayoga and Shirish Twak kwatha in the management of Tamak Swasa.	Seminar on Tamak Swasa, IIK, Patiala, 13-14/3/97.
9.	Chaturvedi, D.D.	A paper on Pakshaghat presented at Jamnagar.	Workshop on Pakshaghat organised by CCRAS, April 1996.
10.	Chopra, K.K.	Pre-Auricular sinas Management of a rare Disease with Kshara Sutra.	35th World Congress on Natural Medicines organised by Shr. Venkateshwar University, Tirupathi 14-16/3/97.
11.	Chopra, K.K.	Tamak Swasa Mein Anubhuta Ausadi Prayoga.	Workshop on Tamak Swasa, IIK, Patiala 13-14/3/97.
12.	Jaya, N. & Madhav, K.	A preliminary study on Vamankarma.	All India Seminar on advances in clinical Application of Panchakarma therapy held at Vijayawada 14-15/12/96.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
13.	Kumar, A. & Kumar, N.	Clinical experience of participants about various Herbal Folk medicines in field.	Training Programme of Medical Officers (ISM) & H& M. Education Deptt. of J& K 20th March, 1997.
14.	Kumar, A. & Kumar, N.	Clinical experience of various formulations tried in CCRAS.	Sr. Training Programmes of Medical Officers, (ISM) & H& M. Education Deptt. 2nd Dec. 1996.
15.	Kumar, A. & Kumar, N.	Applicability of preventive paradigm in the management of Tamak Swasa.	Workshop of Tamak Swasa, IIK, Patiala 13th-14th March, 1997.
16.	Kumar, N. & Kumar, A.	Pittasthana origin of Swasa vis-a-vis management with Vaca (*Acorus calamus*).	Workshop on Tamak Swasa. IIK, Patiala, 13th-14th March, 1997
17.	Kumari, K.K. & Bikshapathi, T.	Clinical evaluation of PAS in the management of Slipada.	Workshop on Slipada at CRI, (Ay.) Bhubaneshwar (Orissa) 22-23/4/1996.
18.	Kumari, K.K. *et al.*	A clinical study with L.H.Y. compound in the management of Tamak Swasa.	Workshop on Tamak Swasa, IIK, Patiala, 13th-14th March, 1997.
19.	Menon, T.V.	Clinical studies on Pakhaghata (Hemiplegia).	Workshop on Clinical Research Methodology, held at Jamnagar, 8-9/4/96.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
20.	Nair, P.K.S.	Clinical evaluation of certain Ayurvedic formulations/Panchakarma Therapy in the management of Amavata (Rheumatoid arthritis) and clinical parameter for the assessment of response in research studies on Sandhirogas with special reference to Amavata.	Workshop of Clinical Research Methodology held at Jamnagar, 8-9/4/96.
21.	Nair, P.K.S. *et. al.*	Role of Panchakarma therapy in the managment of Low Back Pain.	All India Seminar on advances in clinical application of Panchakarma therapy held at Vijayawada, 14-15/12/96.
22.	Namboodiri, P.K.N.	Methodology in qualifying clinical Parameter in Pakshaghata (Hemiplegia).	Workshop of Clinical Research Methodology held at Jamnagar, 8-4/4/97.
23.	Nanda, G.C. & Pathi, M.M.	An analytical discussion of criteria of assessment in various stages of Slipada (Filariasis).	Workshop of Slipada. CRI (Ay.), Bhubaneshwar 22-23/4/96.
24.	Narayan, A.	Scientific Analysis of clinical trial in Slipada.	-do-

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
25.	Narayana, A.	Therapeutic Aspect of Charaka with special reference to Tamak Swasa.	Scientific Seminar on management of Swasa Roga, Greater Hyderabad Ay. Sammelan, 25-8-96, Hyderabad.
26.	Narayana, A.	Role of Indigenous drugs in Diabetes and colic pain.	Scientific Seminar on management of Swasa Roga, Greater Hyderabad Ayurveda Sammelan 30-6-96 .
27.	Padhi, M.M., Nanda, G.C. & Arya, M.P.S.	Clinical study of Sudarshan Ghana Vati, Ayush- 55 and Punarnavarishta in chronic cases of Slipada.	Workshop on Slipada, CRI (Ay.), (Bhubaneshwar CCRAS, 22-23/4/96.
28.	Pandey, P.N., Kishore, P. & Padhi, M.M.	Comparative evaluation of clinical trial of various Ayurvedic formulation in different manifested stages of Slipada.	-do-
29.	Pathak, N.N.	Tamak Swasa (Bronchial Asthma) Mein Talasindur ka Prayoga.	Workshop on Tamak Swasa, IIK, Patiala, 13-14, March 1997.
30.	Rama Rao, B.	Clinical evaluation of selected Ayurvedic preparation in *Pakshavadha* and Sandiroga.	Workshop on clinical Research Methodology held at Jamnagar, 8-4/96.
31.	Rao, P.V., Bikshapathi, T. & Bhattathiri, P.P.N.	Effect of L.H. Ksheerapaka in the treatment of Tamak Swasa.	Workshop on Tamak Swasa, IIK, Patiala CCRAS 13-14, March 1997.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
32.	Reddy, K.N.	Arogya Karya Krammam. The most importance of Panchakarma chikitsa in Ayurveda.	Telecated in Television, Hyderabad Telugu Programme, 1.1.1997.
33.	Ruhil, S.D., Goyal, H.R. & Kishore, P.	Pippali Rasayan in the management of Bronchial Asthma.	Workshop on Tamak Swasa, IIK, Patiala, March, 97.
34.	Sahu, D.P. & Arya, M.P.S.	Review on morbidity & diagnostic aspect of *Bancroftian Filariasis.*	Workshop on Slipada, CRI, Bhubaneshwar, (CCRAS), 23-24 March, 1996
35.	Sahu, D.P.	Diagnostic tests and staging in Bronchial Asthma.	Workshop on Tamak Swasa, Patiala, CCRAS 13-14 March, 1997.
36.	Prabhakaran, V.A. and Santha kumari, K.	Role of Jalaukavacharana in various disease conditions.	All India Seminar on advances in clinical applications of Panchakarma therapy held at Vijayawada, 14-15/12/96.
37.	Sharma, B.B.	A lecture on 'Vata Vikar and its treatment in Ayurveda.	Gayatri Seva Mandal, 8.9.96 at Ghat Kopar., 8.9. 1996.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
38.	Sharma, M.	Etiopathogenesis of Slipada.	Workshop on Slipada, CRI, Bhubaneshwar, CCRAS, 22-23/4/96.
39.	Sharma, R.K. & Dave, S.K.	Role of Vasavaleha (Ghan) in Tamak Swasa.	Workshop on Tamak Swasa, IIK, Patiala 13-14, March 1997.
40.	Singh, V.K.	Clinical trial of Tamak Swasa (Bronchial Asthma) using Ayurvedic drug.	-do-
41.	Swamy, G.K.	Clinical evaluation of Sirisha Twaka Kwath in the management of Tamak Swasa (Bronchial Asthma).	-do-
42.	Swamy, G.K.	Management of Sirahsula with Varunadi Ksheera & Ghritha Nasya.	All India Seminar on Advances in Clinical application of Panchakarma therapy, Vijayawada (A.P.), 14-15/12/96.
43.	Swamy, G.K. *et al.*	Effect of Ayush-64 and Saptaparna Ghana Vati in the prevention of Slipada (Elephantiasis).	Workshop on Slipada at CRI, (Ay.) Bhubaneshwar (Orissa). 22-23/4/96.
44.	Tripathi, K. & Upadhyaya, L.	Effect of Shirish on Tamak Swasa.	Workshop on Tamak Swasa, IIK (Patiala), 13-14, March 1997.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
45.	Venkataram, B.S.	Ayurvedic defination and classification of Manovikara (Mental illness).	Indo- US Workshop, Bangalore, 10.10.96.
46.	Venkataram, B.S.	Clinical trials carried out at the Ay. Res. Unit, (CCRAS), Bangalore.	Indo- US Workshop, Bangalore, 10.10.96.
47.	Venugopal, A.M.	Clinical study of 'TE' formula on Bronchial Asthma.	Workshop on Tamak Swasa, IIK, Patiala, 13-14, March 97,
48.	Venugopal, A.M. *et al.*	Clinical trial of Sameera Pannaga Rasa with Vardhamana Pippali Ksheerapaka on Tamaka Swasa	Workshop on Tamak Swasa, IIK, Patiala, 13-14, March 97
B. Health Care Research and Ethno Medicine			
49.	Billore, K.V. *et al*	Interesting folklores of the Lok Vaidyas of Rajasthan on Swasa Rogas.	Seminar on Tamakswasa, IIK, Patiala, 13-14, March 97.
50.	Narayana, A.	Ancient Traditional dietetics vigour and therapeutics.	Regional workshop on Indian Traditional Food, organised by CFTRI, Mysore on 19-20, Sept. 1996.
51.	Narayana, A.	Tribal Folk Therapy-The Art of Healing..	International Conference, Indira Gandhi Rashtriya Manas, Sangrahalaya, Bhopal 25 Oct. to 1 Nov. 1996.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
C. Dravya Guna, Medico-Botanical Survey and Cultivation			
52.	Billore. K.V.	On the need for conservation of Medicinal plants in Amrkantak.	National Conference on the relevance of Taxonomy in conservation, Sagar University 1996-97.
53.	Brindha, P.	*Ex situ* and *In situ* conservation of Medicinal plants at Pachamalai Hills.	National Seminar on Tribal Ecology & Development held at Madras, Sept. 1996.
54.	Chelladurari, V.	Medico-ethno-botany of Kanis of Paranasam hills (Tamil Nadu).	National Symposium on Natural Resourse S.J. College, Tiruchirapplli, 26-28, Feb. 97.
55.	Sharma, P.C.	Depletion of Medico-Botanical resources-A Challenging task in Conservation.	Seminar on Perspectives of Medico-Botany, June, 1996.
56.	Singh, P.B.	Therapeutic status of the flora of H.P (N.W. Himalaya).	35th World Congress on Natural Medicine S.V. University, Tirupati, 1997.
57.	Uniyal, M.R.	Medicinal and aromatic plants.	Seminar-Indian Medical Research Institute, Patna, Dec. 1996.
58.	Singh, P.B.	Legumes of Himachal Pradesh with particular reference to their Economic uses.	International workshop on plant species. N.B.R.I., Lucknow, March 1997.

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
D. Pharmaceutical, Pharmacognostical & Chemical Research			
59.	Billore, K.V.	On the Problem of collection and supply of genuine raw drugs.	Conference on the Strategy for Development of Phyto-medicine, New Delhi 1996-97.
E. Pharmacology			
60.	Banerjee, R.	Pharmacological observation of indigenous medicinal plants Animal model.	84th Session of Indian Science Congress held at New Delhi. Jan. 1997.
61.	Vanjani, S. (Mrs.)	Corticosteroid therapy	Organised by the S.M.S. Medical college, Jaipur 28.1.97.
F. Literary & Miscellaneous			
62.	Chaturvedi, D.D.	Neem-An overview.	Mumbai. Seminar on Neem organised by Neem Foundation. 20.11.96.
63.	Das. B. *et al.*	Evolution of disease entity slipada (Filariasis) and its treatment in Ayurvedic texts.	Workshop of Slipada. CRI, (Ay.) Bhubaneshwar CCRAS, 22-23/4/96

S.No.	Name of the Author (s)	Title of the paper	Name of the Conference/Seminar/Workshop and Date of Participation
64.	Hussain, S.A. & Ali, M.	Huzoor-A-Akram Ke Ireshdat aur Ayurvedic ki Jadeed Kitaben.	All India Unani Tibbi Conference, Hyderabad, 25.8.96.
65.	Jukar, S.R.	A lecture on World Population day,	Organised by Maharashtra Kamgar Kalyan Kendra, Mumbai, 11.7.96.
66.	Kumar, A. & Kumar, N.	Development in the field of Ayurveda.	Training programme of Medical Officers (ISM) H & M. Education J & K. Deptt. 21 Nov. 1996.
67.	Narayana, A.	History of Medical & Health System in India.	National Seminar, KUPG, Centre, Nirmal A.P. 19.2.97.
68.	Narayana, A.	Preachings of prophet Mohammed Medical knowledge.	All India Unani Tibbi Conference, Hyderabad 25.8.96.
69.	Reddy, K.N.	Dhanvantri Maha Yajnam and Seminar	D.M.Y. Seminar, Govt. (Ay.) Hospital, Vijayawada 14-15, Dec. 96.
70.	Uniyal, M.R.	Pananiyasthadhyam Ayurvedasya Vaishista Lekshanam.	Akhil Bhartiya Sanskrit Sammelan (Delhi Sanskrit Academy), N. Delhi Feb. 97.

TECHNICAL REPORT- SIDDHA

S.No.	Year of Estt.	Name	Abbreviation
1.	1970	Central Research Institute, Chennai	CRISC
2.	1979	Regional Research Institute, Pondicherry	RRISP
3.	1979	Mobile Clinical Research Unit, Chennai	MCRUSC
4.	1980	Clinical Research Unit, Palayamkottai	CRUSP
5.	1981	Clinical Research Unit, New Delhi	CRUSND
6.	1986	Clinical Research Unit, Trivandrum	CRUST
7.	1979	Drug Research Scheme (MD), Chennai	DRS (MD)SC
8.	1979	Drug Standardisation Research Unit, Chennai	DSRUSC
9.	1982	Drug Standardisation Research Unit, Bangalore	DSRUSB
10.	1981	Drug Standardisation Research Unit, Trivandrum	DSRUST
11.	1971	Survey of Medicinal Plants Unit, Palayamkottai.	SMPUSP
12.	1979	Literary Research and Documentation Department, Chennai	LR & DDSC
13.	1986	Tribal Health Care Research Project, Triupathur North Arcot Dt.	THCRPST
14.	1986	Tribal Health Care Research Project, Kalasa.	THCRPSK

CLINICAL RESEARCH PROGRAMME

The Clinical Research Programme in Siddha Medicine is being carried out on selected clinical conditions by the Institutes/Units of Siddha Medicine functioning under the Council. During the reporting year the clinical conditions like Kalanjaga padai (Psoriasis), Putru noi (Cancer), Gumam (Intestinal disorders), Manjal Kamalai (Infective hepaitis), Sandhu Vatha soolai (Rheumatoid arthritis), Velluppunoi (Anaemia), Venkuttam (Leucoderma) etc. were studied.

Brief resume of work carried out on each clinical conditions are reported hereunder:

Kalanjaga Padai (Psoriasis)

Kalanjaga Padai has been taken up for study by the Central Research Institute, Chennai. The coded drug "777" oil was administered at the dose of 10 ml. with milk, two times a day, to all the cases selected for trial. The patients were also advised to apply the oil externally on the affected parts of the body. The results of the treatment are as under:

Results of clinical/therapeutic Trial of 777 oil on Kalanjaga Padai (Psoriasis)

S.No.	Drug	Total	Results of the trial			
		Cases	Complete relief	Marked relief	Moderate relief	LAMA
1.	777 Oil	93	20	39	23	11

Vathasoolai

This disease condition has been described in the Siddha texts under "Vatharogangal". The study to evaluate the effecacy of Chendamaturtham and Vatha Kesari Thailam in the cases of Vathasoolai has been taken up by the Regional Research Institute, Pondicherry. The trial drugs Chendamurtham at the dose of 200 mg. along with honey was administered in two divided doses. Vatha Kesari Thailam was advised to apply externally on the affected

parts. Fifty four (54) cases were taken up for study during the reporting year. Out of the 54 cases, 23 got complete relief, 16 cases got marked relief and 14 cases did not respond to the treatment.

Sarumanoigal (Skin disorders)

The study on the clinical condition was carried out at the Clinical Research Unit, Trivandrum. The efficacy of the drugs, Irunellikarpam and Gandhaka Rasayanam was studied in two groups patients at doses of 130 mg. and 2 gm. respectively, two times a day. The third group received combination of both the drugs. All the selected cases received Karappan Thailam or Arugampul Thailam for external application. The results of the treatment is given in the following table.

Results of clinical/therapeutic Trial of Siddha preparations on Sarumanoigal (Skin Disorders)

S.No.	Drugs	Total Cases	Results of the trial			
			Complete relief	Marked relief	Moderate relief	LAMA
1.	Irunelli Karpam (130 mg. BD) Karappan Thailam (External application)	15	10	3	1	2
2.	Gandhaka Rasayanam (2g BD) Arugampul Thailam (External application)	12	7	3	-	2
3.	Combination of S. No. 1 & 2	14	8	2	-	4
	Total	41	25	8	-	8

Yanaikkalnoi (Filariasis)

The effect of Linga Chendooram, Thalampoo Mathirai Nilavembu Kundineer and Kakkattanver Karkam and their combinations were studied on the clinical condition Yanaikkal noi at the Clinical Research Unit, Trivandrum. The study was carried out in three groups, in both carrier and manifested cases of Yanaikal noi at OPD level. 160 cases were studied during the reporting year. The following table shows the results of the study.

Results of clinical/therapeutic trial of Siddha preparations on Yanaikkalnoi (Filariasis)

S.No.	Drugs	Total Cases	Results of the trial			
			Complete relief	Marked relief	Moderate relief	LAMA
A.	Linga Chendooram	54	39	8	-	7
B.	Thalampoo Mathirai & Nilavembu Kudineer	54	30	13	-	11
C.	Kakkattan Ver Karkam	52	24	15	-	13
	Total	160	93	36	-	31

Sandhu Vatha Soolai (Rheumatoid arthritis)

Sandhu vatha soolai is described as one of the 80 Vatharogangal in the Siddha classical literature. A study to evaluate the effect of Venga chunnam in the management of Sandhu Vatha Soolai has been taken up at CRI, Chennai. The drug was administered at the dose of 200 mg. twice a day along with honey. Tamarind and chilli free diet with less salt was advised to all the 39 cases selected for the trial. 13 cases showed marked relief, 16 moderate relief and remaining 10 cases did not respond to the treatment.

Manjal Kamalai (Infective hepatitis)

The study on this clinical condition has been carried out at the Central Research Institute, Chennai. The trial drug Athimathura choornam was administered at the dose level of 1gm. in two divided doses alongwith water. 30 cases were selected for the trial during the reporting year. Out of the 30 cases, 23 showed marked relief, 4 cases showed moderate relief and remaining 3 did not respond to the treatment.

Gunmam (Intestinal disorders)

The study on efficacy of Siddha drugs in above condition was undertaken at the Regional Research Institute, Pondicherry and Clinical Research Unit, Trivandrum and Palayamkottai. The trial drugs Uppu Chendooram,

Gunmagudori Mezhugu and Kavikal Choornam were taken up for the study. Out of the 9 cases selected for the trial, 6 cases got complete relief and the remaining cases showed no response.

Vali Gunmam (Peptic Ulcer)

The disease condition is one of the eight varieties of the Gunmarogangal found in the Siddha texts. The Central Research Institute, Chennai has taken up clinical trial on this disease condition to determine the effectiveness of Suyamagni Chendooram. The patients suffering with severe pain in the epigastric region, nausea, vomiting with both eruptation and haematomesis etc., were selected for the trial. The diagnosis was further confirmed on modern parameters such as FTM, Barium meal X-ray etc. The trial drug administered at the dose of 200 mg filled in the gelatine capsules twice a day for five days. Omam bath and gengeli oil both have been advised on 6th and 7th days. This course was repeated for two more times. Nine cases were taken up for study during reporting period. Out of the nine (9) cases, 4 cases showed marked relief: 1 case moderate relief and 4 cases were discharged on medical advise.

Velluppu Noi (Anaemia)

Clinical studies were conducted in 26 cases of VelluppuNoi at Regional Research Institute, Pondicherry to determine the effectiveness of the drug Aya Bringaraja Karpam. The drug at the dose of 260 mg. three time a day along wih honey was administered for three weeks. Out of 26 cases taken up for trial 6 cases got complete relief, 8 cases marked relief and rest of the cases did not respond to the treatment.

Putru Noi (Cancer)

This disease condition has been described in the Siddha texts under the head "Verananoigal". The study was undertaken in Central Research Institute, Chennai. The coded drugs RGX, VK2, and SKX, formulated by the Institute were taken up for the trial. The drugs at the dose of 250 mg each filled in gelatine capsules were administered, twice daily alongwith milk. Ulcers and Tumors were dressed with Nithiyakalayani Kalkam and Pachaiennai with Thurusu. It is noted that all the cases showed considerable reduction in the size/growth of ulcer/tumors, reduction/or arrest of the discharge and also reduction of pain. Nine cases were studied during the reporting period. Out of which two cases showed mild relief and seven cases were discharged at request.

Neerazhivu (Diabetes mellitus)

Neerazhivu is one of the "Seruneernoigal" discribed in Siddha literature. The study in this clinical condition was taken up by Clinical Research Unit, New Delhi and Clinical wing of Drug Research Scheme (MD), Chennai. The trial drugs Abraga Chendooram and Kezhanelli Choornam were taken up to evaluate their efficacy of Abraga Chendooram and Keezhanelli Choornam in the management of Neerazhivu. The results of the treatment are tabled below:

Results of clinical/therapeutic trial of Siddha preparations on Neerazhivu (Diabetes mellitus)

S.No.	Drugs	Total Cases	Results of the trial			
			Complete relief	Marked relief	Moderate relief	LAMA
1.	Abraga Chendooram 200 RAM (200 mg. BD)	11	-	8	1	2
2.	Keezhaneli Choornam (500 mg. BD)	20	-	2	4	14
	Total	31	-	10	5	16

Vellai Noi (Leucorrhoea)

Vellai Noi is one of the Magalir Noigal described in Siddha texts. The drugs Chemparuthipoo Kudineer, Kukkil Parpam were taken up for trial, at Clinical Research Unit, Trivandrum. 23 cases were studied during the reporting year. Out of the 23 cases 17 showed complete relief, 4 showed marked relief and 2 cases did not respond to the treatment.

Eraippu Noi (Bronchial Asthma)

Eraippu Noi is one of the respiratory diseases described in Siddha Literature. The efficacy of the drugs Irunelli Karpam, Swasakudori Mathirai was studied at the Clinical Research Unit, Trivandrum. 32 cases of Eraippu Noi were selected for trial during the period. Out of 32 cases, 20 cases showed complete relief; 8 cases marked relief and 4 cases did not respond to the treatment.

Venkuttan (Leucoderma)

Venkuttam is one of the eighteen varieties of Kutta Noigal described in Siddha texts under skin diseases. The effecacy of the drugs Karunthaulasicharil Pathapaduthappata Parangipattai Choornam, Ponnimilai, Chenduram and Chirattai Thailam (external use) were studied by the Clinical Wing of Drug Research Scheme (MD), Chennai.

The details of the results of the treatment are tabled below. The study revealed that the trial drugs did not showed any toxic/side effects even on prolonged administration.

Results of clinical/therapeutic trial of Siddha preparations on Venkuttam (Leucoderma):

S.No.	Drugs	Total Cases	Results of the trial			
			Complete relief	Marked relief	Moderate relief	LAMA
1.	Parangi Pattai Choornam	3	-	-	1	2
2.	Ponnimilai Chendooram Chirattai Thailam (External)	13	-	-	4	9
	Total	16	-	-	5	11

Out Patients/in Patients attendence at a Glance

S.No.	Instt./Units	No. of patients attended O.P.D.			No. of patients attended I.P.D.
		New	Old	Total	
1.	CRI, Chennai	6275	16734	23009	180
2.	RRI, Pondicherry	3616	9671	13287	79
3.	CRU, Palayamkottai	562	3202	3764	
4.	CRU, New Delhi	11	232	243	
5.	CRU, Trivandrum	8397	9477	17874	
		18861	39316	58177	259

HEALTH CARE RESEARCH PROGRAMME

Health Care Research Programme has been carried out by the Mobile Clinical Research Units attached with Central Research Institute, Chennai and Regional Research Institute, Pondicherry and also two Tribal Health Care Research Programmes at Kalasa (Karnataka) and Tirupatur (Tamilnadu).

Brief resume of various activities under this programme should also be given.

Tribal Health Care Research Programme

THCRPST

The team conducted periodical study tours in the 12 tribal pockets of Jawadhi Hills, Bhimakulam and Pungampattunadu of Alangayam Block and also nearby villages of Tirupathur Block. The team conducted 32 trips and covered 26, 918 individuals from the total population. 1339 patients were provided incidental medical aid for the treatment of Erigunman, Itaippunoi, Kudarpuzhunoi, Neerkkovai, Moolam, Palnoigal, Sirangu, Peenasam, Soothaganoi etc. 24 villages were covered under Community Health Programme and health statistic were collected from 2416 individuals.

THCRPSK

The team conducted 45 visits and about 20,600 individuals were covered and health statistics were recorded. 2465 cases were provided incidental medical aid. Erapippunoi, Erumal, Gunmam, Valigunmam, Karappan, Keelavayu, Suram oothalnoi, Peenasam etc. were found common in the area.

Mobile Clinical Research Programme

MCRUSC

The team conducted 80 visits to the village patients during the reporting year and collected information on 463 individuals. Incidental medical aid were provided to 1642 patients. It was also noted that most of the villagers were suffering from one or more diseases. Irumal, Eraippunoi, Vaeeruvali, Vellai, Muttuvali, Thalivali, Surangoigai, Tholnoigal, Pun, Naalpattpun etc. were commonly found in the areas covered under the study. Out of 1642 cases reported treated during visits 463 cases are new and 1179 cases are old.

MEDICO-BOTANICAL RESEARCH PROGRAMME

Medico-Botanical Survey Unit functioning at Govt. Siddha Medical College, Palayamkottai was established in the year 1971. During the past two and half decades the Unit is engaged in exploring the availability of medicinal plants especially used in Siddha Medicine in the forest areas of Tamil Nadu. The study on identification, quantitative and qualitative availability of the genuine drugs, their substitute/adulterants etc. are also being taken up.

It is a wellknown fact that "Drug" (Mrunthu) is the primary tool of entire Research programme. Survey of forest areas for procuring drugs and arranging the supply of required materials for research purpose occupies an important place.

During the reporting year, the survey unit conducted 4 tours in and around Nellai forest areas for collecting the medicinal plants for supply to other units. 164 specimens belonging to 55 families, 121 genera and 136 species were collected and reported.

Out of 164 specimens collected and 74 specimens were added to the herbarium. Some of the important plants of Siddha medicine are Periyanangai (*Andrographis macrobotarays* Nees), Kodikathotti (*Capparis moonii* wight), Kongu *(Hopea utilis* (Bedd.) Bole, Kozhukkattai (*Arisia solanacea* Roxb.), Naval (*Syzygium cumini* Skeels), Kadambu (*Neolamaewkia cadamba* Bosser), Maavu (*Mangifera Indica* L.), Chilavagai (*Albisia odoratissima* Benth), Surapunnai (*Calophyllum* wall), Vallaikayyampoo (*Memecylon angustifolium* wight), *Pasumunnai (Premna latifolia* Roxb.), *Kattukoyya (Eugenia calacadensis* Bedd.), Kamachipullu, (*Eriocaulon quinquangulare* L.) Naruvilaikodi (*Naravelia zeylanica* (L.) Kalaththi (*Ficus microcarpa* L.), *Karukka (Flacourita indica* Merr.), Unnu (*Grewia tiliaefolia* Vahl.), Perumkattukodi (*Pachygone ovate* Poire Misrs), Mayilai (*Vitex altissima* L.), Vandalai (*Givotia rottleriformis* Griff), Kottai (*Zizyphus xylopyrus xylopyrus* (Retz) Willd., Irumbaeuthan (*Ficus exasperata* Vahl), Vellailai (*Mussaenda frondosa* L.), Kanapoondu (*Pavonia odorata* Willd.), Karuvielanchikudam (*Smilax zeylanica* L.), Virali (*Dodonaea*), Kodumpuli (*Garcinia gummigutta* Robs.), Kadichai (*Caesaria tubescens* Dalz.), Aartu vanji (*Salix tetrasperma* Roxb.), Kaya (*Memecylon edule* Roxb.), Nagamalli (*Rhinacanthus nasutus*

Kurz.), Kozhinji (*Tephorsia pumila* Pers.), Palkorandi (*Lepidagathis spinosa* Wt. Ex. Nees.), Kulavu (*Kingiodendron pinnatum* ex. Dc.), Kal thamarai (*Begonia floccifra* Bedd.), Lavangapaththiri (*Cinnamomum macrocarpum* Hook. f.) etc.

10 different part of the plants were collected and added to the museum the total raising to 742 drugs samples.

35 folk-medical claims were collected during the survey from Kanitribes of Papanasam hills for jundice, arthritis, contraceptives, tooth-ache, cuts and wounds, snake bite, skin disorders, piles, boils and glandulos, swellings etc.

Details of 683 medicinal plants which are used in Siddha and Ayurveda preparations in respect of their availability, part (s) used, economic status etc. were collected and reported. Botanical identy of 25 unreported medicinal plants which are used in Siddha preparations were also reported.

PHARMACOGNOSY RESEARCH PROGRAMME

The Pharmacognosy Research Programme is being undertaken at Pharmacognosy Research Wing functioning in DRS (MD), Chennai. During the reporting year pharmacognostic study on the drug Al (*Ficus religiosa* L.) was reported.

The study includes medicinal uses of the drug, its distribution, qualitative availability and description besides macro and microscopical characters, physico-chemical constants and preliminary phyto-chemical screening for the presence of active principles.

PHARMACOLOGICAL RESEARCH PROGRAMME

The Pharmacology Research Programme has been carried out by the Pharmacology Section of the Central Research Institute, Chennai and Pharmacology wing of Drug Research Scheme (MD), Chennai. The study has been conducted on the pre-determined experimental models in the laboratary attached to the Institute. The following single/compound drugs are studied for their efficacy and also to determine their effect as anti-inflammatory, antitoxic and analgesic.

1. Anti-inflammatory studies

1. Naga parpam
2. Athimathura churnam
3. Thair chundi churnam
4. Sivanar amirtham

2. Aute toxicity studies

5. Athimathura churnam
6. Vatha kesari Thailam
7. Naga parpam
8. Veppapithu churnam
9. Thazhamkoo Mathirai
10. Annabedi chendooram
11. Vanga parpam
12. Vanga chunnam

Anti-inflammatory studies:

Carrageenin induced paw-oedema with Naga parpam 100 mg/kg. the drug Athimathura churnam 200mg/kg., their Chundi churnam in doses 50, 100, 200 and 2000mg./kg. were conducted and the data collected are being analysed statistically.

Cotton pellet granuloma with the drug, their Chundi churnam 100 mg/kg. Sivanar Amistham 200mg/kg were conducted and the data collected are processed statistically and results will be communicated.

Acute-toxicity studies

Athimathura churanam in the dose level of 6000, 7000 and 8000 mg/kg.; Vathakesari Thailam at the level of 2.5 and 100 ml./kg. Naga parpam at the dose level of 6000, 8000 and 9000 mg/kg.; Vappam vithai churnam at the dose level of 50, 100, 5000mg/kg.; Annabedi chendooram at the dose level of 500 and 6000 mg./kg.; Thazhamboo Mathirai at the dose level of 5000 and 8000 mg./kg.; Vanga chunnam at the dose level of 50, 200, 500 mg./kg.; Vanga parpam at the dose level of 5000 and 8000 mg/kg.; did not manifest any toxic effects.

But the drug Naga parpam at the dose level of 8000 mg./kg. manifested mortality of 33.33% on both species; the drug Vathakesari Thailam on albino mice at the dose of 10ml/kg manifested diarrhoea till 24 hours but the litter return to normal. No other toxic symptoms were noted.

PHARMACEUTICAL/STANDARDISATION RESEARCH PROGRAMME

The Drug standardisation plays an important role for obtaining authentic medicinal preparations and genuine single drugs for the therapeutic efficacy. It also occupies, important place in both drug and applied clinical research because this provides approach data for obtaining genuine single drugs and authentically prepared compound medicines. The standardisation work, on the drugs of Siddha Formulary (Part-I) has been taken up for study alongwith with the single drugs entering into the selected formulations. The study was carried out at 1. Drug Standardisation Research Unit at CSMDRIA, Chennai; 2. Drug Standardisation Research Unit at RRI (DR), Trivandrum; 3) Drug Standardisation Research Unit at RRC (Ay.) Bangalore.

The programme aims at the study of single drugs, pharmaceutical process involved in the manufacture of the formulations and finished products including laying down their analytical standards:

A. List of single drugs on which phyto-chemical studies have been done (Analytical studies)

S.No.	Name of the drugs	parts analysed	Name of the Instt./Units
1.	Araikera (*Marsilea quadifolia* L.)	Leaves	DSRUST
2.	Kattathi (*Bauhinia malabarica* Roxb.)	Stembark	-do-
3.	Anathazhai (*Pandanus tectorius* Soland ex Parkison)	Root	-do-
4.	Iyvirali (*Bryonopsis laciniosa* (L)' Nand.	Aerial root	-do-
5.	Andimalli	Leaves	DSRUSB
6.	Itti	Stembark	-do-
7.	Palipamchedi	Stembark	-do-
Animal Product			
8.	Gorojanam (*Bostaurus* L.)		DSRUSC

Pharmacopoeial standards (Analytic Standards) of finished products:

1.	Velliparpam	DSRUST
2.	Velli chendooram	-do-
3.	Pancha lavana parpa,	-do-
4.	Kadikkara chendooram	DSRUSB
5.	Uppu Chenduram	-do-
6.	Kungilya Parpam	-do-
7.	Padikaraparapam	DSRUSB
8.	Mattan Thailam	-do-
9.	Thamira Parpam	-do-

Phyto-chemistry

1. Kattu elumichai (*Alalantia monophylla* Corr.)
2. Ponthagarai (*Cassia occidentalis*)

Pharmacognosy

The pharmacognostical studies on the following single drugs which enter into the Siddha Formulary-part-I have been carried out and reported.

1. Thokkalam (*Aglaia roxburghiana*)
2. Mutchangan (*Azima tetragantha* Lan.)
3. Chemmulli (*Barleria prionitis* L.)
4. Iyviralli (*Bryonopsis lociniosa* (L) Nand)
5. Itti (*Dalbergia lantofolia*)
6. Pulipam chedi (*Tamraidus indica*)
7. Thuringi (*Albizzia anaran*)
8. Samuddira oacehai (*Argyeria nervosa*)
9. Kadambu (*Sachharum officinarum*)
10. Vazha pazham (*Musa paradisiaca*)
11. Aliverai (*Lepidium sativum* L.)
12. Ammanpacharisi (*Euphorbia pilulifera* L.)
13. Kattatti (*Ficus oppositifolia* Roxb.)

Apart from this TLC studies were completed on 21 medicinal plants.

PHARMACY

The pharmacy attached to Central Research Institute (Siddha), Chennai engaged in the preparation of classical preparations found in the Siddha literature and also chosen trial drugs for the Institutes/Units of Siddha medicine under the Council.

The raw drug requirement of the Pharmacy is met through the medico-ethno-botanical survey projects and also from the local markets. The drugs are identified by the experts in the field of Siddha medicine and Pharmacognosy to determine its genunineness/authenticity.

The method of preparation of the medicines are based on the literature of preparation required for research and general use are being prepared in the pharmacy. Various types of medicines prepared in the pharmacy are Chendooram, Choornam, Thailam, Nei, Parpam, Ennai, Kalkam etc. During the reporting period 754.9 kg. of Chendooram, Chooranam, Parpam etc. and 465.4 litres of oil based drugs were prepared.

The pharmacy also supplied prepared medicines to the following Institutes/Units of Siddha under the Council. The following tables shows the name of the units and the quantity of the medicines supplied:

S.No.	Name of the Units (s)	Quantity	
		Solids in Kg.	Liquids in Ltrs.
1.	CRU, Trivandrum	25.500	-
2.	CRU, Palayamkottai	9.700	5.000
3.	DRS (MD), Chennai	17.800	0.700
4.	MCRU, Chennai	28.830	-
	Total	56.330	5.700

LITERARY RESEARCH PROGRAMME

Literary Research Programme has been carried out by the Literary Research and Documentation Deptt. Chennai. The work carried out during the reporting year are as given under:

- Theriyar Kudineer-100 (2nd edition): The book was printed during the year. This is an original work dealing with simple home made remedies for common ailments.

- Konganar Muddal Kandam-1000: The printing work is in progress. The book is dealing with fundamental principles and some very important prescriptions for disease like leporosy, tuberculosis and skin disorders and jaundice etc.

- Aggathiyar- 205. The printing work is in progress. The book is an original work dealing with method of some compound preparations using mercury, sulphur, scramkottai etc. and also deals with fundamental principles of Siddha medicine.

- Bogan Karukadai Nigandu-500 and Agathiyar Sowmiya Sagaram-1200: Indexing, Classification and Editing work has been completed and press copies are being prepared.

- Original manuscripts are being laminated and preserved.

- The unit has sold Council's publications for Rs. 3416.50 during the reporting year.

ACKNOWLEDGEMENT

The Director of the Council places on records its deep appreciation for the service rendered by the members of the Governing Body, Finance Committee and Scientific Advisory Committees. The valuable assistance guidance and continued support given by them to the Council in the conduct of its work is acknowledged with gratitude.

The Director of the Council also places on record his gratitude and deep sence of appreciation to scientists and scholars of various disciplines of medical system and other ancillary sciences, Universities and Government agencies who are directly or indirectly associated with this Council and officials of all the research projects including the Headquarters office for their cooperation in implementing the various programmes undertaken during the period under report.

The Council avails this opportunity to convey its profound thanks to Government of India. Ministry of Health and Family Welfare for their continuous support, helpful attitude and cooperation which enabled the Council to pursue its activities in the field of research and hopes to receive their continued support and cooperation in future also for the over all development of Ayurveda and Siddha.

The Councils places on record the efforts of Deputy Director (Pharmacognosy), Programme officers and Stat. Officer for bringing out the Annual Report in the present form.