



**ANNUAL REPORT  
1973-74**

**CENTRAL COUNCIL FOR RESEARCH IN INDIAN  
MEDICINE AND HOMOEOPATHY**  
New Delhi-110024



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Central Council for Research in  
Indian Medicine & Homoeopathy

भारतीय आयुर्वेद विद्यापीठ संशोधन परिषद  
केन्द्रीय आयुर्वेद संशोधन परिषद  
1972

## RESOLUTION

The Government of India are pleased to constitute an autonomous Central Council for Research in Indian Medicine and Homoeopathy to initiate, guide, develop and coordinate scientific research in the different aspects, fundamental and applied of Ayurveda, Siddha, Unani and Homoeopathy Systems of Medicine and Yoga Therapy. The Central Council shall be registered as a Society under the Societies Registration Act, 1860—vide Resolution No. F. 1-3/68-AE dated the 22nd May, 1969.

## Aims and Objects

1. The formulation of aims and patterns of research on scientific lines in the Indian Systems of Medicine like Ayurveda, Siddha, Unani, Homoeopathy Systems of Medicine and Yoga.
2. The prosecution of and assistance in research, the propagation of knowledge and experimental measures, generally in connection with the causation, mode of spread and prevention of disease.
3. To initiate, aid, develop and co-ordinate scientific research in different aspects, fundamental and applied of the Indian Systems of Medicine and Homoeopathy and Yoga and to promote and assist Institutions of research for the study of diseases, their prevention, causation of remedy.
4. To exchange information with other institutions, associations and societies interested in the objects similar to those of the Central Council and specially in observation and study of diseases in the East and in India in particular.
5. To prepare, print, publish and exhibit any papers, posters, pamphlets, periodicals and books for furtherance of the Central Council and to contribute to such literature.
6. To offer prizes and grant of scholarships, including travelling scholarships in furtherance of the objects of the Central Council.

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## PREFACE

The Central Council for Research in Indian Medicine and Homoeopathy continued its activities as in the previous years in spite of economic vicissitudes it had to face. The Council recognising the economic situation of the country streamlined its activities in a manner that is not detrimental to quality of research output. There may be a quantitative slackness in the programmes but it is largely compensated by high quality of work and devotion to the various programmes on hand.

Before the report of activities is presented it is relevant to briefly outline the projects/programmes that are handled by the Council. These programmes have been taken up in the Institutes/Centres/Enquiries depending upon the discipline to which they are oriented to.

The research broadly may be classified under three heads viz. fundamental research including literary research and documenting, drug research with its application based upon the findings of drug research projects as well as authoritative information available in treatises and classical works of Indian Medicine and Clinical research which studies into aetiopathogenesis, symptomatology etc. besides suitable application of the drugs.

The role of drugs in medical relief cannot be under-estimated and as such the drug research continues to be the pivot around which the entire programme revolves around for a variety of reasons. Drugs are used singly at times in alleviating suffering or at times in combination as in compound preparations. In all these cases, to obtain successful results, there is an imperative need to choose an authentic or genuine drug and in case of preparations they are to contain only well identified and genuine drugs. The success or otherwise of treatment is to a large extent dependent on availability of genuine drugs containing no adulterants or even substitutes. The medicinal preparations that are to be used also are standardised at each level right from collection of the raw drug to ultimate preparation of medicinal formulation and its bottling.

The Programme, no doubt, is a stupendous task nevertheless a necessity from the angle of medical research, medical relief and evolving of pharmacopoeial standards.

The programme connected with various aspects of drugs have been taken up by survey of medicinal plants units, multi-disciplinary research scheme which envisages pharmacognostic, chemical and pharmacologic and clinical studies units dealing with evolving standards for raw drugs, methods of manufacture and finished products. Efforts are also made to

cultivate drugs under known conditions with accent on making suitable experiments in the cultivation to increase the yield without the drugs losing their inherent/innate potentialities. The entire effort undertaken by the highly qualified and well trained research personnel is only to hand over drugs of great potentiality. In an age of synthetic drug supply, the blue prints are provided by natural products and there cannot be two views regarding the need for banking upon natural products and Nature's bounties for the benefit of humanity. The exploration of natural wealth when the humanity is passing through an artificial era may appear as a tedious, strenuous and cumbersome procedure but still it is to be stressed that humanity has to revert to nature for its healing touch to escape from the unforeseen and far reaching consequences consequent upon use of large number of synthetic drugs on various vital organs and the different systems of body. Indian Medicine advocate use of crude drugs and natural products and by this the patient is not subjected to vagaries of the unanticipated or unforeseen effect of isolated material which is later synthesised. Study of this must be exhaustive from all angles and aspects before applied at clinical level.

The Central Research Institutes, Regional Research Institutes and Regional Research Centres and some units form fruitful and fertile ground for trials. The drug supply is generally from Survey of Medicinal Plants Units and the collection depots for all centres engaged in the research programmes. The Council has located *Shilajith* belt in the Himalayan region so that this, much used drug is available in genuine form. Another major break through was establishing the utility of *Guggulu* in the treatment of hyperlipaedaemic conditions in addition to its use in artheritic disorders. The Council has brought out a remedy that proved helpful in reversing mental retardation and this break through roused a nation wide interest among Scientists and individuals manning Institutions for mentally retarded.

The Central Research Institutes are well equipped Institutes with facilities to take up studies at all levels though they are primarily concentrating on bringing out improvised simple remedies of unailing nature besides studying the aetiopathogenesis, symptomatology, response to treatment etc. besides studying factors responsible for causation of diseases. They also design methods suitable to study of the healthy and diseased according to classical tenets making use of advances in techniques and technology in investigation.

The Regional Research Institutes have objectives which are more or less identical with that of Central Research Institute. These are also fairly well equipped to take up to allocated problems. Care is being taken

to substantiate the approach based on tenets of the medical system making use of available modern techniques. These Institutes, like the foregoing, study response of drugs in selected clinical conditions besides studying the aetiopathogenesis, symptomatology and progress of clinical studies. The Central Research Institutes and Regional Research Institutes are also strengthened by providing facilities for various aspects of drug research programmes.

These major Institutes have furnished detailed reports of work but stress is laid to place before readers vital activities in a nutshell so that the work can be appreciated to the maximum.

The Amalgamated Units, Ranikhet is concerned with drug research programme that comprises of Survey, Collection, and Cultivation wherever possible, laying of standards for raw drugs as well as for the various drug that enter into the composition of medicinal preparations besides evolving standards for different kinds of medicinal preparations as well as for the method of manufacture. Amalgamated units have made successful attempts to cultivate Saffron; efforts to breed musk deer are in progress.

Jawaharlal Nehru Ayurvedic Medicinal Plants Garden and Herbarium at Kothrud, Poona initiated experimental cultivation of wide range of medicinal plants with a view to study ways and means to improve the yield. This will help in going for vast scale cultivation to meet the drug requirements of the country besides increasing export potentiality and minimisation of importing of raw drugs. Such of the plants which have these potentialities only are taken up for experimental cultivation.

The Regional Research Centres invariably have been the result of amalgamation of the two or more research units functioning in one and the same place or State. In most cases the centres are formed by amalgamation of survey of medicinal plants unit and mobile clinical research unit. In case of Bangalore the components of Regional Research Centre in addition, include a Drug Standardisation Research Unit.

This kind of consolidation of programmes have an advantage of closer supervision and coordinated activity. The Officer-in-Charge plans the programme of work in a manner that will help flow of useful data in planning for nation's health as well all in assessing country's plant wealth.

The Council is conscious of the need of finding a solution for the major national problem i.e. population explosion and as such a number of drug trial programmes have been undertaken and it will take some more



time to draw conclusions as the trials need confirmation after a long range follow up in a fairly large size of population.

About 50,000 patients were treated by the different systems of medicine through various research projects/programmes at outpatient and inpatient levels. Most of the work is related to the clinical conditions chosen for research.

The Council has taken up to investigation of certain therapeutic potentialities claimed for some drugs by providing them to certain units under code numbers. This coded drug trial can provide an unbiased study of drug effects whenever any potentiality is reported. Further confirmatory studies are planned and in time to come useful and helpful information is expected to be forthcoming. At present 54 drugs/medicinal preparations are under trial in this manner.

The Council has been maintaining a documentation centre and an Indian Institute of History of Medicine and separate units for multi-disciplinary studies as well as for survey of medicinal plants wherever the process of amalgamation/merger is not possible.

The Council's activities have developed fairly considerably and to enable the scientific workers and medical historians to project their views, two quarterly journals which cover various research activities are released. The Scientific personnel of the organisation have published more than 70 original articles besides participating in different Scientific Conferences/Seminars.

The activities of Council among others are to help common man and to advance medical knowledge in the light of progress in contemporary disciplines wherever possible. The Council applied for patents for the original inventions related to isolation of certain active constituents so that the information has an imprint of the organisation and the medical world who are interested can take up to further studies after obtaining Council's consent. The theme of all programmes revolve around providing effective, simple and cheap remedy to common man so that the national interest is amply served.

The bringing out of monographs has been taken up in spite of tight budgetary position and non-availability of paper as it is felt that they form the effective forum for dissemination of knowledge and advances made in the field of different disciplines.

During the period under report one meeting each of the Scientific Advisory Board (Ayurveda) and Scientific Advisory Board (Yoga) were

held. The meetings of the other Boards were not convened having regard to the great financial stress the Council was facing as also due to the fact that there were not many important matters requiring a full Board discussion.

The brief resume provides a bird's eye view of various activities of the organisation and details relating to important activities are focussed in the subsequent pages.

The contents of the material are based on the reports of respective advisory bodies.

I have pleasure to indicate that steps have been taken for breeding of Civet Cats which yields *Gandhamarjarasara* which has a wide therapeutic usage. Steps are in progress to explore the medico-botanical wealth of areas like Andaman, Laccadives, Laddak etc. which have not so far been explored. The larger the areas of exploration, the greater the scope for finding out drugs that have influence on obtaining drugs that can form import substitutes or that can assist in enhancing export potentiality with consequent minimisation of importing of drugs which in turn is expected to save foreign exchange.

I take this opportunity to express my sincere thanks to all those associated with the projects of the Council.

P.N.V. KURUP  
*Director*  
CCRIMH

## Central Council for Research in Indian Medicine and Homoeopathy

Annual Report - 1973-74

The Central Council for Research in Indian Medicine and Homoeopathy is registered under the Society's Registration Act XXI of 1860.

The Council has a Governing Body, an Executive Committee and Five Scientific Advisory Boards, one each for Ayurveda, Yoga, Unani, Siddha and Homoeopathy. The composition of these are as below:—

### Governing Body

*President :* Shri R.K Khadilkar (till Feb. 74)  
Dr. Karan Singh

*Vice-President :* Shri C.S. Ramachandran

*Members :* Shri Prem Nath  
Dr. J.B. Srivastava  
Dr. Y. Nayudamma  
Dr. P.N. Wahi  
Dr. Jugal Kishore  
Shri Govinddas Richharya  
Shri Sankta Prasad  
Shri Yashpal Kapoor  
Pandit Shiv Sharma  
Shri Lal Chand Prarthi  
Vd. Durga Prasad Sharma  
Shri P. Narayanan Vaidyar  
Dr. M. Shanmugavelu  
Hakim Yusuf Hussain Khan  
Hakim Abdul Hameed  
Swami Poornananda Tirtha  
Swami Vishwananda  
Dr. J.N. Sircar  
Dr. A.U. Sriram  
Dr. G.M. Patel  
Dr. V. Narayanaswami

*Member-Secretary :* Dr. P.N.V. Kurup

**Executive Committee**

*President :* Shri R.K. Khadilkar (till Feb. 74)  
Dr. Karan Singh

*Vice-President :* Shri C.S. Ramachandaran  
Shri Prem Nath  
Dr. Jugal Kishore  
Pandit Shiv Sharma  
Swami Poornananda Tirtha  
Hakim Yusuf Hussain Khan  
Dr. M. Shanmugavelu  
Dr. J.N. Sircar  
Shri Govinddas Richharya  
Shri Yashpal Kapoor  
Dr. V. Narayanaswami

*Member-Secretary :* Dr. P.N.V. Kurup

**Scientific Advisory  
Board(Ayurveda)**

*Chairman :* Pandit Shiv Sharma

*Members :* Dr. L.S. Bhatnagar  
Shri Parjapathi Joshi  
Kvj. A. Majumdar  
Dr. R.S. Singh  
Dr. C.P. Shukla  
Vd. Pindawala  
Vd. Sita Ram Mishra  
Prof. Sadashiva Sharma  
Dr. M.G. Wadalkar  
Vd. M.L. Dwivedi  
Shri A.T. Sharma  
Dr. P.K. Warriar  
Dr. K. Subramaniam  
Dr. N.V. Subba Rao  
Dr. B.B. Gaitonde

*Member-Secretary :* Dr. P.N.V. Kurup

**Scientific Advisory  
Board (Yoga)**

*Chairman :* Swami Poornananda Tirtha

*Members :* Swami Dharendra Brahmachari  
Swami Shivananda Saraswati  
Swami Manuvariyaji  
Shri M.L. Gharote  
Shri O.V. Ramaiah  
Dr. Puspa D. Shirole  
Dr. G.S. Chhina  
Dr. K.N. Udupa

*Member-Secretary :* Dr. P.N.V. Kurup

**Scientific Advisory  
Board (Unani)**

*Chairman :* Hakim Yusuf Hussain Khan

*Members :* Hakim S.M. Shibli  
Hakim Iqbal Ahmed  
Hakim Mohiuddin Ghounce  
Hakim Sayad Khaleefatullah  
Hakim Mohamoodur Rehman Khan  
Hakim Madan Sarup Gupta  
Hakim Abdul Wahab Zahoori  
Dr. K. Subramaniam  
Dr. N.V. Subba Rao  
Dr. B.B. Gaitonde

*Member-Secretary :* Dr. P.N.V. Kurup

**Scientific Advisory  
Board (Siddha)**

*Chairman :* Dr. M. Shanmugavelu

*Members :* Dr. C.S. Uthamaroyan  
Dr. J.R. Krishnamoorthy  
Dr. E.R. Balakrishnan  
Dr. V. Vishwanathan  
Dr. V. Raghupati

Dr. T.S. Parthasarathy  
Dr. R. Thyagarajan  
Dr. K. Subramaniam  
Dr. N.V. Subba Rao  
Dr. B.B. Gaitonde

*Member-Secretary :* Dr. P.N.V. Kurup

**Scientific Advisory  
Board (Homeopathy)**

*Chairman :* Dr. J.N. Sircar

*Members :* Dr. P. Sankaran  
Dr. A.U. Ramakrishnan  
Dr. Dilip Sarkar  
Dr. M.C. Batra  
Dr. T.R. Chaddha  
Dr. B.N. Chakravarthy  
Dr. K.D. Gupta  
Dr. K. Subramaniam  
Dr. N.V. Subba Rao  
Dr. B.B. Gaitonde

*Member-Secretary :* Dr. P.N.V. Kurup

During the period under report Governing Body met once, Executive Committee thrice, Scientific Advisory Board (Ayurveda) and Scientific Advisory Board (Yoga) once each. The recommendations of these bodies were incorporated in detail in the record notes of the meetings.

Main recommendations are indicated below:—

**Governing Body  
22-10-1973**

1. At the end of every Annual meeting a hand out giving the activities of the Council should be prepared and sent to the Information Department of the Ministry of Health and Family Planning for publicity.
2. Adequate emphasis should also be made in the Annual Report for various clinical research programmes indicating the therapeutic values.

3. The Governing Body approved the decisions of the VII and VIIIth meeting of the Executive Committee held on 15th December, 1972 and 5th March, 1973.
4. The Governing Body noted the reconstitution of Scientific Advisory Boards for Ayurveda, Yoga, Unani, Siddha and Homoeopathy.
5. Discussed for adopting an emblem proposed by Shri Lalchand Prarthi, Hakim Yusuf Hussain Khan. It authorised the President to take a final decision regarding adoption of emblem after considering the suggestions, that any member may wish to make in this regard.
6. Dr. M. Shanmugavelu was nominated as Chairman, Scientific Advisory Board (Siddha).
7. Approved in principle to amalgamate some of the units functioning at Delhi to form the nucleus of Central Research Institute (Ayurveda) originally approved by Governing body to be located at Delhi.
8. Approved in principle the proposals for amalgamation of the different research units in Bombay and Poona to form the Central Research Institute (Ayurveda) which is to be oriented towards Drug Research.
9. Approved in principle the taking over of the drug farm at Thana in consultation with Ministry of Health and Family Planning for the purpose of natural herb garden.
10. Approved the proposal of establishing a Regional Research Institute for Drug Research at Trivandrum by amalgamating the research units existing at that place.

**Executive Committee**  
**IX meeting**  
**4-8-73**

1. Standing Selection Committee for the posts carrying a scale of Rs. 400-950 and above was approved.
2. Approved the continuance of the existing schemes of Ayurveda during the year.

3. Decided to rename the Institute of History of Medicine as 'Indian Institute of History of Medicine'.
4. Approved the establishment of primate Research Unit at Chemico-pharmacological Research Unit at Bhubaneswar.
5. Approved the Final estimates of Rs. 99.65 lacs of 1972-73 and Budget Estimates 1973-74 of Rs. 94.38 lacs as recommended by Finance/Sub-Committee.
6. Proposal to rename the Council by including the word 'Yoga' was deferred.
7. Decided that rent shall not be paid by the Council to the Grant-in-aid Institutes of Yoga from 1974-75 onwards.
8. Approved the continuance of existing yoga units for this year.
9. Approved the establishment of Yoga Research Unit at Divya-Yoga Samajam, Nellore for the study of therapeutic aspects of Yoga on gastro-intestinal diseases as also the staff and expenditure pattern therefor.
10. Approved in principle the establishment of Central Research Institute (Yoga) at Delhi at the Vishwayatan Yogashram. The present grant-in-aid unit is recommended to be converted as a nucleus of the Institute.
11. Approved the continuance of the Research schemes in Unani during the year.
12. Approved in principle the establishment of Survey of Medicinal Plants Units at Aligarh Muslim University, Aligarh and Central Research Institute (Unani), Hyderabad.
13. Approved the continuance of all the Siddha Research Schemes during the current financial year.
14. Appointment of four consultants in Central Research Institute (Siddha) was approved.
15. Approved the establishment of a Drug Standardisation Circuit in Siddha during the 5th Five Year Plan.



16. Decided that Project Officers may be paid actual local conveyance charges as per normal rules.
17. The creation of the post of Research Officer in Homoeopathy at Indian Institute of History of Medicine was approved.
18. Approved the continuance of all the Homoeopathic Research Schemes during the year.
19. Approved in principle the establishment of a Regional Research Institute (Homoeopathy) at Kuruchi campus by amalgamating the existing Research Units at Kottayam and Belgaum.
20. Committees were constituted to finalise the recruitment rules and amendments thereto and implementation of the Third Pay Commission to the employees of the Council.
21. Approved the Recruitment Rules for the post of Officer-in-Charge, Jawaharlal Nehru Ayurvedic Medicinal Plants Garden and Herbarium, Poona.
22. Approved repairs and renovations to Central Research Institute (Homoeopathy), Calcutta buildings at a cost of Rs. 1.20 lakhs.

**X meeting  
23-10-73**

23. Decided not to make any upward revision in the sanctioned Diet charges of Vishwayatan Yogashram.
24. Decided to recognise V.H.S. Hospital, Madras for the purpose of medical attendance and treatment in respect of the employees stationed at Madras.
25. Approved to provide rent free accommodation to Resident Medical Officer (Research Officer) of Central Research Institute/ Regional Research Institute.
26. Approved the proposal to provide canteen facilities in the Headquarters Office for the benefit of the staff.
27. Considering that the Fifth Five Year Plan allocation of Rs.440 lakhs did not meet the Council's actual requirements decided

that Chairmen, Scientific Advisory Boards should review the position.

**XI meeting  
30-3-1974**

28. Approved certain Senior Appointments in the posts of Director (Ay) at Cheruthuruthy and Patiala, Director (Homoeo), at Calcutta, Hon. Director at Central Research Institute (Unani), Hyderabad, Assistant Director (Unani), Headquarters etc.
29. Approved in principle the publication of eight Siddha manuscripts.
30. Approved microfilming of Cudjan leaf literature relating to recipes and history of Siddhar and fundamental principles of Siddha system of Medicine.
31. Decided to grant extension of service in respect of certain Senior appointment on deputation.
32. Approved the implementation of recommendations of Third Pay Commission in respect of Council's employees.

**Scientific Advisory  
Board (Ayurveda)  
VII meeting  
16-6-1973**

1. Board reviewed the working of various research schemes and a Standing Committee to go into the working of various units periodically was constituted.
2. Recommended to reorganise the CDRS to form a multidisciplinary Drug Research Scheme with a uniform pattern.
3. Publication of Vanaushadi Darshika by Vd.M.R.Uniyal was approved.
4. Recommended that Headquarters/Institutes/Centres/Units be treated as non-plan programmes and short term enquiries as plan programme.

5. Recommended the establishment of a publication division in the Headquarters of the Council.
6. Decided that Dr. B.Mukherjee be requested to edit the monographs on Drug Research before publication.

**Scientific Advisory  
Board (Yoga)  
VII meeting  
29-4-1973**

1. Recommended the establishment of Central Research Institute (Yoga) at Delhi at Viswayatan Yogashram.
2. A committee was constituted to go through the working of Yogic Research Institutes.
3. Approved the Fifth Five Year Plan Programmes.
4. Approved the recommendation of the sub-committee regarding programme for implementation of various research Institutes.

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ANNUAL ACCOUNTS  
1973-74

The audited statements of accounts of the Council for the year 1973-74 are annexed to this report.

## OBITUARY

The Council lost two eminent Scientists who were physicians of repute viz. Dr. N.P.Bector and Dr.M.N.Kesavan Pillai. They have been enthusiastically associated with the organisation. The sad demise of these members who made significant contribution of significant value has been a great loss to the organisation.

The Council has become poorer by sudden expiry of Dr. V. S. Parvathy, member of Governing Body and Chairman of Scientific Advisory Board (Siddha). She has been advising the organisation from its inception.

The Council places on record their gratitude for valuable guidance as well as service rendered by them for furtherance of objectives of the Council.

## ACKNOWLEDGEMENTS

The Directorate of the Council places on record its deep appreciation of the services rendered by the present and past members of the Governing Body/Executive Committee and different Scientific Advisory Boards and extends its deepest sense of gratitude to them for the valuable assistance, guidance and continued support given by them to the Council in the conduct of its work.

The Council owes a debt of gratitude to the scholars and Scientists who accepted the invitation of the Council to serve as members of its Advisory Committees and gave their whole hearted cooperation and assistance in the evaluation of research schemes.

The Council thanks the Scientists who assisted the Council in the selection of scientific workers for the various research Projects.

The Council avails this opportunity to convey its profound thanks to the Government of India for their continuous support, helpful attitude and cooperation which helped the Central Council for Research in Indian Medicine and Homoeopathy to pursue satisfactorily its activities in the field of research.

The Council records its debt of gratitude to the Officers-in-Charge and Project Officers of the Research Units for their high sense of responsibility and the helpful suggestions given by them.

The Council expresses its sincere thanks to Shri Khadilkar, R.K., former President of the Council for his guidance and leadership in the development and progress of the Council.

The Council is thankful to the Chairman and members of the Scientific Advisory Board of respective systems of medicine who have guided the programmes in the respective systems from time to time.

The Council hopes to expand its field of research as well as concentrate the activities of the research in Institutes Centres/Units and Enquiries functioning under the Council. In this great task the Council looks forward with confidence to the continued support and interest of the President, Vice-President, Members of Scientific Advisory Boards and scholars and scientists spread all over the country directly or indirectly connected with the Council. Thanks are also expressed to the various host institutions that are associated in the research programme of the Council.

The expansion in the activities of the Council has increased the work load on the staff and discharged their responsibilities commendably. The Council records its appreciation for the sincere service rendered by the Officers and Staff of the Central Council for Research in Indian Medicine and Homoeopathy and for the cooperation extended by them.

**ANNUAL REPORT  
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**AYURVEDA**

## Ayurveda

### Institutes/Centres

#### Central Research Institute, Cheruthuruthy.

Central Research Institute, Cheruthuruthy has taken up among other programmes, clinical research on *Pakshavadha*, *Ardita*, *Apabaahuka*, *Vatashonita*, *Amavata* and *Sandhigata vata* at inpatient level, besides short term programmes like *Swithra*, *Pratishyaya* etc. at outpatient department. Cases of *vata rogas* are treated with medicated oils based on *Prakirti* and the type of lesion. Cases of *Parinamashoola* are being treated with *Vardhamana sukumara ghritha*. Cases that do not need hospitalisation and which could be followed at outpatient level like *udarakrimi*, *pandu*, *pratishyaya* and *swithra* have been taken up under short term programme.

The medicines like *kwathas*, *lepams* etc. that are required for day to day use are prepared in the Pharmacy.

259 patients were treated at in-patient level during the year under review. The number of patients that attended out-patient during the year is about 15,000. The following table provides disease-wise data treated at in-patient section

<i>Pakshavadha</i>	58
<i>Balavata</i>	33
<i>Vatavikara</i>	48
<i>Vatarakta</i>	21
<i>Amavata</i>	11
<i>Parinamashoola</i>	8
<i>Ardita</i>	7
Miscellaneous	73

Biochemical and other investigations have been carried out at the Biochemistry Department. The Department also is engaged in chemical studies of the single drugs that are medicinally useful. The Department conducted studies on *Putranjiva roxburghii* said to be useful in the treatment of rheumatism and isolated four pure compounds and also established their chemical configuration. A pure compound Entanin has been isolated from the seed kernels of *Entada scandens*. The pure compound is being pharmacologically studied.



Another project taken up by the Department is to study effect of external application of medicated oils on blood cholesterol and further studies are needed to draw conclusions. The study of effect of *Rasna Dashmoolaghritha* an E.S.R. revealed that the drug has potency to bring down the abnormally elevated E.S.R. levels. Briefly it can be said that this section of the Central Research Institute is engaged in clinical biochemistry and pathological investigation besides plant biochemistry.

The Pharmacology Department of Central Research Institute is engaged in the pharmacological and toxicological investigations of single, compound drugs used in Ayurveda. The studies on *Tagara (Valeriana wallichii)* as well as pharmacological study of coded drugs supplied by the Council were also conducted. The Institute has developed its own animal house to breed animals needed for studies, so that there can be uninterrupted availability of animals of known strains/breeds.

The alcohol and benzene extractives of *Tagara* showed mild C.N.S. depressant effect and smooth muscle relaxant activity. Drugs used in skin diseases are also being studied against common dermatophytes and *Candida albicans*. The screening studies against *Candida albicans* were conducted using *Amrutotara kwatha* internally and alcohol extract of *Curcuma zedoaria*. The drugs appeared to be therapeutically potent in treatment of by infection *C. albicans*.

The antifungal studies using acetone and alcohol extractives are in progress. Alcohol extractives of *Manjishtadi special yoga choorna*, *Amrutotara yoga choornam*, *Gokshura* are in progress.

The medical survey and surveillance unit visited Village Desamangalam. The unit completed initial study of 94 individuals and follow-up study in 10. The incidental medical aid was provided by the team that visited the area and cases seen are of *Pandu*, *Pama*, *Jwara*, *Vatarakta*, *Atisara*, *swasa kasa somaroga*, *krimiroga* etc. The team collected data relating to availability of medical facilities in Cheruthuruthy and nearby panchayats. The information furnished is expected to go a long way in understanding the type of treatment available, system of medicine practised, number of Government Public/private medical Institutions/Bodies in the area, medical practitioners of Ayurveda and other systems of medicine. The team collected a few interesting folk remedies during the visits to various places. The team has taken up two clinical problems for special study and investigation based on the prevalence incidence. The problems are study of effect of *Gokshura modaka* in *Suhetha pradara* and effect of *Gudapippali* and *Ativishadi Choorna* in *Udarakrimi*.

In a series of 116 cases of *Shweta pradara* about 25% of cases showed complete freedom from illness and about 15% had symptomatic relief. Of the twenty patients treated with *Ativishadi choorna* six showed relief in the form of expulsion of worms. The remaining fourteen did not turn up. Trial with *Gudapippali* in 82 patients revealed that the drug helped in bringing in total absence of ova and in about 29% there has been a reduction in ova count. About 45% of patients did not come for treatment/investigation. In case of this special problem, further studies may reflect some more helpful and valuable data suitable for assessment of merits or otherwise of the treatment.

**Central Research Institute,  
Patiala.**

Central Research Institute, Patiala like the other Central Research Institute is a full fledged Institute with all facilities. The Institute has a well attended outpatient section which provides scope to select suitable cases. The various problems handled by the Institute are as below :—

1. Clinical study on *Tamaka Swasa*.
2. Treatment of *Shweta pradara*.
3. Dermatoglyphic studies in *Pradara* and *Asthma*.
4. Anti inflammatory and antiarthritic activities of *Yogarajaguggulu* and *Rasna saptak quath*.
5. Hypolipidaemic activities of *Guggulu*, *Navakaguggulu* and *Agnimantha kwatha*.
6. Acute, subacute and chronic toxicity trials of Ayurvedic medicines.
7. Clinical study on *Paurshagranthi shotha*.
8. Standardisation of Ayurvedic Clinical methodology—*Mootra pariksha*.
9. Programmes of Mobile Clinical Research Unit.
10. Programmes of Family Planning.

The Institute studied 226 patients suffering from *Tamaka swasa*. The patients have been divided into two groups. One group was administered *Naradeeya Lakshmi Vilas Rasa* and *Godantibhasma* and the other group was treated with *Shwasakesari* tablets. The cases were investigated at the time of admission and the special investigations like peak expiratory flow rate, vital capacity, breath holding time particular to study of lung pathology were conducted. They are periodically repeated to assess the improvement. The response in the two groups is encouraging.

204 cases of *Shweta pradara* have been studied. The examination of cases was conducted based on Ayurvedic tenets and available current techniques of examination were applied. Cases were provided coded drug and patients had *Uttara vasti* with *Triphala kashaya* and *Sphatika*. Cases of infective origin were excluded from the field of study. There has been fairly encouraging response to the treatment.

Dermatoglyphic studies were conducted on 24 cases of Leucorrhoea. The finger ball and palmer configurations revealed that frequency of loops is highest and it is followed by whorls. Studies on large section of population are likely to help in establishing the relationship between the disease and configuration. The disease proneness is linked to chromosomal aberration.

Under drug oriented research programme, *Kantakari* has been chosen for treatment of *Tamaka swasa*. The investigations were conducted using available techniques and laboratory facilities. The assessment is also made using the same parameters. *Kantakari* was given as *Kwatha* in doses of 50 ml thrice a day. *Kantakari* showed promising lead and further trials are expected to help in establishing its place in the treatment of respiratory diseases in general and *Tamaka swasa* in particular.

40 cases of *Paurushgranthivridhi* were studied during the year under review. Of these maximum number of cases are between 61 to 70 years. Response to treatment in this group seem to be better than others. The patients were divided into three groups and three types of drug combinations as below were tried.

1. *Gokshuradi guggulu* and *Kaishora guggulu*.
2. *Sarivadyasava* and *Khadirarishta*.
3. *Shuddha shilajithu*.

The studies have to be extended to a larger number of cases as well as there has got to be a follow up to pronounce specific opinion. It may, however, at this stage can be said that this pilot study is likely to open new horizons of thought.

The Institute has taken up the subject of evolving a practical method of *mootrapraiksha* based on Ayurvedic tenets as well as other currently available modern techniques and laboratory methods. 300 specimens of urine have been examined and further study of samples is likely to help to convert the hypothesis into an acceptable and adaptable method.

The Pharmacology Department has taken up the studies of Ayurvedic drugs that are used in clinical wings. Suitable experimental models are designed to study effect of drugs alleged to be anti-inflammatory antiarthritic and hypolipidaemic. Single drugs like *Gokshura*, *Ajamoda*, *Shunti*, *Devadaru*, *Guggulu*, *Nakharanjani* etc. have been taken for pharmacological studies. Preparations like *Yogarajaguggulu*, *Rasanasaptak qwath* etc. have also been chosen. The general pharmacology, evaluation of specific potentialities as well as toxicity were been taken up.

The Mobile Clinical Research Unit conducted health studies, medical survey etc. and the work is in progress.

The Family Planning wing is conducting studies on *Taleesadi yoga*. To draw any opinion or conclusion on the usefulness or otherwise of the drug the trial has to continue for a fairly long period on large number of cases.

**Regional Research Institute,  
Jaipur.**

The research activities of the Institute are catered around clinical and plant programmes. Under the clinical programme, the following are taken up :—

1. Assessment of influence of *agni* in *Grahini roga*, *Vata roga*, *Amavata* and application of therapeutic measures.
2. Studies on *Vata rogas* (*Gridhrasi*, *Pakshaghatha Vatarakta* etc.)
3. *Amavata* and therapeutic usefulness of *Guggulu*.
4. Clinical studies on *Tamaka swasa*.
5. Study groups to work on subjects of medical astrology, *Samudrika Lakshana*, *Paribhasha*, *Nadipariksha*, medicinal plants from Tantras and medical manuscripts.
6. Collection of health statistics.
7. Collection of folk-lore claims.
8. Family planning programme.

Various aspects of the clinical conditions have been studied. During the year under review, 34 patients of *Grahini roga*, 18 patients suffering from different *Vata rogas*, 20 patients of *Amavata* and 18 patients of *Tamaka swasa* were studied. *Chitraka* and *Shunthi* have been taken up in *Grahini roga*. In case of *Vata rogas*, *Guggulu* and *Kaishora guggulu* are tried, *Harithaki choorna* is also administered at times along with other drugs,

Cases of *Amavata* are treated with *Guggulu* and *Snuhi*. *Tamaka swasa* cases are treated with combination of *Swasakuthara rasa*, *Kapha kethu rasa* and *Snuhi*. *Jatamansi* was used for fumigation during acute attack. The response appears to be encouraging in all cases and further studies are needed to confirm the observations.

Study groups as indicated earlier have taken to study and elaboration of the aspects of subjects taken up. A few areas in and around Jaipur were visited to collect health statistics. Incidental medical aid was provided under family planning programme. Studies were taken up with *Talesadi yoga*.

The activities of the plant division are as below :—

1. Survey, collection and cultivation of medicinal plants.
2. Maintenance of herbarium and a drug museum.
3. Standardisation of drugs.
4. Studies on pharmaceutical processes like *putas*, *Asavarishta kalpana*.

The surveys conducted have helped in developing of herbarium and museum besides helping collection of drugs. The *Guggulu* farm at Mangliavas has about 25,000 plants. Standardisation of selected raw drugs has been taken up. The study groups mentioned under clinical programme are designing studies on plant lore in the Tantras and other works.

**Regional Research Institute,  
Calcutta.**

The problems/programmes taken up for study are as below :—

1. Effect of *Prasarini* in *Sandhigatavata*, *Pakshaghatha*, *Amavata* and allied disorders.
2. Family Planning programme.
3. Mobile clinical research activities.
4. Survey of medicinal plants unit.

Equipping of the Institute is in progress.

*Prasarini* has shown beneficial effects in cases of *Gridhrasi*, *Amavata* and *Sandhigatavata*. It is observed that *Prasarini* lowered raised ESR levels. Oil prepared with *Prasarini* proved to be useful for extensive application and it reduced stiffness of joints and also swelling. Further studies on a large section of patients will help in evaluating the effects of the drug.

The Institute has taken up recently trial of *Vidangadiyoga* in the family planning programmes. The Mobile Clinical Research Unit has taken up work in randomly selected villages. Collection of data connected with initial health statistics has been taken up in these randomly selected villages.

Information relating to medico-botanical survey is furnished while reporting survey of medicinal plants units programme.

**Regional Research Institute,  
Bhubaneswar.**

The Regional Research Institute, Bhubaneswar has a clinical division, medical survey and surveillance wing and a plant survey and supply division.

The clinical division has taken short term projects on *Pradara*, *Krimi roga* and *Twak vikara*. At inpatient level, the problems chosen are *Amavata*, *Gridhrasi*, *Pakshaghata*, *Pangu*, *Tamakawasa*, *Parinama shula*, and *Amlapitta*.

The Institute has treated about 43,700 patients during the year at Out-patient level. At in-patient level, the number is 165. It is observed from the reports that people from a number of districts around Bhubaneswar are attending the Institute.

The *Panchakarma* (including *poorva karmas*) prescribed for different cases are *Snehana* (*Pana* and *abhyanga*) *Swedana* (*Valuka*, *Bashpa*, *Pinda*, *Upanaha* and *Annalepa*) & *Vamana chikitsa*, *Virechana* (*Mridu*, *Anulomana Teekshna*), *Vasti*, (*Nirooha*, *Anvasanayoga*, *Kala*, *Ksheera*), *Nasya* (*Marsha* and *Pratimarsha* and *Raktamokshana* (*Jalookavacharana*).

The treatment adopted in cases of *Pangu* and *Pakshaghata* can be briefly mentioned as *prayoga* of *Samana chikitsa*, *Sodhana chikitsa* and *Bahyopachara*.

The *Guggulu* preparations as well as selected *Kwathas* and medicated oils were used. Cases of *Parinama shoola* and *Amlapitta* were treated by special *Kwathas*. The main ingredients are *Triphala* *Katukarohini* and *Yashtimadhu*.

The patients were prescribed *Pathyakara ahara*. The problems taken at Out-patient level are also being studied and there has been encouraging response. The pathological laboratory is equipped to meet the normal requirements of the Institute.

The mobile Clinical Research Unit attached to the Institute took up collection of data on initial health statistics in the randomly selected villages. The special problem taken up for study under this is to assess the effect of *Nityananda rasa* in *Sleepada*. The drug seem to possess capacity to exert its influence in cases which are not chronic. Cases of recent onset showed improvement. The study has to be conducted in a large number of cases to obtain viable data. Steps to study effect of *Ashwagandha* on school going children has been taken up and the preliminary formalities like working plan protocols, parameters etc. are in the process of being worked out.

Institute has conducted surveys in various nearby districts to procure medical manuscripts. The mobile and survey teams collected folk-lore claims.

The activities of survey team are reviewed under the head 'Survey of Medicinal Plants' and also referred to in the annexure.

#### **Regional Research Centres.**

The activities of Regional Research Centres at Jogindernagar, Nagpur, Vijayawada are generally survey of medicinal plants and providing information relating to Health status in addition to study of special problems. The Regional Research Centre, Bangalore in addition is engaged in Standardisation programme. The Regional Research Centre, Jhansi has taken to survey of medicinal plants programme. The activities of each of the components may be seen under the relevant head and in annexure.

**Drug Research  
Composite Drug Research  
Pharmacognostic studies**

The Council is conducting studies with a view to identify the source of material forming the Ayurvedic drugs in addition to study the pharmacognosy of the plants in relation to morphology, anatomy and physiology. Investigations to assess the potency, purity and freedom from admixtures and adulterants both anatomically as well as chemically has also been taken up. Stress is laid to study the pharmacognostic features of the parts that are recommended for use in Ayurveda as well as the source of plants after correct identification to distinguish them from adulterants. Pharmacognostic studies of the following drugs have been taken up during the year under review:

Name of the Drug	Part (s) Studied
1. <i>Zaleya pentandra</i>	Leaf
2. <i>Vateria indica</i>	Root
3. <i>Dendrophthoe falcata</i>	Leaf
4. <i>Typha angustata</i>	Root
5. <i>Adhathoda vasica</i>	Leaf
6. <i>Pongamia pinnata</i>	Bark
7. <i>Feronia limonia</i>	Fruit
8. <i>Paspalum scorbiculatum</i>	Seed
9. <i>Elephantopus scaber</i>	Whole plant
10. <i>Albizia lebbek</i>	Leaf
11. <i>A. procera</i>	Leaf
12. <i>Nelumbo nucifera</i>	Rhizome and leaf
13. <i>Ficus tsiela</i>	Bark
14. <i>Beta vulgaris</i>	Leaf
15. <i>Barringtonia racemosa</i>	Leaf and bark
16. <i>Marsilea minuta</i>	Leaf and perecarp
17. <i>Pinus longifolia</i>	Leaf and Wood
18. <i>Taxus baccata</i>	Leaves
19. <i>Azadirachta indica</i>	Leaf and Bark
20. <i>Plumbago zeylanica</i>	Root



- |                               |      |
|-------------------------------|------|
| 21. <i>Salacia fruticosa</i>  | Root |
| 22. <i>Piper officinarum</i>  |      |
| 23. <i>Withania somnifera</i> |      |
| 24. Aconites                  |      |

Morphological, physiological and pharmacognostic studies on plants enumerated above have been conducted.

#### Chemical Studies

The Council has taken up to study of drugs by extraction with solvents of increasing polarity and subjected them to pharmacological investigations.

In case of *Commiphora mukul* and *Asparagus racemosus*, the active principles were isolated and their structure established. The saponin mixture from the total alcohol extract of *Shatavari* was found to be pharmacologically active showing uterine blocking activity both spontaneous and induced by acetylcholine and oxytocin. The mixture also showing pronounced galactotropic activity. The saponin mixture is a complex mixture. By exhaustive chromatography Shatavarin-IV, Shatavarin-I and Shatavarin-II and a non-saponin compound was isolated. Structure of Shatavarin-IV was established. Tentative structure was assigned for Shatavarin-I.

Petroleum sub extract of *Vidarikanda* was shown to possess oestrogenic activity. Presence of vasicine and vascinone in different preparations of *Vasa*, like *Vasaghrita* and *Vasavaleha* are observed. Determination of structure—activity relationship of conessine, holarrhine and holarrhimine is in progress. Advance work on *Mesua ferrea* and *Cassia siamea* has been taken up. *Beta*-sitosterols and masticadienonic acid were isolated. Spinolic acid has been isolated from *Gardenia latifolia*. Friedelin, a quinonoid pigment and four unidentified triterpenes have been isolated from *Salacia fruticosa*. *Alpha*-spinosterol, dihydrospinosterol, and two new sterols have been isolated and characterised from *Cucumis melo* fruits. Gallic acid and ellagic acid were obtained from the seeds of *Eugenia jambolana*. From the skin and pulp, petumidin-3-gentiobioside, nalvidin-3-laminaribioside has been isolated. Stem bark yielded *Beta*-sitosterol, Friedelin, epifriedelanol and betulinic acid from the petroleum ether extract and kaempferol-3-glucoside from the alcohol extract. The aqueous alcoholic extract of the kernels of *Abrus precatorius* gave orientin and iso-orientin. Different varieties of *Xanthoxylum acanthopodium* have been examined. *Butea monosperma* bark was found to contain *Beta*-sitosterol, *Alpha*-amyrin, betulinic acid and stigmasterol. Studies on *Bergenia strecheyi* and *B. crassifolia* have provided interesting findings.

*Paspalum scorbiculatum* and *Crocus sativus* are also taken up for chemical examination. Presence of ketone, apocynin, 4-oxy-3-methoxy-acetophenone in *Picrorrhiza kurroa* has been established. The chemical nature of the isolated phenolic glycoside has been established. The chemical study of the petroleum ether extract of the drug resulted in the isolation of low melting alkanes, alcohols and sterols. The progestational activity of the petroleum ether extract is found to account for its therapeutic action. *Pluchea lanceolata*, *Vanda roxburghii*, *Tecomella undulata*, *Grewia asiatica*, *Fumaria indica*, *Crataeva nurvala*, *Albizia lebeck* and *Cassia tora* have been examined. Chemical investigation of various extracts of seeds of *Withania somnifera* revealed the absence of any alkaloidal constituent. However, from the chloroform extract of the defatted seeds of the plant, a new withanolide has been isolated. The structure has been determined from detailed analysis of spectral data. Plumericin and a potent glycoside, neroside is isolated from *Nerium indicum*. Studies on *Oroxylum indicum*, *Aegle marmelos*, *Callicarpa macrophylla* and *Stephania glabra* have also been analysed. Two new acridone alkaloids have been isolated from *Atalantia monophylla* and they possess antitumour properties. Structure elucidation of two new furocoumarines got from *Prangos pabularia* has been done. An economic process for the isolation of Cathartic principles (as calcium salt) from the leaves and pods of *Cassia angustifolia* has been developed. Phytochemical studies on *Piper officinarum* (fruit) were conducted. Piperine has been isolated from *Piper officinarum*. Methyl piperate has been synthesised. Disodium salt of Hemi-succinic ester of glycyrrhetic acid has been prepared. Other plants studied are the following:

1. *Calycopteris floribunda*
2. *Cassia fistula*
3. *Melia azadirachta*
4. *Thespesia populnea*
5. *Centrantherum anthelminticum*
6. *Plumbago zeylanica*
7. *Mimosa pudica*
8. *Asteracantha longifolia*
9. *Embelia ribes*
10. *Bacopa monnieri*

#### Pharmacologic studies

The Council conducted pharmacologic studies on the raw drugs and the isolated material during the period under review. The diuretic activity of petroleum ether extract of *Boerhaavia diffusa* was studied in a series of rats and it was observed that the subfractions seem to exhibit

diuretic activity. Another finding recorded in the study is increased excretion of sodium. Anti-inflammatory potentiality in experimental animals subjected to carrageenin technique has been observed in ethylacetate extract of *Boerhaavia diffusa*. Significant oestrogenic activity has been observed in ovariectomised animals with petroleum ether, chloroform and ether subextracts of *Pueraria tuberosa*. The mechanism of Peruvoside induced emesis has been established.

Pharmacological trials for evaluation of specific/alleged potentialities of *Adhatoda vasica*, *Tylophora indica* and *Mesua ferrea* have been conducted. The leaves of *Adhatoda vasica* contained a mixture of two alkaloids, vasicine and its oxidised product vascinone. The latter exhibited potent bronchodilator activity comparable to that of theophylline. Trials made with certain extracts of *Tylophora indica* have indicated bronchodilator potentiality besides antianaphylactic activity. A number of experimental trials have been conducted on *Mesua ferrea* and these studies are expected to open new frontiers in therapeutics. The cold water extract of *Cassia fistula* produced anti-inflammatory, antibacterial and antifungal activity with dose of 10 microgramme to 100 microgramme. Hypoglycaemic effect has been observed by hot water extracts of root of *Salacia prinooides*.

The acetone extract of *Thespsia populnea* showed effect on tape worms collected from rat intestines. The cholesterol lowering effect has been observed with *Dolichos biflorus*. Hypotensive action of *Mimosa pudica* was not blocked either by atropine or antihistamine in their usual dose levels. Certain fractions of *Asteracantha longifolia* have demonstrated slight parasympathomimetic action; in case of certain fractions elevation of blood pressure in anaesthetised dogs has been recorded.

The pharmacologic study of chemical principle Nimbidine is in progress. Calicopterine in dose range of 10 mg—60 mgms orally in hydrated rats exerted marked diuresis. No change in the renal threshold for electrolytes has been observed. Plumbagin obtained from *Plumbago zeylanica* in dose range of 500 microgramme to 1 mgm appears to exhibit antibacterial action against gram X<sup>ve</sup> and gram —ve organisms.

The saponins of *Gardenia turgida* have been found to inhibit the slow reacting substances of anaphylaxis and those of *G. latifolia* effectively inhibited the responses of acetylcholine, histamine and 5—HT. The saponin of *G. latifolia* potentiated the response of adrenaline and isoprenaline on isolated air perfused lung of rat, smooth muscles of trachea, intestines. *Tylophora indica* has been found to contain alkaloidal and resin fractions. The response of adrenaline is potentiated by the smaller doses of alkaloid

fraction. The saponins of *Achyranthes aspera* possess anti-inflammatory activity besides potentiating the inhibitory response to adrenaline on isolated perfused lung though continuous perfusion produced oedema of the lung. The volatile oil of *Curcuma longa* has marked smooth muscle relaxant property and it also exhibited antitrypsin activity similar to soyabean trypsin inhibitor. The alkaloid obtained from leaves of *Desmodium gangeticum* has been found to cause increase in force of contraction of isolated heart. The effect appeared to be diminished with repeated doses.

The fall of blood pressure in doses of 10-20 mg/kg body weight in dogs was observed with ethanolic extract of *Albizia lebbek*. The aqueous extract produced variable effects on blood pressure and caused relaxation of smooth muscles of the intestines. Studies on *Crataeva nurvala* in cases of rat paw oedema induced by carrageenin and formaldehyde have been conducted. The results have been compared with known anti-inflammatory drugs and it is presumed that the effect of *Crataeva nurvala* seem to be akin to that of adrenal corticosteroids in this respect.

The effect of *Semecarpus anacardium* as an anti-inflammatory agent has been reported earlier. The draw back in extending its application is the skin rashes which assumes severe nature at times. There is release of histamine from rat mast cells. The studies were conducted using propylene glycol or gum acacia in place of commonly used vehicle Tween 80. The studies revealed that the extract did not cause any disruption of mast cells.

The antipyretic and central nervous system activity has been taken up with protopine and water soluble alkaloids of *Fumaria parviflora*. The experimental studies did not reveal antipyretic potentiality. There has not been any significant effect on pentobarbital induced hypnosis.

The work on *Sesamum indicum*, *Zanthoxylum alatum*, *Jatropha curcas*, *Lagenaria sativus*, *Withania somnifera* and *Leucas cephalotes* is nearing completion.

The alcoholic extract of *Celastrus paniculatus* in large doses i.e. 250 mgm/kg body weight showed depressant effect without abolishing righting reflex in rats and mice. This extract produced blockade of the conditioned avoidance response, potentiated pentobarbitone narcosis and reduced amphetamine group toxicity. Presence of tranquilising effects is noticeable. The drug also appears to be effective against both exudative and proliferative phases of implantation in experimental animals.

Antipyretic, analgesic and antiulcerogenic activity are also observed. The alcohol extract from the leaves of *Nerium indicum* showed potent

cardiac activity while the one obtained from roots did not show the effect to same tune but exhibited fall in blood pressure in large doses. Considering the properties observed, the drug has been taken up for study of adaptogenic potentiality.

Experimental studies conducted on *Moringa pterygosperma* reveal presence of a wide margin of safety between lethal and effective dose. Piperine, obtained from *Piper longum* showed to possess central nervous system stimulant effect and the action is comparable to coramine and metrazol. Elaborate experimental studies have been planned for studying of the analeptic potentiality. The drug antagonised respiratory depression of morphine and phenobarbitone. It is expected to help in taking an important place in the treatment of barbiturate poisoning.

The infection of a dose of 100 mg/kg body weight of alcoholic extract of *Cucumis sativus* produced a series of behavioural changes comprising of ataxia, torsional movements of the lower half of the body, lack of interest in the surroundings and a peculiar "dip" posture.

The alcoholic extract of *Jatropha curcas* was studied for its acute toxicity. The experiments on *Zanthoxylum alatum* have been taken up for evaluating behavioural studies. The drug seem to demonstrate central stimulant activity as well as potent irritant activity.

The pharmacologic as well as acute toxicity studies of petroleum ether extract of *Leucas cephalotes* are being studied. The experiments to evaluate anti-inflammatory potentiality of *Bergenia ligulata* as well as other toxicity studies have been conducted.

In experimental studies of acetone extract of root bark of *Bergenia ligulata* failed to exhibit litholytic effect and this goes contrary to the opinion held in Ayurveda. The analgesic effect as well as diuretic activity exhibited by the drug has a role to contribute in the treatment of calculus. The drug inhibited induced-inflammation effectively. No toxic effects were observed in doses upto 2 mg/kg body weight even after seven days administration of the drug.

Alcohol extract of *Abrus precatorius* potentiated the pentobarbitone induced hypnosis, exhibited analgesic activity in rats and significantly reduced the spontaneous motor activity thus revealing a central nervous system depressant component present in the extract. In intravenous doses upto 10 mg/kg body weight, the extract did not show any activity on respiration or blood pressure in anaesthetised dogs. On isolated rabbit heart perfusion it exhibited a transient negative inotropic effect and a transient negative

ionotropic effect in doses of 500 microgrammes and above. Spasmolytic effect was observed on the isolated rabbit ileum. It produced a spasmogenic effect on guinea pig uterus and on rat uterus in oestrus cycle. However, a relaxant effect on rat uterus in diestrus stage was noticed.

Pharmacologic investigations on chloroform extracted factor of *Acorus calamus*, petroleum ether extract and ethyl acetate extract of *Vitex negundo*, petroleum ether extract of *Saussurea lappa* and petroleum ether extract of *Inula racemosa* have been taken up. The chloroform extracted factor of *Acorus calamus* exhibited marked inhibitory effect on the pulse rate in intact cat with nonpersistent fall of blood pressure with higher dose secondary persistent fall of about 60 mm of Hg. for nearly two hours. But on atropinization reduction of initial fall by 50% with no secondary fall in blood pressure. In spinal cat biphasic reaction with marked increase in pulse rate is observed. Definite antagonistic action against ACH and histamine on isolated guinea pig ileum and marked relaxation in rabbit jejunum. On rats normal behaviour on definite dose-dependent calming effect with no loss of righting reflex suggests the central action of this compound. Further studies are needed to establish whether this calming effect was of tranquilization or due to hallucinogenic manifestation.

Defatted alcoholic extract of *Blumea lacera* exhibited contraction in the isolated guinea pig ileum and potentiation of ACH induced contraction. It also potentiated syntocinon effect on isolated rat uterus, whereas it possessed no effect against Barium chloride induced contractions. The general pharmacologic profile has been studied with petroleum ether extract of seeds of *Vitex negundo* and petroleum ether extract of roots of *Saussurea lappa*.

Work on Semecarbazone obtained from *Nardostachys jatamansi* alcohol extract of *Pedaliium murex*, musk and peruvoside are also in progress. Antiestrogenic activity has been observed in mice with Jatamansone and semecarbazone. The fruits of *Pedaliium murex* were dried at room temperature and extracted with 95% alcohol by cold maceration process. The solvent was distilled and the residue was dried at room temperature and emulsified with gum acacia. The effect of this emulsion was studied on blood pressure, respiration, intestinal motility etc. The drug seem to exhibit muscarinic and histaminic activity.

Musk exhibited a positive inotropic effect on isolated heart and stimulates central nervous system as shown by reduction of hexobarbitone sleeping time, increasing the toxicity of amphetamine and piloerection. In high doses, it increased threshold to pain (60%) induced by thermal stimuli. The LD<sub>50</sub> was 331.1 mg/kg/I.P. in mice. Steps are being taken to use peruvoside as an experimental tool for production of tachyarrhythmias.

## Clinical studies

Being mainly a drug oriented research programme the Council studied areas of its usefulness and also attempted to look for new areas where it can be successfully applied.

The Project, though a drug oriented research programme, yet has the seeds of disease oriented approach in it since the ultimate aim of all drug studies is only to apply them on suitable conditions.

*Karaveera* in the form of tincture is tried in different kinds of *Hrid-roga* and also in cases of *Shwayathu*. It has been observed that the drug helps to increase the total urine output as well as improves general condition. In acute *Sandhigatavata* cases and *amavatha*, *Gandhaprasarini* relieves pain and swelling. The drug has mild effect in chronic states. *Bilwa* exhibited mild effect on *Udarakrimi*. Patients suffering from *dhathukshaya* who were treated with *Pippali* reported a sense of well being though no improvement in serum protein and albumin levels is noticed. *Vibhithaki* exhibited mild effect in *Tamaka Swasa* and was found effective in cases of *Swasa kasa*. Administration of *Kumaryasava* in cases of *Pratishyaya* relieved many of the distressing symptoms like *Kshavathu*, *shirassoola* etc. Trials with *Kumari Bol* in *Kashtartava* is in progress. *Vasa*, though a *Jwaraghna dravya* takes more time to accelerate the effect of therapy. Patients during the stage of subsiding of fever do not perspire. Antitussive effect of *Vasaghritha* was noticed. *Vasa* was found to be useful in *Kamala chikitsa*. The appetite also improved with the treatment. *Nagakeshara* has been tried in cases of *Athisara* and *Pravahika*. The response has been encouraging. *Nimba* appears to provide beneficial effects to patients suffering from skin diseases. Trials with *Lajjalu* in cases of psoriasis seem to be helpful. No conclusion can be drawn on the place of *Vidarikanda* as a gametogenic agent due to paucity of cases. The studies to evaluate galactagogue effect and effect of the drug in cases of menorrhagia and dysmenorrhoea with *Shatavari* are in progress. Trial with *Shigru* for treatment of *Udara-krimi* is taken up.

Trial with *Haridra* and *Kantakari* in cases of *Tamakaswasa* are in progress. Reduction in the elevated eosinophilic count is not observable with *Haridra*. Diuretic effect was not observed in cases treated with *apamarga*. *Ghrithabhrashta haridra* is considered to be useful in the treatment of *Tamakaswasa*. In cases of *Tamakaswasa*, the parameters used in assessing the response of the drug were reduction in the airway resistance as assessed by peak expiratory flow rate and other pulmonary function, reduction in the amount of expectoration besides physical signs and radiography.

Trial of stem juice of *Bimbi* in cases of *Madhumeha* is in progress and the results seem to be interesting and further work only can confirm its action.

Trials with *Jambu* in cases of diabetes mellitus showed fall of blood sugar level at both fasting and post prandial level. *Bilwa* has not shown similar effect in diabetic cases. *Mamajjak* provided symptomatic relief to patients of diabetes and no change was observed in urine sugar content. Studies with *Jyotishmati* in cases of hypertension showed variable results and it is necessary for further trials. *Pashanabheda* (*Bergenia ligulata*) proved to be useful in cases of *Shwayathu*.

*Guggulu* which is purified is used in capsules 0.5 gms and the daily dose is 2.0 gms per patient. Fraction A in doses of 0.5 gm twice a day was used. The studies were conducted using a placebo as well as known hypolipidaemic agent i.e. Atromid-S in dose of 0.5 gms thrice a day. The studies have revealed promising leads and the sphere of studies are being enlarged.

Treatment of *Amavatha* with *Prasarini* has been taken up and it has been found that the drug provides needed freedom from pain. Extracts of *Aragwadha* were tried in dermatological conditions with fair amount of success. The extract of *Calycopteris floribunda* is found to be useful in the treatment of worm infestation particularly round worm. Trials with nimbidine in scabies is in progress.

Long term clinical trials with fraction A of *Commiphora mukul* in case of hyperlipoproteinaemia has been taken up. The effect of fraction A and clofibrate on faecal sterols were studied in addition to their influence on body weight. Turn over studies to investigate the effect of cholesterol metabolism using  $4C^{14}$  labelled cholesterol were conducted. The studies on fraction A of *Guggulu* revealed that the rate of excretion of cholesterol from the body is similar to that of clofibrate. Fraction A of *Guggulu* seems to be a potent hypolipidaemic agent which can be safely administered over prolonged periods. Drug research is a continuous programme having potentialities to provide new and a revolutionary trend in the realm of therapeutics.

#### Extraction Supply Units

The Extraction Units under the Council have been able to meet much of the requirements of various units. Pure phytochemicals were isolated from botanical sources and supplied to the units to further their research activities in general and also to make detailed studies of potentialities



attributed to the drug material. The following extractives/alkaloids/glycosides/isolated active principles have been supplied to the different research units :

1. Piperine.
2. Petroleum ether extract of *Withania somnifera*.
3. Alcoholic extract of the defatted fruits of *Cucumis sativus*.
4. Petroleum ether extract of *Leucas cephalotus*.
5. Alcoholic extract of *Nerium indicum*.
6. Solid from the chloroform extract of the rhizome of *Acorus calamus*.
7. Petroleum ether (60-80°) extract of the seeds of *Vitex negundo*.
8. Petroleum extract of the roots of *Saussurea lappa*.
9. Ethyl acetate extract of defatted seeds of *Vitex negundo*.
10. Petrol extract of *Blumea lacera*.
11. Alcoholic extract of *Blumea lacera*.
12. Osthol, m.p. 83-84° from petrol extracts of the roots of *Prangos pabularia*.
13. Chloroform extract (after extraction with petrol and benzene) of roots of *Salacia fruticosa*.
14. Ethyl acetate extraction of roots of *Salacia fruticosa*.
15. Methanol extract of roots of *Salacia fruticosa*.
16. Petrol extract of whole plant of *Aerva lanata*.
17. Benzene extract of *Hibiscus rosasinensis*.
18. Alcoholic extract of *Hibiscus rosasinensis*.
19. Petrol extract of rhizome of *Pueraria tuberosa*.
20. Chloroform extract of rhizomes of *Pueraria tuberosa*.
21. Extracts of *Adhatoda vasika*.
22. Benzene extract of *Calycopteris floribunda*.
23. Extraction of *Asteracantha longifolia*.
24. Petroleum ether extract of *Abrus precatorius*.
25. Petroleum ether extract of *Mimosa pudica*.
26. Acetone extract of *Mimosa pudica*.
27. Alcoholic extract of *Mimosa pudica*.
28. Crude alkaloids of *Holarrhena antidysenterica*.

29. Glycyrrhetic acid.
30. Petroleum ether and ethylacetate extracts of *Commiphora mukul*.
31. Jatamansone.
32. Simecarbazon.

#### Toxicity and Confirmatory Studies

In drug research particularly when drugs are providing interesting leads, there is an imperative necessity for evaluation of toxicity which may be either of acute or subacute or chronic nature, before they could be used at clinical level. The confirmatory studies have to be simultaneously conducted wherever interesting leads are forthcoming. At times drugs considered promising are supplied as "coded drugs" to eliminate the element of bias so that almost independent useful information neither controlled by any particular temptation nor governed by any preconceived imagination may flow out. The studies on certain coded drugs claimed to possess antidiabetic potentiality, analeptic and anabolic activity and action on lipid disorders are in progress. It is proposed to decode the drugs when full relevant information is available

The results of study of coded drugs alleged to possess therapeutic usefulness in lipid disorders supplied under coded drugs are as below :

Coded drugs	LD <sub>50</sub> Value	Fiducial limits at 95%
AYUSH 12	0.520 gm/kg	0.5564 gm/kg and 0.4860 gm/kg
AYUSH 13	58 gm/kg	98.6 mg/kg and 34.1 mg/kg
AYUSH 14	0.980 gm/kg	1.225 gm/kg and 0.783 gm/kg

The results of acute toxicity studies conducted on mice with AYUSH 12 administered in suspension form with Tween 80 by intraperitoneal route in mice were as follows :

Group No.	Dose	% mortality
1	0.650 mg/kg	90%
2	0.600 mg/kg	70%
3	0.550 mg/kg	40%
4	0.500 mg/kg	20%
5	Control	0.0%

The symptoms observed were general sedation and the animals by their movements appeared to have irritation in the abdomen although no peritonitis was observed in post mortem studies. Laboured respiration was followed by death. Post-mortem studies indicated congested liver and lungs.

The information in case of AYUSH 13 is as below :

<i>Group No.</i>	<i>Dose</i>	<i>% mortality</i>
1	150 mg/kg	90%
2	100 mg/kg	70%
3	50 mg/kg	40%
4	25 mg/kg	20%
5	Control	0.0%

The symptoms observed were hyperexcitability tachypnoea followed by sedation, loss of righting reflex and death. Gross observation during post mortem revealed no abnormality.

Studies on AYUSH 14 provided the following data :

<i>Group No.</i>	<i>Dose</i>	<i>% mortality</i>
1	1.40 gm/kg	90%
2	1.24 gm/kg	70%
3	1.00 gm/kg	50%
4	0.890 gm/kg	40%
5	Control	0.0%

Sedation followed by death in about 7 hours. Post mortem studies revealed congestion of liver and lungs. No other abnormality was detected.

The drugs claiming to possess analeptic potentiality were supplied as AYUSH 11 and AYUSH 13 and the response observed does not appear to stand up to the claims made. The drug, however, is possibly considered to potentiate the action of pentobarbitone sodium.

The petroleum ether extract of AYUSH 9 did not show the alleged potentiality at experimental levels. The LD<sub>50</sub> of this drug was found to be 75 mg/kg.

Subacute toxicity was studied in AYUSH 11 and the animals were sacrificed at the end of three weeks. Haemorrhages in interstitial spaces was taken as a parameter for study and viscera like liver, heart, kidney and lungs were studied.

Another coded drug AYUSH 14 showed direct smooth muscle relaxant activity in a concentration of 60 mgm to 165 mgm/ml. It exhibited depressant action on the heart and caused cardiac arrest in a concentration of 1 in 1000. The drug did not indicate any significant action on normal plasma cholesterol level.

AYUSH 15 also was taken up to assess its effect in lowering plasma cholesterol levels and the drug did not show any significant activity. Similar observations have been made with AYUSH 16.

The hypoglycaemic potentiality was observed with coded drug AYUSH 48 and further more extensive studies are necessary to confirm.

The toxicity and confirmatory studies undertaken are likely to reveal drugs of usefulness which have a fair margin of safety in therapeutics.

**Drug Research  
Survey of Medicinal Plants**

The systematic medico-botanical survey of different forest areas/divisions in India have been conducted by the Council during the year under review. The areas surveyed briefly are as follows :—

1. **Andhra Pradesh**  
Kondapalli.  
Local areas of Vijayawada.
2. **Assam**  
South Kamrup forest division.  
North Kamrup forest division.  
Meghalaya Division.
3. **Bihar**  
Rajgir forest division
4. **Gujarat**  
Kadana.  
Godhra.  
Chhotta Udaipur.  
Dangs.  
Junagadh.
5. **Himachal Pradesh**  
Mandi forest division.  
Lahual Spiti forest division.  
Palampur forest division.
6. **Jammu & Kashmir**  
Razouri forest division.  
Ransoo, Shivkhori,  
Tattapani Tryat,  
Kalakot kandi, Bhudhal,  
Sunderbani Swarnkot,  
Dehragali chandimarh.
7. **Karnataka**  
Chikmagalur division.  
Bhadrawathi division.

Mysore division.

Koppa division.

8. **Kerala**

Kottor forest.

Iddiki forest.

9. **Madhya Pradesh**

Gwalior (Local areas).

Shivpuri forest division.

Satanwara,

Narwar,

Pichhore,

Pohri.

10. **Maharashtra**

Gorewada area.

Bhandara area.

Kalmeshwar area.

Butibori area.

Ravinagar Garden.

Maharaj baga.

Ambazari part.

11. **Orissa**

Anugal.

Dhenkanal.

Puri.

Cuttack.

12. **Rajasthan**

Ajmer forest division.

13. **Tamil Nadu**

Tirunelveli

Kanya Kumari

Madurai

Salem.

14. **Uttar Pradesh**

Kalad hunge

Haldwani

Khatima  
Lahia head  
Sitargang  
Nainital  
Pilibhit  
Local area of Jhansi.

**15. West Bengal**

West Midnapur  
Central Division

The following is the list of a few drugs supplied to the various units of the Council :—

1. *Crataeva nurvala* (Varuna)
2. *Crocus sativus* (Keshara)
3. *Leonotis nepetaefolia*
4. *Pterocarpus marsupium* (Pitasara)
5. *Bambusa bambos* (Vansh)
6. *Plumbago zeylanica* (Chitraka)
7. *Terminalia arjuna* (Arjuna)
8. *Terminalia belerica* (Bahira)
9. *Desmodium gangeticum* (Shalparni)
10. *Jatropha multifida* (Vishabhadra)
11. *Caesalpinia bonducella*
12. *Butea frondosa* (Palasa)
13. *Madhuca indica* (Madhuka)
14. *Lycopodium* sp.
15. *Plantago ovata* (Ishadgola)
16. *Vitis vinifera* (Draksha)
17. *Zingiber officinale* (Ardraka)
18. *Acalypha indica*
19. *Clerodendron phlomidis*
20. *Clerodendron serratum*
21. *Cressa cretica* (Rudanti)
22. *Pavonia odorata*
23. *Viscum album*

24. *Melia azadirachta*
25. *Ficus hispida*
26. *Leucus cephalotes*
27. *Santalum album*
28. *Amomum subulatum*
29. *Baliospermum montanum*
30. *Eclipta alba*
31. *Gymnosporia spinosa*
32. *Lippia nodiflora*
33. *Nelumbo* sp.
34. *Sapindus trifoliatus*
35. *Tinospora cordifolia*
36. *Gynandropsis* sp.
37. *Hibiscus rosasinensis*
38. *Apium graveolens* (Ajmoda)
39. *Costus speciosus*
40. *Saraca indica*
41. *Picrorrhiza kurroa* (Katuka)
42. *Mucuna prurita*
43. *Juniperus macropoda*
44. *Mallotus philippinensis*
45. *Pluchea lanceolata*
46. *Rauwolfia serpentina*
47. *Gmelina arborea* (Gambhari)
48. *Bacopa monnieri*
49. *Anogeissus latifolia*
50. *Sida cordifolia*
51. *Pueraria tuberosa*
52. *Citrullus colocynthis*
53. *Holarrhena antidysenterica*
54. *Mentha arvensis*
55. *Mentha piperita*
56. *Lycopodium* sp.
57. *Nardostachys jatamansi*
58. *Operculina turpethum*
59. *Randia dumetorum*
60. *Canscora* sp.
61. *Tribulus terrestris*



62. *Wrightia tinctoria*
63. *Alangium salvifolium*
64. *Sphaeranthus amaranthoides*
65. *Rubia cordifolia*
66. *Grewia hirsuta*
67. *Emblica officinalis*
68. *Aegle marmelos*
69. *Crotalaria mucronata*
70. *Mallotus philippinensis*
71. *Trema orientalis*
72. *Celastrus paniculatus*
73. *Acacia nilotica*
74. *Albizia amara*
75. *Physalis minima*
76. *Cocculus hirsutus*
77. *Morinda tinctoria*
78. *Passiflora foetida*
79. *Syzygium cumini*
80. *Aristolochia indica*
81. *Asparagus racemosus*
82. *Premna tomentosa*
83. *Evolvulus alsinoides*
84. *Bauhinia racemosa*
85. *Solanum indicum*
86. *Pistacia integerrima*
87. *Callicarpa macrophylla*
88. *Delphinium vestitum*
89. *Abies spectabilis*
90. *Cedrus deodara*
91. *Thalictrum foliosum*
92. *Symplocos peniculata*
93. *Cannabis sativa*
94. *Enicostemma littorale*
95. *Curcuma longa*
96. *Achyranthes aspera*
97. *Embelia ribes*
98. *Moringa pterygosperma*
99. *Dioscorea bulbifera*

100. *Uraria picta*
101. *Piper longum*
102. *Aerva lanata*
103. *Coriandrum sativum*
104. *Foeniculum vulgare*
105. *Glycyrrhiza glabra*
106. *Erythrina indica*
107. *Nymphaea stellata*
108. *Strychnos potatorum*
109. *Abutilon indicum*
110. *Symplocos racomosa*
111. *Fagonia critica*
112. *Areca catechu*
113. *Feronea limonia*
114. *Salmalia malabarica*
115. *Leptadenia reticulata*
116. *Psoralea corylifolia*
117. *Lolium polyphyllum*
118. *Commiphora mukul*
119. *Cuscuta reflexa*
120. *Abroma augusta*
121. *Stereospermum suaveolens*
122. *Aloe vera*
123. *Adiantum caudatum*
124. *Adhathoda vasika*
125. *Plumbago rosea*
126. *Cyclea peltata.*

The Unit incidentally also collected data relating to folk-lore claims. Some of the Units have been maintaining experimental cultivation gardens. The following table provides at a glance the information relating to herbarium sheets etc.

Sl. No.	Name of the Unit	Herbarium Sheet	Folk-lore Claims	Plants under Cultivation	Plants in the Museum
1.	Survey of Medicinal Plants Unit, Andhra Pradesh.	2,331	94	61	250
2.	Survey of Medicinal Plants Unit, Assam	2,252	2	83	20
3.	Survey of Medicinal Plants Unit, Bihar.	200	5	—	—
4.	Survey of Medicinal Plants Unit, Gujarat.	89	10	—	167
5.	Survey of Medicinal Plants Unit, Himachal Pradesh.	2,294	3	—	—
6.	Survey of Medicinal Plants Unit, Jammu & Kashmir.	795	60	143	28
7.	Survey of Medicinal Plants Unit, Karnataka.	242	9	42	65
8.	Survey of Medicinal Plants Unit, Kerala.	93	150	—	40
9.	Survey of Medicinal Plants Unit, Madhya Pradesh.	803	10	—	—
10.	Survey of Medicinal Plants Unit, Maharashtra.	116	—	—	—
11.	Survey of Medicinal Plants Unit, Orissa	321	17	58	40

1	2	3	4	5	6
12.	Survey of Medicinal Plants Unit, Rajasthan.	452	32	137	54
13.	Survey of Medicinal Plants Unit, Tamil Nadu.	345	3	231	33
14.	Survey of Medicinal Plants Unit, Uttar Pradesh Tarikhet Jhansi.	1,850 121	4 13	Over 60 Medicinal Plants. Suffron cultivation. 28	11 47
15.	Survey of Medicinal Plants Unit, West Bengal.	125	10	61	75

**Jawaharlal Nehru Ayurvedic  
Medicinal Plants Garden and  
Herbarium, Poona**

Jawaharlal Nehru Ayurvedic Medicinal Plants Garden and Herbarium among others has taken up to experimental trials/cultivation of medicinal plants, arranging a drug museum of authentic drugs together with their substitutes and adulterants and establishment of a herbarium. About 1500 pressed, dried, labelled medicinal plants have been added during the year under review. The crude drug museum has been set up with 80 authentic and market samples. For the purpose of obtaining drug samples, seeds and saplings for herb garden and to enrich the herbarium tours to following places were conducted; Local tours in Poona, parts of Western ghats, Konkan (Ratnagiri hills), tracts of Mahabaleshwar, Goa, and Bombay.

Besides the above the herb garden got supply of plant/drug material for study from different survey and supply units.

The garden has been laid out on the basis of standard horticultural procedures adopting international drug plant cultivation standards. The garden has three land types i.e. rocky ledges, sandy soils and black cotton soils. The plants cultivation studies have been planned keeping in view the environment, ecology, edaphic and climatic factors. Raw farm manure and fertilisers were used where soil was sandy or rocky.

For the purpose of cultivation seeds and saplings were obtained. The viable seeds obtained from various sources were set for germination in petridishes. Seeds were first vernalised for 30 days at 40°C temperature to break up any germination inhibitor present in them. These seeds later were placed on moist filter papers and germinated. Germination was accelerated by using gibberellins and other phytohormones. The seedlings were gradually brought to higher temperature before they were transplanted in pots in cool and shady places. Germination period and seedling survival data for about thirty species is collected. Effects of K.P.N. and the different ratios needed for different medicinal plants are being studied. The beneficial effect of fertiliser is recognisable on the growth and morphology of different medicinal plants. *Cassia argustifolia* subjected to fertiliser influence recorded a height of 60 cms with 40 fruits of the size of 3.5X2.7 whereas the control group grew to the height of 35 cms with 12 fruits of 3X1.5.

In the process of experimental trials, the influence of soil types on growth of medicinal plants was studied. The studies were conducted in

sandy soil, murrum and sandy soil, humus clay and black cotton soil. The influence of these different soils on *Urginea indica* is as below :

SoilType	Results
Sand	Bulb rapid growth of roots after three months leafing. No formation of bulbils. Growth normal.
Murrum and sandy soil	Retarded—vegetable parts undeveloped.
Humus-clay	Growth rapid—bulb enlarges in size, leafing, flowers normal bulbil formation.
Black cotton soil	Growth normal. No bulbil formation.

*Cassia augustifolia* seeds, seedlings and plants at preflowering stages were treated with 2,4-D, IAA and GA growth regulators in 1,10,53 ppm. concentrations. Controls were treated with distilled water. Dipping of seed for treatment was done in May, the seedling with 4-8 compound leaf stages were treated in August and preflowering treatment in September.

The following studies were conducted in this regard :

1. Effect of growth regulators on number of days taken to flower,
2. Effect of growth regulators on plant height.
3. Effect of growth regulators on compound leaflet number.

Phytochemical studies of leaves and fruits at different phases of growth have been conducted. The studies revealed that percentage of active constituents increase during fruiting phase of the plants.

Another interesting observation made by the garden was that plants planted on full moon days showed an appreciable increase in growth compared to those planted during dark days.

Phenological studies of different medicinally important plants around the herb garden has been done and this will go a long way in commercial exploitation.

About 95 plants are being cultivated at experimental level and of these fourteen plants are under extensive cultivation. It will be of interest to note that the garden has been able to successfully cultivate plants like *Glycyrrhiza glabra*, *Urginea indica*, *Plantago ovata* and many other plants. The drug yield of a few of the plants is indicated hereunder :

*Plantago ovata* - 15 Kg.  
*Ricinus communis* - 10 Kg.  
*Helianthus annuo* - 10 Kg.  
*Cymbopogon citratus* - 10 Kg.  
*C. martini* - 10 Kg.  
*Psoralea corylifolia* - 10 Kg.  
*Sarcostemma acida* - 20 Kg.

It is expected that 25 Kg. of *Asparagus racemosus* will be available after harvesting. 10 Kg. of *Glycyrrhiza glabra* and 25 Kg. of *Urginea indica* are expected to be available when matured.

Botanical, pharmacognostic and organoleptic constants of 78 crude drugs obtained from Baroda have been worked out and studies revealed that the market samples are authentic up to 75%. The quantum of controversial drugs is upto 14%. Adulterants, mixtures and supply of substitutes are 3%, 6% and 2% respectively. Though a fair percentage of market drugs are authentic, the usability of these is only upto 37% since part of the material is either old or made of different species or of rotten type.

Similar studies on 80 drugs from Ahmedabad market were also conducted. The authentic drugs form 69% and of these 33% has usability index. The nonusability is due to same causes mentioned in the foregoing. Adulterants, substitute, artificial material and controversial drugs account 7%, 9%, 1% and 14% respectively.

The herbarium which has over 1200 specimens in time to come will form an important voucher herbarium.

The experimental cultivation project has provided valuable data that can be utilised in large scale cultivation. The drug museum with its collection of authentic drugs and market samples will provide valuable data about drugs.

#### **Amalgamated Units, Tarikhet**

The Amalgamated Units at Tarikhet are engaged in the survey and supply of medical plants, cultivation of saffron, breeding of Musk Deer and standardisation of single drugs, method of manufacture and finished products.

Survey of medicinal Plants conducted fourteen tours and during which 1484 plants were collected. 1076 plants have been identified. Incidentally it may also be said that the Unit collected about 100 folk-lore claims. The Unit supplied about 250 kg. of plant material belonging to

different species to various research projects of the Council. Studies on insect-pests that attack medicinal plants has also been conducted. It has been observed that *Carthamus tinctorius* was attacked by an aphid. 269 samples are maintained in the museum.

The Unit is engaged in experimental cultivation of medicinal plants in addition to saffron cultivation. The herb garden has one hundred herbs, fourteen shrubs, three climber and thirty trees. Detailed pharmacognostic investigations are also in progress. Preliminary phytochemical work was also carried out on certain of drugs. The Unit has documented information on about 80 species used in medicine.

Saffron plantation in Chamma and Ranikhet were maintained. About 10,07,000 Corms have sprouted. Flowering was observed in about 510 plants. The weight of the fresh stigma collected was about 16 grams. Land at Dharamgarh has also been prepared. 12,326 corms have been planted in 2000 sq. meter area. This planting helps to asses the adaptability of the Corms. The other studies undertaken are (1) the effect of malic hydrazide in different concentrations in Saffron Corms, (2) effect of different types of soils on growth and development, (3) possibilities of propagation of Corms through Corm cuttings, (4) study of flower yield from different size of Corms and (5) study of adaptability of established Corms at Ranikhet at higher elevation facing the main Himalayas.

Under the Musk Deer project, subalpine and alpine sectors in Chamoli and Almora Districts were explored to have information on the areas of concentration, accessibility, feeding habit, proliferation and possibility of collection of animals. As a sequence of enforcement of Wild Life Act, collection of animals has altogether been banned. Grant of license for the upkeep and collection of animals is under consideration of the forest department.

The exploratory studies revealed that the animal occurs in fairly large numbers in Pindar Sector, Urgam Sector, Okhimath Sector, Purola Harkidoon Sector, Kharsali Beef Sector and Kushkalyan Section. The animal is also available in sporadic from in Sikhar area near Dharamghar.

Under the standardisation programme, a little over a dozen single drugs have been studied. The pharmaceutical process like *Asava* and *Arishta Kalpana Bhasma Vidhana* have also been studied. Analytical studies on *Abhayarishtha*, *Kumaryasava*, *Agastyaharithaki*, *Chyavanaprasha* and *Abaraka bhasma* (3 putas) have so far been completed. Single drugs entering into the compisition of various formulation allocated for study was also taken up.



## Drug Research Standardisation

The success or otherwise of drug treatment among other is intimately associated with genuineness and quality of drugs and drug preparations. There is an imperative need to standardise them right from stage of procurement to stage of final product-be it use of a single drug or a recipe resultant of combination of drugs through indicated pharmaceutical procedures.

The Council has taken up steps to evolve standards for raw drugs, manufacturing methods and finished products. Since the process of standardisation is expected to take fairly long period, the Council felt that there is an immediate need for working standards to start with. So that the agencies and practitioners engaged in the manufacture of these preparations will be able to apply them for testing the drugs/preparations before releasing for large scale therapeutic application. Three Units are engaged in this programme and they have evolved standards that can be considered for application. These standards though may not be completed, yet will provide information needed when any rapid screening method/technique is to be adopted.

The drugs/preparations are submitted to a battery of chemical tests/methods/techniques to obtain the following information. The test, however, vary with the type of preparation. The following are a few tests:-

1. Determination of ash.
2. Determination of acid insoluble ash.
3. Determination of acid value.
4. Determination of saponification value.
5. Determination of total solids.
6. Determination of balsamic acids in residue.
7. Determination of specific gravity at 25°C.
8. Determination of loss of drying at 110° C.
9. Detection of foreign inorganic matter.
10. Uniformity of pills by weight.
11. Determination of refractive index.
12. Tests for the absence of arachis oil in other oils.
13. Estimation of reducing sugar.
14. Determination of non-reducing sugar.
15. Determination of iodine value.
16. Determination of foreign organic matter.

17. Determination of pH value.
18. Determination of alcohol content.
19. Estimation of coarseness/fineness of powders.
20. Determination of mercury.
21. Determination of Sulphate.
22. Determination of Sulphate as Barium sulphate.
23. Determination of Chlorides.
24. Determination of Volatile oil.

The above analytical procedure have been carried out on the following based on the type of preparation etc:-

Raw Drugs :— *Agnimantha, Brihati, Madhurika, Shatapushpa, Ativisha, Bilwa, Gambhari, Pashanabheda, Shalparni, Sariva, Jatamansi, Mocharasa, Daruharidra, Kapikachu, Saptaparna, Kantakari, Gokshura, Hingula, Tankana, Pushkara moola, Ranabheri, Sikhi, Vasa, Patola, Bharangi, Kumari, Vidanga, Guduchi, Shyonaka, Prashniparn, Ajaji, Parpata, Saptachada, Shunthi, Maricha, Pippali, Nagakshara, Musta, Vatsabeeja Patala.*

Method of Manufacture :—

- i) *Asava & Arishta* — *Kumaryasava A & B, Draksharishta.*
- ii) *Bhasma* — *Abhraka Bhasma.*
- iii) *Rasayoga* — *Tribhuvan Keerti*
- iv) *Taila* — *Ksheerabala Taila.*
- v) *Gritha* — *Pancha Tikta Gritha*
- vi) *Guggulu* — *Yogaraja Guggulu.*
- vii) *Shodhana process of Hingula.*

Finished Products :— *Abhayarista, Kumaryasava A & B, Dashamoolarista, Amritarista, Agastya Rasayana, Chyavana Prasha, Abhraka Bhasma, Tribhuvana Keerti Rasa, Anand Bharirava Rasa.*

A number of coded drugs have also been analysed for confirmatory studies. Techniques considered suitable for working out standards are devised in addition to the conventional and approved methods of approach.

The preliminary working standards are available for about 300 finished products.

## Clinical Research

Clinical Research is conducted under the Council through its units and enquiries. The problems taken up in the various Units/Enquiries are as below:

1. Clinical study on *amavatha*, *sandhigata vata* and *gridhrasi* and trial of *nirgundi* in these conditions.
2. Clinical study on *Parinamashoola* and *Annadravashoola* and assesment of response to effect of *Kushmanda swarasa*.
3. Effect of *amashaya shodhana* with *Varuna kwatha* in *Parinamasoola*.
4. Study into concept of nutrition according to Indian Medicine.
5. Preparation of formulary of simple home remedies.
6. Study of *prakirti* or constitutional factors in health and disease.
7. Clinical and experimental assessment of *rasayana* drugs.
8. The effect of *rasayana* drugs on some psychological aspects.
9. Evaluation of effects of *Shuddha silajith* and *Dhatrinisha* in the treatment of *madhumeha*.
10. Evaluation of effect of *Panchakarma chikitsa* in the treatment of *Vatavyadhi*.
11. Studies on effect of therapeutic measures in *Parinamashoola*.
12. Study of role of diet prescribed in Ayurveda for certain clinical conditions.
13. Assessment of effect of *Panchakarma* therapy in *Unmada*.
14. Evaluation of anti diabetic effects of *Beejasara*.
15. Aetiopathogenesis studies and treatment of *Timira roga* using *Mahatriphala ghrita* and *Saptamrita lauha*.
16. Screening of effects of indigenous drugs in thyroid swellings and aetiopathogenic studies of the same based on Ayurvedic works.
17. Effect of *Arygyavardhini* in *medoroga*.
18. Effect of *Virechana* and *Vasthi* in the treatment of *Vatavyadhi*.
19. Study on aetiopathogenesis of *Kamala* and *Yakritroga* and its treatment with *Kutaki* and its preparations.
20. Clinical and experimental trial of *Navaka guggulu* in *medoroga* and other allied disorders.

21. Evaluation of effect of *Varuna kulatha* and *Gokshura* in *mutrasmari*.
22. Standardisation of treatment of *Bhagandhara* and *arshas* by *Kahsra sutra*.
23. Standardisation of principles and techniques of *Nasyakarma*.
24. Study of effectiveness of certain Ayurvedic drugs in the treatment of wounds.
25. Trial of certain Ayurvedic drugs in the treatment of *purishaja krimiroga*.
26. Study of relationship of *Jataragni* to *Dhatwagni*.
27. Studies on *Prakriti* and disease proneness.
28. Endocrine response to *rasayana* and other rejuvenation measures.
29. Study of effect of *Vasti* in *sulas*.
30. Investigation of the role of *Sodhana choitsa* in cases of *Paithika Kshudrakushta*.

The studies conducted on *gridrasi* revealed that *nirgundi* has better therapeutic effect than *guggulu*. It is also found helpful in the treatment of *Viswachi*, *Kampa* and *Khallivata*. The effect of *amalaki* in the treatment of *amlapitta* and *annadravasula* will be taken up as soon as preliminary steps of approach are finalised. *Amasaya sodhana* with *Kashaya* prepared with *Varuna* appeared to produce encouraging results. A variety of pathological investigations and biochemical studies have been conducted to assess the therapeutic response.

The nutritional habits of Tamil Nadu have been surveyed by one of the units of the Council. The unit has prepared a formulary of simple remedies for the treatment of minor ailments. The work is the outcome of the practical experience of the physicians and data collected from the experienced practitioners who had occasion to use such remedies in a large section of patients suffering from a variety of minor ailments. The methodology to study *Prakriti* has been standardised for wider application. The study has been extended to patients suffering from diseases like pepticulcer, bronchial asthma, diabetes and coronary thrombosis; effect of *Mandukaparni* and *Punarnava* on longevity, growth pattern and nitrogen retention were also studied. *Aswagandha*, *Guduchi*, *Bhringaraj* have been added to the list of drugs. Animal studies have also been designed.

Effect of *Suddha Shilajit* in reducing the blood sugar has been found to be marginal. The number of cases studied under *Dhatrinisha* are not adequate to draw any conclusions.

Studies of effects *Panchakarma chikitsa* in *Vatavyadhis* in general and *Pakshaghata* and *Gridhrasi* in particular have been studied. The cases in this project were selected taking in consideration symptomatology as described in Ayurvedic works. The work did not provide effective impression on the affected parts but there has been improvement in general health besides symptomatic relief. *Sneha karma* was done using *Dashamoola ghrta*, *Thiktaka ghrta* and *Nirgundi ghrta*; *Vamana karma* using *madanaphala Ksheera paka* and *Virechana karma* with *Shyama trivrit moola choorna* with milk and sugar were done. A number of varieties of *Vasti karma* were also administered. *Karma vasti*, *Kala vasti* and *Ksheera vasti* are a few. *Utlara vasti* was done in certain cases. *Nasya karma* was also done in certain cases.

Effect of *Varuna twak kashaya* and *Sukumaraghrta* in cases of *Parinamashoola* have been studied. *Varuna twak kashaya* appeared to provide distinct relief in cases of *Parinamashoola*. In a series of 67 cases treated for three months with *Sukumaraghrta* 41 got complete relief.

Diet is considered as a therapeutic agent when used in the prescribed manner and dosage. Milk diet was provided to cases of *Shopha*. Complete relief was observed in 38.1% of total cases. Relief was noticed in cases of congestive cardiac failure with oedema. About 30% of cases of hygo-proteinaemia responded to this approach. 12.5% of cases of *Pittaja undara roga* showed effects of benefit and cases of ascites associated with congestive cardiac failure also showed improvement. Cases of *Parinama-shoola* and hypertension were also provided a similar dietetic management with advantage. Cases of *Kamala* showed no improvement. Cases of *Grahini*, *athisara* and *pravahika* was given *takra ahara*. The response in cases of *Pittaja grahini* was partial; cases of *Vataja pravahika* and *Vataja athisara* did not show any relief. Diabetic cases did not record significant hypoglycaemic activity with *yava* and *kodrava ahara*. Patients with *Kaphaja sophia* with high cholesterol level did not show any relief with *Yavaahara*. *ulatha Kahara* did not show any usefulness in cases of *Kamala*. *Masha ahara* showed temporary elevation of 17-ketosteroids.

Detailed studies on the effect of *Panchakrama* therapy in the treatment of *unmada* and the response of psychogenic headaches to *Ksheerabala thaila* has been taken up. The therapeutic potentialities of *Tagara* in case of *unmada* are also taken up. *Panchakrama* therapy appeared to provide beneficial leads in the treatment of *unmada* and allied group of conditions, The work on *Beejasara* showed that it has beneficial effect in the treatment of diabetes in initial stages. Diet and exercise have hold in the treatment of *madhumeha*. *Mahatriphala ghrta* and *Saptamrita lauha* showed beneficial effect in the cases of *Timira*. The opinion is based on varying results of improvement observed in 105 cases.

Trial of *Kanchanaraguggulu* and *Shilajitu* irrespective of the *doshic* background of thyroid swellings has been taken up keeping Lugol's iodine for comparative studies. Study on 234 cases revealed that *Kanchanaraguggulu* is more effective than *Shilajitu*.

Out of 31 cases of *medoroga* treated with *Arogyavardhini*, 22 cases showed decrease in blood cholesterol. Reduction in body weight was also observed.

Effect of combination of therapeutic measures like *Sneha karma*, *Shodhana karma* and *Shamana chikitsa* along with another combination trial using only *Sneha karma* and *Shamana chikitsa* was studied along with *Shamana chikitsa* alone in cases of *Pakshavadha*, *Gridhrasi* and *Apabahuka*; *Ksheerabala taila* further medicated with *masa guggulu* or *guduchi*; *Satphalaghrita* adding *balakalka*; under *shodhana chikitsa vasti karma* was performed and *Gandharva hastadi kashaya* was used as *Samana aushada*. *Hingu triguna taila* was used for *Virechana karma*. A total of 97 patients suffering from the disease mentioned earlier were studied, the response was noticed in 49 cases.

Cases of *Kamala* are being treated by *daruharidra* and *Kumari*. The diagnosis is made from clinical history, liver function tests and other investigations. Earlier to the use of *daruharidra kashaya* and *Kumari-asava*, a compound preparation which has *Katukarohini* as main drug was tried under the name *Katuki* compound and *Katuki simplex*. Animal experiments have also been conducted to study the potentiality of *Katukarohini* to protect against the hepatotoxic effect of carbon tetrachloride as well as to evaluate its role on stercobilin. Effect of *Navakaguggulu* in *medoroga* was studied under clinical research. A number of varieties of experiments have been designed to study the effect of isolated crystalline substances in chicks by inducing hyperlipaemic state. Cholesterol triglycerides and other lipid fractions, estimation have been taken as parameters. Apart from this population survey was conducted in the Lanka area of Varanasi. It has been observed that incidence of diabetes is very high in these cases. Clinical trials were conducted in 50 cases using *Navakaguggulu*, petroleum ether extract of *guggulu* and active principle of *guggulu*. Of the 50 patients, 7 were treated at in patient level and the remaining were studied at out patient level. The trial has shown that *guggulu* is capable of reducing cholesterol, triglyceride and phospholipid levels. *Guggulu* appears to be a helpful drug in the treatment of *medoroga*.

Cases of *Vatakapha ashmari/Sarkara* were treated with *Kulatha* and those of *Pitta* with *Gokshura* and *Kapha* with *Varuna*. The studies in-

icated that *Kulath* helps in the treatment of *Sarkara* and also inhibits any increase in the size of stones already formed. *Gokshura* provides relief to patients passing acid urine. *Varuna* is found to tone up the bladder and helps in the treatment of cystitis.

The salient observations on work done on application of *Kshara sutra* in cases of *Bhagandara* will be of interest. The average cutting time of the *Kshara sutra* is found to be sequentially less and less from *apamarga*, *snuhi*, *arka*, *nimba* and *kadali*. The recurrence figures are highest in *nimba* and lowest in *sunhi*. *Apamarga* variety is effective in *Kupha prakriti*, in comparison to *Vata* and *Pitta prakriti*. There have not been adequate number of cases under trial with other kinds of *Kshara sutras*. The *apamarga Kshara sutra* appears to be almost universally useful in all types of *bhagandaras*. These observations are the outcome of study of 550 cases of *bhagandara*. 50 cases of *arshas* also have been treated using *Ksharasutra*.

Effect of *Nasyakarma* in cases of chronic headache where no obvious cause is detectable have been studied. *Shadbindu taila* was tried. The treatment appeared to relieve pain to some extent and also provides sleep.

Wound healing has been an important surgical problem. About seventy drugs claimed to possess *Vrana sodhana* effect have been selected and proteolytic activity of these were studied. Studies conducted on twenty five patients have been encouraging. *Snuhi Kshara* exhibited proteolytic activity. *Paribhadra kshra* and *anannas* were taken up to study their effect on *purishaja krimi*. Fiftysix cases were taken up for trial with *paribhadra*. Of these twelve were administered *paribhadara patra swarasa* in the dose of 50 ml per day for three weeks. The remaining fortyfour patients were given the *paribhadra choorna* in dose of 60 mg/kg body weight in two divided doses for three weeks. *Paribhadra swarasa* has shown results varying from improvement to come and is coosidered useful in mixed parasitic infestations, particularly hook worm and round worm. *Kampillak* in doses of 30 mg/kg body weight in two divided doses for a period of three weeks with honey provided symptomatic relief. The trials with *anannas* were made by administering 25 ml of *patraswarasa* twice daily with honey, for a period of seven days but no change in the parasitic infestation has been observed.

Study of relationship of *jatharagni* to *dhatwagni* was studied both at experimental and clinical level. At the experimental level, the study was conducted using a surgical model and a medical model. In the former, the pancreatic duct had been ligated in experimental animals and in the latter raw soyabeans, a trypsin inhibitor was administered to achieve the desired experimental model.

At clinical level, forty patients suffering from *jatharagnimandya* were taken. Clinical and biochemical studies were conducted which include assessment of peptic and tryptic activity, D-xylose absorption studies and study of functions of thyroid and adrenal glands. The studies revealed that patients with *grahini* in whom *jatharagnimandya* is present had also *dhatwagnimandya*. Gastrointestinal function tests revealed low peptic and tryptic activity. D-xylose absorption was also poor.  $I^{131}$  uptake was found to be low in majority of cases and it was much more so in cases of low serum proteins met with in advanced cases of *grahini*. *Takrarishtha* has been taken up in the treatment of *grahini vikara* and it is likely to yield promising results.

The Council took up to study of *prakriti* with reference to disease proneness. The understanding of *dosha prakriti* facilitates in suggesting appropriate therapeutic measures. Blood grouping, B.M.R. studies blood biochemistry are the few parameters that have been considered in the determination of *prakriti*. Healthy individuals were chosen for providing working information. The studies pointed to the existence of relationship between *doshaprakriti* and causation of disease.

The problem of endocrine response to *rasayana* and other rejuvenation measures was studied both at clinical and experimental levels. Cases subjected to this therapy were administered drug after establishing *deha prakriti* on the basis of physiological, psychological neurohumoral and anthropometric studies. The drugs/recipes that have been taken up are *Sankhapuspi*, *Amalaki* and *Chyavanaprash*. Effect of *amalaki choorna* in *amlapitta* has been carried out. Trials with the same drug in *parinamasoola* has been taken up. Cases of neurogenic thyrotoxicosis and anxiety neurosis were taken up for trial with *Sankhpushpi*. *Chyavanaprash* has been taken for gerontological studies. The experimental studies conducted with *Pippali* and *Guggulu* indicated that oral route of administration seem to be beneficial. The parameters adopted in the study are body weight, serum protein, serum cholesterol, thyroid weight and  $I^{131}$  uptake.

The standardisation of *panchakarma* techniques from clinical and laboratory angles has been attempted. After preliminary *sneha* and *sweda karma* cases of bronchitis/rheumatism were subjected to *Vamana/Virechana karma* based on needs of the case.

Studies to assess the influence of different yogic exercises like *Shirshasana*, *mayurasana*, *bhujangasana*, *shalabhasana*, *sarvangasana*, *matsyasana*, *halasana* and *paschimottanasana* on the individuals has been taken up along with their position in the therapeutic approach in comparison to physical exercise. Body weight, blood pressure, recording, pulse and temperature, breathing time, vital capacity, blood biochemistry are a few of



the important parameters in the studies. There appears to be a distinct influence on the body with yogic exercises as compared to physical exercise.

Treatment of cases of *shula* with *vasti chikitsa* has been taken up and the studies reveal that patients are benefitted by the treatment. *Kseeravasti* and *erandamooladivasti* were taken up. Cases taken up for study are those suffering from *Pittaja parinamashoola*, *Vatashula* and *annadrava shula*. Trial with *Ksheeravasti* was conducted in 144 cases and effect of *Vasti* with *erandamooladikwath* is under study.

In cases of *Vicharchika*, *pama*, *visphota*, *Dadru* and *charmadala*, it has been observed *shodhana chikitsa* with *Itchabhedhi rasa* does good to patient. Supplementing this therapy with internal administration of *Panchathikta ghrta* provides remarkable results. The study was conducted in this *Kshudra kushta* group on 98 patients during the period under review. Clinical research helps in elucidation of the fundamental principles and their applications in the treatment of different diseases. The team paid attention to study of mechanism of causation of disease and the mode of cure when drug or therapy is administered. The diseases have been investigated in terms of concepts and doctrines enunciated in Ayurveda. The efforts are made to clarify the lines and methods of diagnosis and treatment of diseases as described in Ayurveda.

From the perusal of the report it will be observed that the clinical projects have paid attention to the classical tenets described with regard to approach in all its aspects. Elaborate studies of the kind are expected to provide useful information on the conceptual aspects of Ayurveda.

#### **Medical Survey and Surveillance (Fact Finding Mobile Clinical Research Units).**

Mobile Clinical Research Unit, in short, can be treated as medical survey and surveillance project. The Council has collected information relating to health status, position of medical facilities, dietetic and other habits, traditional practices, etc. A country like India having large population settled at villages calls for an approach of this nature to understand and plan methods and measures for health.

Initial and follow up studies are in progress in a number of villages selected on random basis. The teams also has taken up to studies on selected diseases that are prevalent in the area of operation. During the course of initial studies, the teams recorded the health status of the individual/

member of the family as well as family as a whole. Regular periodical contacts with the families provide clues for planning health programmes. Subjects of health education and health care also are covered.

Incidental medical aid is made available. At the request of Vidharbha Relief Committee, the Council arranged a medical camp to attend to diseases consequent upon drought conditions in certain villages

The council also provided possible medical aid to victims of encephalitis which took an epidemic form in Bankura District, West Bengal.

The list of special problems taken up is shown in the annexure.

**Historiography/Literary Research/  
Documentation/Publication**

**Indian Institute of History of  
Medicine**

Indian Institute of History of Medicine has been engaged in study, collection, analysis and publication of source materials for history of medicine in India in all periods (in ancient, mediaeval and modern times) and compiling articles and books throwing light on the origin and development of Ayurveda, Siddha, Unani and European medicine etc. The Institute has a library with about 3000 books and 1000 volumes of journals. The following lectures were delivered at different places.

1. Ross building as Memorial Institute to Ross.
2. Medical practice and medical sects in Europe in 18th and 19th centuries.
3. Medical literature of India—Ancient, mediaval and modern.
4. Historical aspects of Lord Bhagwanthari and evolution of Ayurvedic science.

A number of articles relating to medical historiography have been published. Classification and cataloguing of books of library is done. Information from current bibliography is being collected. The historical articles are being indexed. Microfilming of rare books has been taken up. Enlarged microfilming is made for purpose of study and translation and also for publication in the bulletin. The Institute is maintaining a museum. The Institute is releasing quarterly bulletin containing medico-historical activities and articles on medical history. 'Charucharya' of Bhoja has been released. Bibliographic and information service has been part of the Institute's programme and has been providing references for scholars from different parts of the world.

**Documentation**

The Documentation Centre has three small working groups i.e. technical section, library section and photography section. The technical section is compiling monographs for the 357 drugs of the formulary. They have also collected information from Kasyapa samhita, Bhela samhita, Kaidevanighantu, Vangasena, Indigenous drugs of India, Glossary of medicinal plants and Wealth of India. A handbook of common Ayurvedic remedies has been prepared. The bibliographic details of articles related

with Ayurveda, Unani and Homoeopathy is collected. Replies are provided to Scientific and technical queries. The Centre provided sanskrit slokas for some drugs and bibliography of Unani books available in Delhi is prepared. A working paper on documentation is prepared.

Library received/accessioned 620 books. 145 journals are received. The Centre is keeping records of reprints, reports etc. Newspapers cuttings are classified.

Photo section has microfilmed the following :

1. Vrindamadhava siddhayoga.
2. Vrihad rasrajsundaram
3. Vangasena
4. Stories the feet can tell
5. Poisonous plants of India

Negatives, coloured and black and white and positives are prepared. Projection slides are also prepared. Copying work of charts etc. is taken up. The valuable collection of rare books, documented information and the microfilms of various rare and useful works of different disciplines are expected to be of great value to academicians, research scholars and scientists. The journal wealth of documentation centre keeps the workers abreast the times and they will be able to utilise the advances to the advantage of the medical disciplines. The documentation Centre consequently forms a source to which a research worker can look for information.

#### Literary Research

The Council has taken up translation and publication of rare medical manuscripts available at Maharaja Serfoji Saraswathi Mahal Library, Thanjavur in addition to survey of medical manuscripts in the nearby districts of Thanjavur. The works Bhela samhita and Bhoshaja kalpam are in the process of publication. The work on the following is under finalisation;

1. Sataloki of Avadhana Saraswathi (Sanskrit)
2. Sarabhendravaidya (atnavali) (Sanskrit)
3. Ashtangahridya (Sutrasthana) Tamil translation
4. Rasikaranjani (Marathi)
5. Rasikaranjani (Tamil rendering)
6. Siddha Nagarjuna (Marathi)
7. Siddha Nagarjuna (Tamil rendering)

8. Descriptive catalogue of Sanskrit medical manuscripts.
9. Ashtangahridya (Tamil translation with notes)
10. Chikitsamritasagara (Sanskrit)

Literary Research work on Aswachikitsa and Rasarajalakshmi (both Sanskrit) have been taken up.

**Journal of Research in  
Indian Medicine.**

The Council is releasing a quarterly journal containing articles connected with research in Indian Medicine and Homoeopathy and Yoga and other contemporary disciplines relevant to medical systems.

### Folklore claims

The Council being aware that at times traditional medical practices and folklore claims exert a significant role in treatment of certain diseases in certain areas. This is particularly observable in villages, tribal areas, hill divisions, and in places where faith healers practise. It is generally not possible to get the folklore claims widely used in certain tribal areas since the tribal people do not like to part with the prescriptions that have been coming from generation to generation in their area. They do not like to disclose the recipe lest someone might exploit to the disadvantage of the people there. In case of hereditary physicians, a similar position with regard to remedies exist and they also do not like to furnish this information. In the course of collection of recipes/prescriptions, it may be possible to see a textual prescription followed as a traditional prescription or a folklore claims. Some of the prescriptions are such for which authentic references may not be available, yet they are practised by a code of custom or convention. Instances may be met with where these remedies may prove better than some of the modern remedies. The shift of life from green pastures to city life has brought an indelible imprint in the course of human life and the transition period during this shift has contributed for change in the habits, way of life etc. Medicine is no exemption to this change. Recognising the need to keep this knowledge alive and available for rational trials the Council collected folk remedies that are widely practised in different states. The following table provides the number of such remedies/recipes collected during the year under review :

<i>State</i>	<i>Number of folklore claims collected</i>
Andhra Pradesh	96
Assam	2
Bihar	5
Gujarat	94
Haryana	12
Himachal Pradesh	25
Jammu & Kashmir	60
Karnataka	11
Kerala	12
Madhya Pradesh	11
Maharashtra	5
Orissa	21
Punjab	6
Rajasthan	32
Tamil Nadu	3
Uttar Pradesh	120
West Bengal	13

Name/type of the  
research organisation/location/  
Project Officer

Programme

1. (a) Central Research Institute,  
Patiala.  
Sharma K.
- i) Role of *Yogaraj Guggulu* and *Rasna Saptak Kwatha* on *Amavata*.
  - ii) Use of *Swasa Kesari* in *Tamaka swasa*.
  - iii) Treatment of *Madoroga* with *Guggulu*.
  - iv) Treatment of *Shweta Pradara Kashtartava*, & *Vandhyatwa*.
  - v) Flourosis.
  - vi) Pharmacological study of *Yogaraja Guggulu*.
  - vii) Effect of Deshi Ghee on blood cholestrol levels and *chyavanaprasha* in school going children.
  - viii) To study of effects of *Surma & kajal*.
  - ix) Contraceptive potentially of *Talisadi yoga*.
  - x) Study of *Swasa*.
  - xi) Areas of utility of *Kantakari*, *Ashwagandha* and *Guggulu*.
- (b) Central Research Institute,  
Cheruthuruthy.  
Pillai M.N.K./  
Rajagopalan K.
- i) *Vata* and *Vatarakta*.
  - ii) *Granthi* and *Arbuda* group of diseases.
  - iii) *Pancharma chikitsa*.
  - iv) *Balavata*.
  - v) *Pakshaghata*.
  - vi) *Madhumeha*.
  - vii) Chemistry of *Vitex nigundo* and *Putranjiva roxburghii*.

- viii) Pharmacological study of *Valeriana wallichii*, *Aster-cantha longifolia* and *Curcuma reodoria*.
- ix) *Visa chikitsa*.
- x) *Sweta Pradar* with *Gokshu-radi Modaka Udara* and *krimi* with *gudapippali* and *ativishadi churna*.
2. (a) Regional Research Institute,  
Jaipur.  
*Bhatta G. K.*
- i) *Amavata* and *Grahini roga*.
- ii) Survey, collection, cultivation and supply of drugs.
- iii) Cultivation of *Guggulu*.
- iv) Activities of Ayurvedic Mobile Research Unit (Prevention of *Naru*, Guinea worm infestation).
- v) Activities of Family Planning (Contraceptive potentiality of *Pippalyadi yoga*).
- vi) Standardisation of Ayurvedic Drugs.
- (b) Regional Research Institute,  
Calcutta.  
*Mukherjee G. D.*
- i) Areas of utility of *Changeri*, *Prasarini*, *Pushkara mula*, *Bramhi* etc.
- ii) *Madhumeha* and *Sweta Pradara*
- iii) Survey, collection, cultivation and supply of drugs.
- vi) Activities of Ayurvedic Mobile Research Unit, (Collection and trial of folklore claims/information in the treatment of *Amavata*, *sandhi vata*, *krimi roga* and *Swasakasa*).



- (c) Regional Research Institute,  
Bhubaneswar.  
*Holla B. V.*
3. (a) Regional Research Centre,  
Vijayawada.  
*Venkataraman S.*
- (b) Regional Research Centre,  
Jogindernagar.  
*Chaturvedi P.N.*
- (c) Regional Research Centre,  
Nagpur.  
*Chaudhari S. K.*
- (d) Regional Research Centre,  
Jhansi.  
*Arya M.P.S./Shastri V.V.S.*
- (e) Regional Research Centre,  
Bangalore.  
*Cannabasappa.*
4. Amalgamated Unit,  
Tarikhet.  
*Joshi P.*
- i) *Swasa roga and Gridhrasi*  
ii) Effect of *Nityananda Rasa*  
in *sleepada*  
iii) Survey, collection, cultivation  
and supply of drugs
- i) Survey, collection, cultivation  
and supply of drugs.  
ii) *Amvata* and *shleepada*.
- i) Survey, cultivation, collection  
and supply of drugs.  
ii) Effect of *Musta* in *Atisara*
- i) Survey, collection, cultivation  
and supply of drugs.  
ii) *Rakta Pradara* and *Sandhi-  
vata*
- i) Cultivation, survey, collection  
and supply of drugs.  
ii) Activities of Ayurvedic  
Mobile Research Unit.  
iii) Establishment of Garden  
and Museum.
- i) Survey, cultivation, collection  
and supply of drugs.  
ii) Activities of Ayurvedic  
Mobile Research Unit.  
iii) Standardisation of single  
drugs and standardisation of  
Method of Manufacture.
- i) Survey, collection, cultivation  
and supply of drugs.  
ii) Standardisation of raw drugs,  
Finished Products and  
Method of Manufacture.  
iii) Experimental and large scale  
cultivation of saffron.  
iv) Musk Deer breeding programme.

5. Jawaharlal Nehru  
Ayurvedic Medicinal  
Plants Garden and  
Herbarium,  
Poona,  
*Karnick C.R.* Experimental and large scale  
cultivation of Medicinal  
Plants, maintenance of Her-  
barium, Garden and  
Museum.
6. (a) Survey of Medicinal Plants Unit, Government Ayur-  
vedic college, Gauhati. Survey, collection, cultivation and  
supply of drugs.  
*Bhattacharya S.*
- (b) Survey of Medicinal Plants Unit, Government Ayur-  
vedic College, Patna. —do—  
*Dwivedi N.*
- (c) Survey of Medicinal Plants Unit, Government Ayur-  
vedic College, Gwalior. —do—  
*Bhatnagar L. S.*
- (d) Survey of Medicinal Plants Unit, Government Ayur-  
vedic College, Rajpipla. —do—  
*Jain M.C.*
- (e) Survey of Medicinal Plants Unit, Government College  
of Indian Medicine, Tirunel-  
veli. —do—  
*Kumaraswamy R.*
- (f) Survey of Medicinal Plants Unit, Government Ayurve-  
dic College, Jammu. —do—  
*Sankhydhar S. C.*
7. (a) Captain Srinivasa Murti Research Institute, Madras. *Puru shothaman K.K.* i) Standardisation of raw drugs,  
method of manufacture and  
finished products.  
ii) Laying down the preliminary  
standards for various types of  
preparations.

- (b) Drug Standardisation Research Unit, Ayurvedic Research Institute, Trivandrum.  
*Kurup P.A.* Standardisation of raw drugs, Method of Manufacture and Finished Products.
- (c) Drug Standardisation Research Unit, All India Institute of Medical Sciences, New Delhi.  
*Arora R.B.* Biological standardisation of raw drugs and Finished Products.
- (d) Drug Standardisation Research Unit, J. A. V. M. Pharmacy, Junagadh.  
*Pandey G.B.* Standardisation of Raw drugs, Method of Manufacture and Finished Product
- (e) Preliminary Drug Standardisation Research Unit, Gujarat Ayurvedic University, Jamnagar.  
*Baxi A.J.* Laying down the preliminary standardisation for various types of preparation.
- (f) Preliminary Drug Standardisation Research unit, Institute of Medical Sciences, Banaras Hindu University, Varanasi.  
*Sharma P.V.* Laying down the preliminary standardisation for various types of preparation.
- (g) Drug Standardisation Research Enquiry, Academy of Ayurveda, Vijayawada.  
*Rao N.H.* Analysis of coded drugs.
- (h) Drug Standardisation Research Enquiry, Government Pharmacy of Indian Medicine, Hyderabad.  
*Dev P.* Standardisation of Method of Manufacture and Finished Products.
8. (a) CDRS Pharmacognosy Unit, Indian Drug Research Association, Poona.  
*Pendse G.S.* Pharmacognostical studies of such drugs which are being studied under multi/inter disciplinary approach.

- (b) CDRS, Pharmacognosy Unit, L. M. College of Pharmacy, Ahmedabad. Pharmacognostical studies of such drugs, which are being studied under multi/inter disciplinary approach.  
*Shah C.S.*
- (c) CDRS, Pharmacognosy Unit, Ayurvedic Research Institute, Trivandram. —do—  
*Kolammal. M.*
- (d) CDRS, Pharmacognosy Unit, National Botanic Gardens, Lucknow. —do—  
*Kapoor. L.D.*
- (e) CDRS, Pharmacognosy Unit Regional Research Laboratory, Jammu. —do—  
*Atal C.K.*
- (f) CDRS, Pharmacognosy Unit, Punjab University, Chandigarh. —do—  
*Mehra P.N.*
- (g) CDRS, Pharmacognosy Unit, Calcutta University, Calcutta. —do—  
*Sharma A.K.*
9. (a) CDRS Chemistry Unit, National Chemical Laboratory, Poona. Chemical studies of such drugs which are being studied under multi/inter disciplinary approach.  
*Sukhdev.*
- (b) CDRS Chemistry Unit, Osmania University, Hyderabad. —do—  
*Rao N.V.S.*
- (c) CDRS Chemistry Unit, Kerala University, Trivandrum. —do—  
*Anantaraman S.*

- (d) CDRS Chemistry Unit, Chemical studies of such drugs  
Delhi University, Delhi. which are being studied under multi/  
*Sheshadri T.R./* inter disciplinary approach.  
*Rangaswamy S.*
- (e) CDRS Chemistry Unit, —do—  
Calcutta University,  
Calcutta.  
*Chatterji A.*
- (f) CDRS Chemistry Unit, —do—  
Institute of Medical Sciences,  
Banaras Hindu University, Varanasi.  
*Dasgupta B.*
10. (a) CDRS Pharmacology Unit, Pharmacological studies of such  
Haffkine Institute, Bombay. drugs which are being studied under  
*Gaitonde B.B./Bhide M.B.* multi/inter disciplinary approach.
- (b) CDRS Pharmacology Unit, —do—  
Govt. Medical College,  
Jodhpur.  
*Sharma V.N.*
- (c) CDRS Pharmacology Unit, —do—  
Government Medical  
College, Trivandrum.  
*Radhakrishnan N.*
- (d) CDRS Pharmacology Unit, —do—  
K.G. Medical College,  
Lucknow.  
*Kohli R.P.*
- (e) CDRS Pharmacology Unit, —do—  
Institute of Medical Sciences,  
Banaras Hindu University, Varanasi.  
*Das P.K.*

- (f) CDRS Pharmacology Unit, Gandhi Medical College, Bhopal. Pharmacological studies of such drugs which are being studied under multi/inter disciplinary approach  
*Gupta S.S.*
- (g) CDRS Pharmacology Unit, All India Institute of Medical Sciences, New Delhi. —do—  
*Arora R.B.*
- (h) CDRS Pharmacology Unit, Lady Hardinge Medical College, New Delhi. —do—  
*Mehta V.L.*
- (i) CDRS Pharmacology Unit, Calcutta University, Calcutta. —do—  
*Dasgupta S.R.*
11. (a) CDRS Clinical Teams, STRCA Hospital and B. J. Medical College, Poona. Assessment of areas of utility of such drugs which are being studied under multi/inter disciplinary approach.  
*Nanal B.P. & Mutalik G.S.*
- (b) CDRS Clinical Teams, R.A. Podar Ayurvedic College and J.J.Group of Hospitals, Bombay. —do—  
*Lele M.Y. & Vakil B.J.*
- (c) CDRS Clinical Teams, New Civil Hospital, Ahmedabad. —do—  
*Barot K.C. & Gupta O.P.*
- (d) CDRS Clinical Teams, Government Ayurvedic College and Government Medical College, Trivandrum. —do—  
*Nair M.P.S. & Pai K.N.*

- (e) CDRS Clinical Teams, State Ayurvedic College and K.G. Medical College, Lucknow. *Sharma V.K. & Gupta N.* Assessment of areas of utility of such drugs which are being studied under multi/inter disciplinary approach.
- (f) CDRS Clinical Teams, Institute of Medical Sciences, Banaras Hindu University, Varanasi. *Upadhyaya Y.N. & Bajpai H.S.* —do—
- (g) CDRS Clinical Teams, Government Ayurvedic College and G.R. Medical College, Gwalior. *Bhatnagar L.S. & Ajayshankar* —do—
- (h) CDRS Clinical Teams, Safdarjung Hospital and All India Institute of Medical Sciences, New Delhi. *Gupta V.P. & Ahuja M.M.S.* —do—
12. (a) Toxicology Study Unit, L.L.R.M. Medical College, Meerut. *Prasad D.N.* Toxicity and confirmatory studies of the alleged therapeutic potentialities of the indigenous drugs.
- (b) Toxicology Study Unit, Haffkine Institute, Bombay. *Gaitode B.B.* —do—
13. (a) Extraction Supply Unit, Culcutta University, Culcutta. *Chatterji A.* Isolation and supply of different extracts of plant materials.
- (b) Extraction Supply Unit, Kerala University, Trivandrum. *Anantaraman S.* —do—

14. (a) CDRS Clinical Enquiry, Wellingdon Hospital, New Delhi. Clinical trials of *Guggulu* in lipid disorders.  
*Bhist D.B.*
- (b) CDRS Clinical Enquiry, Dr. A. Lakshmi pathi Unit for Research in Indian Medicine, Madras. —do—  
*Dwarkanath C./*  
*Rao M.V.R.A*
- (c) CDRS Chemical Enquiry, Central Drug Research Institute, Lucknow. Isolation and supply of different extracts of plant materials.  
*Nityanand.*
15. (a) Clinical Research Unit, Dr. A. Lakshmi pathi Unit for Research in Indian Medicine, Madras. Studies on *Prakriti*, *Rasayana* and *Medhya* action of certain indigenous drugs.  
*Sanjivi K.S.*
- (b) Clinical Research Unit, All India Institute of Mental Health, Bangalore. Application of Ayurvedic concepts and treatment in mental disorders.  
*Verma R.M.*
- (c) Clinical Research Unit, R. A. Podar Ayurvedic College, Bombay. i) Effect of dietetic therapy in diseases  
ii) Effect of *Panchkarma* therapy in the treatment of *Vatavyadhi*.  
*Antarker D.S./Lele M.Y.*
- (d) Clinical Research Unit, Arya Vaidyashala, Kottakal. *Shoola* group of diseases.  
*Warriar P.K.*
- (e) Clinical Research Unit, A & U Tibbia College, New Delhi. *Amavata*, *Sandhigata vata*, *Gridhrasi*, *Parinama* and *Anna dravaja shula*.  
*Atreya K.P.*
- (f) Clinical Research Unit, Government Ayurvedic College, Hyderabad. Effect of *Amashaya shodhana* in *Parinama shula*.  
*Roo I. S.*



(g) Clinical Research Unit, *Madhumeha*  
Government Ayurvedic College, Baroda.  
*Mahiskar V.B.*

16. (a) Clinical Research Enquiry, i) Aetio pathogenesis of *Timira*  
Gurukul Kangari Ayurvedic and its management.  
College and Rishikul Ayurvedic ii) Aetio pathogenesis of Thyroid  
College, Hardwar. swellings and its treatment by  
*Anandanand/Gupta R.P.* indigenous medicine.

(b) Clinical Research Enquiry, Effect of *Arogyavardhini* in  
Government Ayurvedic College, Lucknow. *Medoroga.*  
*Sharma V.K.*

(c) Clinical Research Enquiry, i) *Kamala* and *Yakritroga*.  
Institute of Medical Sciences, Banaras Hindu University, Varanasi. ii) *Nidana, Samprapti* and role of  
*Guggulu* in *medoroga*, *Madhv-*  
*sava* in *Prameha* and aetiopatho-  
genesis and treatment of  
*Grahini*.

*Chaturvedi G.N/*  
*Tripathi S.N/*  
*Singh L.M/*  
*Deshpande P.J/*  
*Udupa K.N.*

iii) Role of *Varuna*, *Kulatha* and  
*Gokshura* in the management of  
urinary calculus,  
iv) Effect of Ayurvedic drugs on  
*Shodhana* and *Ropana*, effect of  
*Kshara sutra* on anorectal dis-  
orders and standardisation  
principles/techniques of *Nasya-*  
*karma*.  
v) Physiological, endocrine and  
metabolic response to *Rasayana*  
*yoga* and *Panchakarma* therapy.

(d) Clinical Research Enquiry, Study of *Prakriti* and diseases pro-  
STRCA Hospital, neness.  
Poona.  
*Wadalkar M.G.*

(e) Clinical Research Enquiry, i) Effect of *Basti* on *Shoola*.  
Government Ayurvedic ii) Role of *Shodhana* in *Pittaja*  
Hospital/Maniben *Kshudra Kushta*.  
Ayurvedic Hospital,  
Ahmedabad.  
*Giri D.T./Kasture H.S.*

- (f) Clinical Research Enquiry, Study of *Palshavadha*, *Gridhrasi* and  
A.A. Government Hospital, *Apabahuka*.  
Madras.  
*Nair A.K.*
- (g) Clinical Research Enquiry, *Pureeshaja krimi* and its treatment  
Government Ayurvedic with indigenous drugs.  
College, Gauhati.  
*Bhattacharya S.*
- (h) Clinical Research Enquiry, Effect of *Vijayasara* in *Madhumeha*.  
Government Ayurvedic  
College, Jammu.  
*Sankhyadhar S.C.*
17. (a) Ayurvedic Mobile Research Effect of ghee and other saturated  
Unit, Sri Krishna Ayurvedic fats on serum cholesterol.  
College, Kurukshetra  
*Sharma P.P.*
- (b) Ayurvedic Mobile Research Estimation of blood cholesterol level  
Unit, Civil Hospital. in vegetarians and non-vegetarians.  
Vidisha.  
*Singh N.*
- (c) Ayurvedic Mobile Research Effect of *Bilwadi* and *Shatapushpadi*  
Unit, Institute of Medical *churna* in *Pravahika* and study on  
Sciences, Banaras Hindu the prevalence of *Madhumeha*.  
University, Varanasi.  
*U'padhyaya Y.N.*
- (d) Ayurvedic Mobile Research Skin Disorders and estimation of  
Unit, Gujarat Ayurved blood cholesterol in vegetarians and  
University Jamnagar. in diseased state.  
*Shukla C.P.*
18. (a) Indian Institute of History Documentation, Medico-historical,  
of Medicine, Hyderabad. Literary Research, Publication of  
*Reddy D.V.S.* quarterly Journal.
- (b) Documentation Wing, Head- Documentation.  
quarters, New Delhi.  
*Pandey V.N.*

(c) Journal of Research in Indian Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi.

*Udupa K.N.*

(d) Literary Research Unit, TMSSM Library, Thanjavur.

*Pillai K*

Literary studies on Bhela samhita, Chikitsamrita sagar, Ashtanga hridaya and Charaka Samhita.

(e) Guidance Mannual, Drug Research Laboratory, Baroda.

*Satagopan S.*

Preparation of guidance manual for identification of drugs.

**Composite Drug Research Scheme (CDRS)**

Sl. No.	Location/Project Officer	Problems that are being studied
<i>Pharmacognostical study :</i>		
1.	Indian Drug Research Association, Poona. <i>Pendse G.S.</i>	i) <i>Zaleya pentandra</i> ii) <i>Vateria indica</i> iii) <i>Dendrophthoe falcata</i> iv) <i>Typha angustata</i> v) <i>Adhatoda vasica</i> vi) <i>Feronia limonea</i> vii) <i>Pongamia pinnata</i>
2.	L.M. Pharmacy College, Ahmedabad. <i>Shah C.S.</i>	i) <i>Paspalum scrobiculatum</i> ii) <i>Elephantopus scaber</i>
3.	Ayurvedic Research Institute, Trivandrum. <i>Kolammal M.</i>	i) <i>Azadirachta indica</i> ii) <i>Plumbago zeylanica</i> iii) <i>Salacia fruticosa</i>
4.	National Botanic Gardens, Lucknow. <i>Kapoor L.D.</i>	i) <i>Albizia lebbek</i> ii) <i>A. procera</i> iii) <i>Nelumbo nucifera</i> iv) <i>Ficus tsiela</i> v) <i>Beta vulgaris</i>
5.	Regional Research Laboratory, Jammu. <i>Atal C.K.</i>	i) <i>Piper officinarum</i> ii) <i>Withania somnifera</i>
6.	Punjab University, Chandigarh. <i>Mehra P.N.</i>	i) Aconites
7.	Calcutta University, Calcutta. <i>Sharma A.K.</i>	i) <i>Barringtonia racemosa</i> ii) <i>Marsilea minuta</i> iii) <i>Pinus longifolia</i> iv) <i>Taxus baccata</i>

*Chemical study :*

1. National Chemical Laboratory,  
Poona.  
*Sukhdev*
  - i) *Commiphora mukul*
  - ii) *Asparagus racemous*
  - iii) *Pueraria tuberosa*
2. Osmania University,  
Hyderabad.  
*Rao N.V.S.*
  - i) Analytical study of various types of preparations of *Adhatoda vasica*
  - ii) *Holarrhena antidysenterica*
  - iii) *Mesua ferrea*
  - iv) *Cassia siamea*
3. Kerala University,  
Trivandrum.  
*Anantaraman S.*
  - i) *Calycopteris floribunda*
  - ii) *Cassia fistula*
  - iii) *Melia azadirachta*
  - iv) *Thespesia populnea*
  - v) *Centrantherum anthelminticum*
  - vi) *Plumbago zeylanica*
  - vii) *Mimosa pudica*
  - viii) *Asteracantha longifolia*
  - ix) *Embelia ribes*
  - x) *Bacopa monnieri*
4. Delhi University,  
Delhi.  
*Sheshadri T.R.*
  - i) *Eugenia jambolana*
  - ii) *Abrus precatorius*
  - iii) *Xanthoxylum acanthopodium*
  - iv) *Butea monosperma*
  - v) *Bergenia stracheyi*
  - vi) *B. crassifolia*
  - vii) *Paspalam scorbiculatum*
  - viii) *Crocus sativus*
5. Delhi University,  
Delhi.  
*Rangaswamy S.*
  - i) *Gardenia latifolia*
  - ii) *Salacia fruticosa*
  - iii) *Cucumis melo*
6. Calcutta University,  
Calcutta.  
*Chatterjee A.*
  - i) *Withania somnifera*
  - ii) *Nerium indicum*
  - iii) *Oroxylum indicum*
  - iv) *Aegle marmelos*
  - v) *Callicarpa macrophylla*
  - vi) *Stephania glabra*
  - vii) *Atlantia monophylla*
  - viii) *Prangos pobularia*
  - ix) *Cassia angustifolia*

7. Institute of Medical Sciences,  
Banaras Hindu University,  
Varanasi.  
*Dasgupta B.*
- i) *Picrorhiza kurroa*  
ii) *Pluchea lanceolata*  
iii) *Vanda roxburghii*  
iv) *Tecomella undulata*  
v) *Grewia asiatica*  
vi) *Fumaria indica*  
vii) *Crataeva nurvala*  
viii) *Albizia lebbbeck*  
ix) *Cassia tora*
8. Central Drug Research Institute  
Lucknow.  
*Nityanand.*
- i) Isolation and supply of active principles of plant materials.

*Pharmacological study :*

1. Haffkine Institute,  
Bombay.  
*Gaitonde B.B.*
- i) *Boerhaavia diffusa*  
ii) *Pueraria tuberosa*
2. Haffkine Institute,  
Bombay.  
*Bhide M.B.*
- i) *Adhatoda vasica*  
ii) *Tylophora indica*  
iii) *Mesua ferea*
3. Government Medical College  
Jodhpur.  
*Sharma V.N.*
- i) *Bergenia ligulata*  
ii) *Abrus precatorius*
4. Government Medical College,  
Trivandrum.  
*Radhakrishnan N.*
- i) *Cassia fistula*  
ii) *Salacia prenoides*  
iii) *Thespesia populnea*  
iv) *Dolichos biflorus*  
v) *Mimosa pudica*  
vi) *Astercantha longifolia*  
vii) *Melia azadirchta*  
viii) *Calycopteris floribunda*  
ix) *Plumbago zeylanica*
5. Government Medical College,  
Lucknow.  
*Kohli R.P.*
- i) *Sesamum indicum*  
ii) *Zanthoxylum alatum*  
iii) *Jatropha curcas*  
iv) *Lagenaria sativus*  
v) *Withania somnifera*  
vi) *Leucas cephalotes*

- vii) *Celastrus paniculatus*  
viii) *Moringa pterygosperma*  
ix) *Cucumis sativus*
6. Institute of Medical Sciences,  
Banaras Hindu University,  
Varanasi.  
*Das P.K.*
7. Lady Hardinge Medical College,  
New Delhi.  
*Mehta V.L.*
8. Gandhi Medical College,  
Bhopal.  
*Gupta S.S.*
9. All India Institute of  
Medical Sciences,  
New Delhi.  
*Arora R.B.*
10. Calcutta University,  
Calcutta.  
*Dasgupta S.R.*
- i) *Albizzia lebeck*  
ii) *Crataeva nurvala*  
iii) *Semecarpus anacardium*  
iv) *Fumaria parviflora*
- i) *Commiphora mukul*
- i) *Gardenia turgida*  
ii) *Gardenia latifolia*  
iii) *Achyranthes aspera*  
iv) *Curcuma longa*  
v) *Desmodium gangeticum*
- i) Semicarbazone  
ii) Jatamansone  
iii) *Petalium murex*  
iv) Musk  
v) Peruvoside
- i) *Acorus calamus*  
ii) *Vitex negundo*  
iii) *Saussarea lappa*  
iv) *Inula racemosa*  
v) *Blumea lacera*

*Clinical study :*

1. STRCA Hospital and  
B.J. Medical College,  
Poona.  
*Nanal B.P./Mutalaik G.S.*
2. R.A. Podar Ayurvedic College,  
J.J. Group of Hospitals Bombay.  
*Lele M.Y./Valal B.J.*
- i) *Punarnava* as *Shophanashini*  
ii) Curative effect of *Shatavari* in  
*Amlapitta* and *Parinama shoola*  
and other allied conditions.  
iii) *Shigru* in *Udarakrimi*.  
iv) *Vidarikanda* as Gametogenic  
v) Estimation of galactagogue pro-  
perty of *Shatavari* and its action  
on *Rajasrava*.
- i) Effect of *Kumari* and its pre-  
parations in *Parinama shoola*,  
*Kashtartava* and *Jeerna prati-*  
*shyaya*.

- ii) Effect of *Parijata* in *Gridhrasi*.  
 iii) Effect of *Ativisha* in *Atisara & Pravahika*.  
 iv) Effect of *Haritakti* in obesity.  
 v) Effect of *Nagakeshar* in *Sweta Pradara*.
3. New Civil Hospital,  
 Ahmedabad.  
*Barot K.C. & Gupta O.P.*
- i) Study on *Madhumeha hara dravyas, Bilwa, Jamboo, & Mamajjaka*.  
 ii) Effect of *Jyotishmati* in hypertension.
4. Government Ayurvedic College and Government Medical College, Trivandrum.  
*Nair M.P.S./Pai K.N.*
- i) Effect of various preparations of *Nimba* and *Sariva* in skin diseases.  
 ii) Effect of *Lajjalu* in *Psoriasis*.  
 iii) Effect of *Chitraka* in *Arshas*.
5. State Ayurvedic College and K.G. Medical College, Lucknow.  
*Sharma V.K. & Gupta N.*
- i) Effect of *Karaveera* in *Hridroga*.  
 ii) Effect of *Gandhaprasarini* in *Vatavyadhi*.  
 iii) Effect of *Bilwa* in *Antrakrimi*.  
 iv) Effect of *Vibhitaka* in *Kasa swasa*.  
 v) Role of *Pippali* as *Rasayana*.
6. Institute of Medical Sciences, Banaras Hindu University, Varanasi.  
*Upadhyaya Y.N. & Bajpai H.S.*
- i) Effect of *Shireesh* in *Shiroroga*.  
 ii) Role of *Shireesh* as *Vishaghna*.  
 iii) Effect of *Katurohini* in *Yakritroga*.
7. Government Ayurvedic College & G.R. Medical College, Gwalior.  
*Bhatnagar L.S. & Ajayshankar.*
- i) Effect of *Gardenia latifolia (Bharangi)* in case of *Tamaka Swasa*.  
 ii) Effect of *Haridra, kantakari* and *Apamarga* in *Swasa kasa*,  
 iii) Effect of *Shathi* in Tropical Eosinophilia.
8. Safdarjang Hospital and All India Institute of Medical Sciences, New Delhi.  
*Gupta V.P. & Ahuja M.M.S.*
- i) Effect of *Saptarangi (Salacia fruticosa)* and *Bimbi* in *Madhumeha*.



9. Wellington Hospital,  
New Delhi.  
*Bhist D.B.*

10. Dr. A. Lakshmi pathi Unit for  
Research in Indian Medicine,  
Madras.  
*Dawarkanath C./Rao M.V.R.A.*

ii) Role of *Guggulu* and its frac-  
tions as hypolipidaemic  
agents.

i) Assessment of hypolipidaemic  
potentiality of *Guggulu* and its  
fractions.

—do—

### Study of the coded drugs

Sl. No.	Name of the Drug	Type of study
1.	AYUSH 1 to 5, 18 to 45, 52(A&B), 53, 54,	Standardisation studies.
2.	AYUSH 7, 10, 47.	Study of its Antiovolatory effects.
3.	AYUSH 9, 17, 48.	Study of its Anti-diabetic potentiality and Toxicity studies.
4.	AYUSH 11, 13.	Study of its Anabolic and Analeptic activity and Toxicity studies.
5.	AYUSH 12, 14, 15, 16.	Toxicity studies and hypolipaedemic potentiality.
6.	AYUSH 46.	Toxicity study and carminative as well as laxative effect.
7.	AYUSH 49.	Study of its Antiasthmatic potentialities.
8.	AYUSH 50.	Study of its Antitumor activity.
9.	AYUSH 51.	Study of its Antivenom effect.

Survey of Medicinal Plants

Sl. No.	Name of the State	Location/ Project Officer	Forest Divisions/ Ranges/Zones covered	Herbarium Sheets	Plants under cultivation	Plants at Museum
1.	Andhra Pradesh	Regional Research Centre Vijayawada. <i>Venkataramhavan S.</i>	2	2,331	61	250
2.	Assam	Government Ayurvedic College, Gauhati. <i>Bhattacharya S.</i>	3	2,252	83	20
3.	Bihar	Government Ayurvedic College, Patna. <i>Dwivedi N.</i>	1	200	—	—
4.	Gujarat	Government Ayurvedic Pharmacy College, Rajpipla. <i>Jain M. C.</i>	5	89	—	167
5.	Himachal pradesh	Regional Research Centre, Jogindernagar. <i>Chaturvedi P. N.</i>	3	294	—	—

SI. No.	Name of the State	Location/ Project Officer	Forest Divisions/ Ranges/ Zones covered	Herbarium Sheets	Plants under cultivation	Plants at Museum
6.	Jammu & Kashmir	Government Ayurvedic College, Jammu. <i>Sankhyadhar S. C.</i>	5	795	143	28
7.	Karnataka	Regional Research Centre, Bangalore. <i>Channabasappa</i>	4	242	143	28
8.	Kerala	Government Ayurvedic College, Trivandram. <i>Nair M.P.S.</i>	2	93	42	40
9.	Madhya Pradesh	Government Ayurvedic College, Gwalior. <i>Bhatnagar L. S.</i>	2	803	—	65
10.	Maharashtra	Regional Research Centre, Nagpur. <i>Chaudhari S. K.</i>		116	—	59
11.	Orissa	Regional Research Institute, Bhubaneswar. <i>Holla B. V.</i>	4	321	58	40

SI. No.	Name of the State	Location/ Project Officer	Forest Divisions/ Ranges/ Zones covered	Herbarium Sheets	Plants under cultivation	Plants at Museum
12.	Rajasthan	Regional Research Institute, Jaipur. <i>Bhatt G. K.</i>	1	452	137 Extensive cultivation of <i>Guggulu</i> .	54
13.	Tamil Nadu	Government College of Indian Medicine, Tirunelveli. <i>Kumaraswamy S.</i>	4	345	231	33
14.	Uttar Pradesh	Amalgamated Units, Tarikhet. <i>Joshi P.</i>	6	1,850	60 Saffron cultivation	
		Regional Research Centre, Jhansi. <i>Arya M.P.S./Sastry V.V.S.</i>	1	121	28	47
15.	West Bengal	Regional Research Institute, Calcutta. <i>Mukherjee G.D.</i>	2	125	61	75

### Standardisation Programme

Sl. No.	Location/Project Officer	Studies conducted		
		Raw Drugs	Methods of Manufacture	Finished Products
1	2	3	4	5
1.	Amalgamated Units, Tarikheth. <i>Joshi P.</i>	12	3	5
2.	Captain Srinivasa Murti Research Institute, Madras. <i>Purushothaman K.K.</i>	10	3	1 147 (Working data)
3.	Regional Research Centre, Bangalore, <i>Channabasappa.</i>	25	3	—
4.	Ayurvedic Research Institute, Trivandrum. <i>Kurup P.A.</i>	22	1	4 15(Working data of coded drugs)
5.	All India Institute of Medical Sciences, New Delhi. <i>Arora R.B.</i>	—	—	5
6.	G.A.V.M. Pharmacy, Junagadh. <i>Pande G.B.</i>	5	4	4
7.	Ayurvedic University, Jamnagar. <i>Baxi A.J.</i>	—	—	81(Working data)

Sl. No.	Location/Project Officer	Studies conducted		
		Raw Drugs	Methods of Manufacture	Finished Products
1	2	3	4	5
8.	Institute of medical Sciences, Banaras Hindu University, Varanasi. <i>Sharma P.V.</i>	—	—	75(Working data)
9.	Academy of Ayurveda, Vijayawada. <i>Rao N.H.</i>	—	—	2 Coded Drugs
10.	Government Pharmacy of Indian Medicine, Hyderabad. <i>Dev P.</i>	—	—	2

## Clinical Research

Sl. No.	Location/Project Officer	Problems taken for study
1.	Dr. A. Lakshmipathi Unit for Research in Indian Medicine Madras. <i>Sanjeevi K.S.</i>	<ul style="list-style-type: none"> <li>i) Study into concept of nutrition according to Indian Medicine.</li> <li>ii) Preparation of formulary of simple home remedies.</li> <li>iii) Study of <i>Prakriti</i> on constitutional factors in health and disease.</li> <li>iv) Clinical and experimental assessment of <i>Rasayana</i> drugs.</li> <li>v) The effect of <i>Rasayana</i> drugs on some psychological aspects.</li> </ul>
2.	All India Institute of Mental Health, Bangalore. <i>Verma R.M.</i>	<ul style="list-style-type: none"> <li>i) Assessment of effect of <i>Pancha-karma</i> therapy in <i>Unmada</i>.</li> </ul>
3.	R.A. Podar Ayurvedic Hospital, Bombay. <i>Lele M.Y.</i> <i>Antarkar D.Y.</i> <i>Antarkar D.S.</i>	<ul style="list-style-type: none"> <li>i) Evaluation of effects of <i>Pancha-karma chikitsa</i> in the treatment of <i>Vatavyadhi</i>.</li> <li>ii) Study of roll of diet prescribed in Ayurveda for certain clinical conditions.</li> </ul>
4.	Arya Vaidyashala, Kottakkal. <i>Warriar P.K.</i>	<ul style="list-style-type: none"> <li>i) Studies of effect of therapeutic measures in <i>Parinama shula</i>.</li> </ul>
5.	A & U. Tibbia College, New Delhi. <i>Atreya K. P.</i>	<ul style="list-style-type: none"> <li>i) Clinical trial of <i>Amavata</i>, <i>Sandhigata vata</i>, <i>Gridhrasi</i> with <i>Nirgundi</i>.</li> <li>ii) Clinical trial of <i>Parinama Shula</i> and <i>Anadrava shula</i> with <i>Kushmanda swarasa</i>.</li> </ul>
6.	Government Ayurvedic College, Hyderabad. <i>Rao I.S.</i>	<ul style="list-style-type: none"> <li>i) Effect of <i>Amashaya shodhana</i> with <i>Varuna kwatha</i> in <i>Parinama shula</i>.</li> </ul>



- |   |  |
|---|--|
| 7. Government Ayurvedic College,<br>Baroda.<br><i>Mahiskar V.B.</i>     | i) Evaluation of effects of <i>Shuda shilajitu</i> and <i>Dhatrinisha</i> in the treatment of <i>Madhumeha</i> .                   |
| 8. Rishikul Ayurvedic College,<br>Hardwar.<br><i>Gupta R.P.</i>         | i) Aetiopathogenic studies and treatment of <i>Timira roga</i> using <i>Maha Triphala Ghrita</i> and <i>Saptamrita lauha</i> .     |
| 9. Gurukul Kangri Ayurvedic College,<br>Hardwar.<br><i>Anandanand</i>   | i) Screening of effects of indigenous drugs in thyroid swellings and aetiopathogenic studies of the same based on Ayurvedic works. |
| 10. State Ayurvedic College,<br>Lucknow.<br><i>Sharma. V.K.</i>         | i) Effect of <i>Arogyavardhini</i> in <i>Medoroga</i> .  |
| 11. Tilak Ayurvedic College,<br>Poona.<br><i>Wadalkar M.G.</i>          | i) Studies on <i>Prakriti</i> and disease proneness.   |
| 12. Akantanand Ayurvedic Hospital,<br>Ahmedabad.<br><i>Giri D.T.</i>    | i) Investigation of the role of <i>Shodhana chikitsa</i> in cases <i>Pittaja Kshudra Kushta</i> .                                  |
| 13. Maniben Ayurvedic Hospital,<br>Ahmedabad.<br><i>Kasture H.S.</i>    | i) Study of effect of <i>Vasti</i> in <i>Shoolas</i> .   |
| 14. A.A. Hospital,<br>Madras.<br><i>Nair T.A.K.</i>                     | i) Effect of <i>Virechana</i> and <i>Vasti</i> in the treatment of <i>Vatavyadhi</i> .   |
| 15. Government Ayurvedic College,<br>Gauhati.<br><i>Bhattacharya S.</i> | i) Trial of certain Ayurvedic drugs in the treatment of <i>Purishaja Krimiroga</i> .   |
| 16. Government Ayurvedic College,<br>Jammu.<br><i>Sankhyadhar S.C.</i>  | i) Evaluation of anti-diabetic effects of <i>Beejasara</i> .   |

17. Institute of Medical Sciences,  
Banaras Hindu University,  
Varanasi.

*Chaturvedi G.N./*

i) Study on aetiopathogenesis of *Kamala* and *Yokritroga* and its treatment with *Katuki* and preparations.

*Deshpande P.J./*

i) Standardisation of treatment of *Bhagandara* and *Arashas* by *Kshara sutra*.

ii) Standardisation of principles and techniques of *Nasya Karma*.

iii) Study of effect of certain Ayurvedic drugs in the treatment of wounds.

*Singh L.M./*

i) Evaluation of effect of *Varuna kulatha* and *Gakshura* in *Mootrashmari*.

*Tripathi S.N./*

i) Clinical and experimental trials of *Navaka Guggulu* in *Medoroga* and other allied disorders.

ii) Study of relationship of *Jatharagni* to *Dhatwagni*.

*Udupa K.N.*

i) Endocrine response to *Rasayana* and other rejuvenation measures.

## Medical Survey and Surveillance

Sl. No.	Location/ Project Officer	Programme/Study
1.	Central Research Institute, Cheruthuruthy. <i>Pillai M.N.K./Rajgopalan K.</i>	i) Study of <i>Shweta pradara</i> with <i>Gokshura modaka</i> and <i>Guda pippali</i> and <i>Ativishadi churna</i> in <i>Udara krimi</i> . ii) Collection of Health Statistics.
2.	Central Research Institute, Patiala. <i>Sharma K.</i>	i) Effect of <i>Deshi ghee</i> on blood cholesterol. ii) Effect of <i>Chyavanaprasha</i> in school going children. iii) Collection of Health Statistics.
3.	Regional Research Institute, Jaipur. <i>Bhatta G.K.</i>	i) Prevention of <i>Naru</i> . ii) Collection of Health Statistics.
4.	Regional Research Institute; Calcutta. <i>Mukherjee G.D.</i>	i) Collection and trial of folk-lore claims/information in the treatment of <i>Amavata</i> , <i>Sandhi vata</i> , <i>Krimi</i> and <i>Swasa kasa</i> .
5.	Regional Research Institute, Bhubaneswar. <i>Holla B.V.</i>	i) Effect of <i>Nityanand rasa</i> in <i>Shleapada</i> . ii) Collection of Health Statistics.
6.	Regional Research Centre, Vijayawada. <i>Venkataraman S.</i>	i) Effect of certain common drugs in <i>Amavata</i> and <i>Shleapada</i> . ii) Collection of Health Statistics.
7.	Regional Research Centre, Jogindernagar. <i>Chaturvedi P.N.</i>	i) Effect of <i>Musta</i> in <i>Atisara</i> . ii) Collection of Health Statistics.
8.	Regional Research Centre, Nagpur. <i>Chaudhari S.K.</i>	i) Effect of certain common drugs in <i>Rakta pradara</i> and <i>Sandhi-vata</i> . ii) Collection of Health Statistics.

9. Regional Research Centre,  
Bangalore.  
*Channabasappa.*
10. Ayurvedic Mobile Research  
Unit, Sri Krishna Ayurvedic  
College, Kurukshetra.  
*Sharma P.P.*
11. Ayurvedic Mobile Research  
Unit, Ayurvedic University,  
Jamnagar.  
*Shukla C.P.*
12. Ayurvedic Mobile Research  
Unit, New Civil Hospital,  
Vidisha.  
*Singh N.*
13. Ayurvedic Mobile Research  
Unit, Institute of Medical  
Sciences, Banaras Hindu  
University, Varanasi.  
*Upadhyaya Y.N.*
- i) Collection of Health Statistics.  
ii) Effect of *Shatavari churna* and  
*Shatavari mandoora* in *Pandu*  
*roga*.
- i) Effect of Ghee and other  
saturated fats on serum chole-  
sterol.  
ii) Collection of Health Statistics.
- i) Estimation of blood cholesterol  
in normal and diseased State.  
ii) Effect of common drugs in skin  
disorders.  
iii) Collection of Health Statistics.
- i) Estimation of blood cholesterol  
level in vegetarian and non-  
vegetarians.  
ii) Collection of Health Statistics.
- i) Effect of *Bilwadi* and *Shata-  
pushpadi churna* in *Pravahika*.  
ii) Studies on the prevalence of  
*Madhumeha*.  
iii) Collection of Health Statistics

Medical Survey and Surveillance (Medical Facilities)

Sl. No.	Name of the Unit	Name of the area	No. of Hos-pitals		No. of Dis-pensaries		No. of private practitioners						
							Resident of the area		Daily visitor to the area		Occasional visitor to the area		
			Ayur.	Others	Ayur.	Others	Ayur.	Others	Ayur.	Others	Ayur.	Others	
1	2	3	4	5	6	7	8	9	10	11	12	13	
1.	Central Research Institute, Cheruthuruthy.	Cheruthuruthy	—	—	—	—	—	—	—	—	—	1	—
		Varavoor	—	—	1	—	4	—	3	—	—	—	—
		Wadakanchery	—	—	1	—	2	5	—	2	—	—	—
		Deshamangalam	—	—	—	—	1	3	2	5	—	1	—
		Panjai	—	—	—	—	1	1	—	2	—	—	—
		Shoranur	—	—	—	—	1	3	1	1	—	2	—
		Ongallur	—	—	—	—	—	—	—	2	1	—	1
		Thekkumkara	—	—	1	—	—	—	2	3	—	—	—
		Ottapalam	—	1	1	1	—	—	—	5	2	—	—
		Pazhayannur	1	—	—	—	2	—	—	2	1	—	—
		Mundathicode	—	1	1	—	—	2	—	1	—	—	1
		Koppam	—	1	—	—	—	3	—	2	—	—	—
		Erumapetty	—	1	1	—	—	5	—	—	—	—	—
		Killanoor	—	—	—	—	1	3	—	—	—	2	—
Kondazhy	—	—	1	1	—	5	1	—	—	—	—		
2.	Central Research Institute, Patiala.	Hajimajra	—	—	1	—	—	—	—	—	—	—	
		Wajidpur	—	—	1	—	1	—	1	—	1	—	

(06)

1	2	3	4	5	6	7	8	9	10	11	12	13
3.	Regional Research Institute, Bhubaneswar.	Jodupur Bolimta Bhararipur	— — —	— 1 —	— — —	— 1 —	1 2 —	— — 2	— — —	— — —	— — —	— — —
4.	Regional Research Institute, Calcutta.	Mandalganti Ganti	— —	— —	— —	— —	1 —	1 —	— —	— —	— —	— —
5.	Regional Research Institute, Jaipur.	Gandhinagar (Jaipur)										
6.	Regional Research Centre, Bangalore.	Krishnarajapura- Sarakki Mattada Halli Maranna Halli	— — — —	3 — 1 —	— — — —	2 2 2 —	— — — —	3 — — —	— — — —	2 2 2 —	— — — —	— — — —
7.	Regional Research Centre, Jogindernagar.	Chauntra	—	—	—	1	—	1	—	—	—	—
8.	Regional Research Centre, Vijayawada.	Alavimukkalam Nunna Mangalagiri Krishna Rayapallam. Ganjoor	— — — — —	— — 1 — —	1 1 — — —	— — — — —	1 3 6 — 1	— — — 4 —	— — — — —	— — — — —	— — — — —	— — — — —
9.	Regional Research Centre, Jhansi.	Nayagaun	—	—	—	—	—	—	—	—	—	—

1	2	3	4	5	6	7	8	9	10	11	12	13
10.	Regional Research Centre, Nagpur.	Lonkhari Waddhama										
11.	Ayurvedic Mobil Research Unit, Varanasi.	Kandva Rani-ka-Bazar Bhulli	—	—	—	—	—	—	11	—	—	—
			—	—	—	—	—	—	5	2	—	—
			—	—	1	—	—	—	7	—	—	—
12.	Ayurvedic Mobile Research Unit, Kurukshetra.	Dhurala	—	—	1	—	—	1	—	—	—	—
13.	Ayurvedic Mobile Research Unit, Jamnagar.	Dared Chela Masitia	—	—	—	—	—	—	—	—	—	—
			—	—	—	1	—	—	—	1	—	—
			—	—	—	—	—	1	—	—	—	—
14.	Ayurvedic Mobile Research Unit, Vidisha.	Dholkheri Baghri Jambhar Imalia Pipalia nagar Haronda	—	—	—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—	—	—
			—	—	—	—	—	—	—	—	—	—

**Historiography/Literary Research/Documentation/Publications**

Sl. No.	Location/Project Officer
1.	Indian Institute of History of Medicine, Hyderabad. <i>Reddy D.V.S.</i>
2.	Documentation Wing, Headquarters, New Delhi. <i>Pandey V.N.</i>
3.	TMSSM Library, Thanjavur, <i>Pillai K.</i>
4.	Drug Research Laboratory, Baroda. <i>Sotagopan S.</i>
5.	Journal of Research in Indian Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi. <i>Udupa K.N.</i>



**ANNUAL REPORT  
1973-74**

**YOGA**

## YOGA

Research in Yoga is conducted through Institutes and Units for which grant-in-aid is provided.

The subjects of diabetes, asthma, gastro-intestinal disorders, arthrities and sinusitis have been taken up by Vishwayatan Yogashram, Delhi. A total of 131 cases were studied comprising of all these categories during the period under review. The disease-wise particulars are as below :—

Diabetes—15
Asthma—37
Gastro-intestinal disorders—54
Arthritis—20
Sinusitis—5

In all instances, the response has been encouraging. The methods adopted by Vishwayatan Yogashram for these diseases are as below :—

Disease	Yogic Method
Diabetes	<i>Kunjali, Sankh-Prakshalana, special stomach exercise of Suksma, Vyayama, Ardha-Matsyendrasana. Matsyandrasana, Paschimotta asana. Bhujangasana Ushtrasana, Chakrasana, Badhpadmasana and Tadagri Mudra</i>
Asthma	<i>Vastradhauti, Kunjal, Sutraneiti, Jalaneiti, Kapalbhati, Breathing exercises of Suksma Vyayama. Bhujangasana with breathing gomukhasana and Urdhva-sarvangasana.</i>
Arthritis	<i>Shankhprakshalana, Kunjal, all exercises of suksma Vyayama, Vajrasana, Bhunamsasana and Dhanurasana.</i>
Gastro-intestinal troubles	<i>Kunjali, Sankh Prakshalana, Baghi, stomach exercises of Suksma, Vyayama Hrdogati Utkurdana, Vajrasana, Mandukasana, Supta, Vajrasana, Uttanpa dasana, Ushtrasana, Bhakrasana, Matsyasana, Suptaprvanmuktasana, Bedhpadmasana and Mayurasana.</i>
Sinusitis	<i>Kunjali Sutra-neiti, Jalaneiti, Kapalbhati and Vastradouti.</i>

From the perusal of the data made available, it can be seen that of the 15 patients of diabetes, ten completed full course of treatment as outlined above. These patients of showed distinct improvement. Among the 37 patients of asthma, 32 had full course and promising results were observed in 23 patients. The response position was 77.5% in the patients suffering from gastro-intestinal disorders. Of the 20 patients treated for arthritis, definite improvement was noticed in 11. The cases of sinusitis registered 50% improvement.

In all the instance the clinical investigations are conducted at periodical intervals so that the value of yogic therapy can be assessed. The patients at the end of the treatment showed considerable improvement both from subjective and objective angle. In view of the vital role yoga is occupying in the minds of laymen, scientific workers and research scholars, there is a need and responsibility to make careful investigation choosing appropriate parameters and the work of Vishwayatan yoga Ashram is almost in line with the foregoing thought.

Patanjali Yoga Research Institute, Hyderabad has taken to study of evaluating effect of Yoga therapy in the treatment of diabetes, spondylitis, psoriasis, and ischaemic heart disease, idiopathic epilepsy, hypertension and respiratory allergies. During the period under review, the Institute recorded 750 cases at out-patient and 70 at in-patient level. In cases of cervical spondylitis, *rechaka puraka* was adopted. Special yogic *prakriyas* are prescribed in diabetes. *Bhastrika* and *Kumbhaka* were tried in post coronary disorders. Suitable yogic approached were adopted in hypertension, rheumatoid arthritis and rheumatic conditions.

In the female outpatient, the cases included menorrhagia, metropathia, dysmenorrhoea etc. and they responded to *asanas* like *Sarvangasana* and *Vajrasana* besides breathing exercises.

Patients who had yogic therapy in post coronary disorders showed relief in terms of :

1. Total exercise tolerance as measured by level ground walking distance (fourfold increase),
2. Tolerance for Master's list (fourfold increase)
3. ECG showed shallowing of Q wave but T wave inversion remained uneffected. Biochemical studies were conducted to assess the improvement. Patients who are continuing the yogic exercises appear to find improvement by therapy. The subjects of hypertension showed reduction in diastolic blood pressure levels. It has been found that respiratory allergies, tensions, epilepsy (grandmal) are likely to be benefitted by the yogic therapy.

Delhi Yoga Sabha, Delhi has taken up the problem of treating refraction errors of the eyes and common disorders of Otorhinolaryngology. In most cases, patients were suggested to have 5 grams of almond oil dropped in the nostrils followed by *neti*, *jalakriya*, *Gajakarni*, gazing at flame lit of mustard oil on the following morning. *Asanas* like *Ardhajivantantra*, *Shirshasana* etc. are provided for obtaining necessary relaxation. The Unit also arranged quarterly camps for the benefit of patients.

Yogic-treatment—cum—Research Centre, Jaipur treated 22 cases of bronchial asthma and 22 cases of chronic colitis during the period under review. The studies seem to be encouraging. however, further work is necessary for drawing conclusions.

The Yoga Research Centre functioning at Gauhati has taken up hypertension, cardiac disorders and peptic ulcer. The Institute has evolved a therapeutic regimen in each case. 12 patients of heart disease and 48 patients of peptic ulcer were treated during the period. The results have been encouraging. Effect of Yoga therapy in the treatment of dyspepsia and hyperacidity was taken up for study by Yoga Sadhanasrama, Ahmedabad. The Yogic kriyas in the treatment of hyperacidity include *Jalaneti*, *Pranayama*, *Bandha*, *Mudra* and *Asanas*. In cases of dyspepsia also suitable similar measures were adopted, diet was regulated during the period of therapy. Further work is expected to be necessary to draw conclusions of value.

**ANNUAL REPORT  
1973-74**

**UNANI**

## UNANI

### Institutes

Central Research Institute Hyderabad has taken up to study of the following clinical conditions on the lines suggested in Unani system of Medicine and using Available Modern Techniques :

- |                    |   |            |
|--------------------|---|------------|
| 1. Bars            | : | Leucoderma |
| 2. Nazla-e-muzmin  | : | Sinusitis  |
| 3. Warm-e-kulia    | : | Nephritis  |
| 4. Sailanpur Rahem | : | Leucorrhea |
| 5. Yarqan          | : | Jaundice   |

The patients are selected from the out-patient department of the Institute on the basis of the Unani principles of diagnosis and they are admitted as inpatients. The routine investigations like CBP, ESR, Urine, Stool, Histopathology etc. are done. Further liver function tests like SGPT, SGOT, Serum bilirubin, Thymol Turbidity, total protein, AG ratio are being done. Photographic follow-up is also done regularly.

### BARS :

The progress of the Institute, particularly in the treatment of this condition has been encouraging. The studies on *Bars* is being conducted using *sufoof*, *zoolal* and *zamad* of *Babchi*, *Gandhac amlasar*, *Geru* and *Gulnar*. The treatment of *Bars* is divided into the following five groups:

1. *Munzij* and *Mushil* (specially of humor phelgum).
2. *Zamad* (Externally)
3. *Zulal* Orally
4. *Sufoof* Orally
5. *Suffof* + *Zulal* + *Zamad*

During the period 1.4. 1973 to 31.3.1974, 705 cases of Leucoderma have been studied. (Out of 640 out-patients and 65 indoor cases of Leucoderma males are 287, females are 353. Among the 65 in-patients of Leucoderma males are 10 and females are 55).

The sex-wise incidence in the cases is as below ;

	Male	Female
OP	287	353
IP	10	55

## II. NAZLA-E-MUZMIN :

149 patients were treated at O.P. and I.P. level.

The medicines used in the disease :

1. *Behidana* : Decoction  
*Unnab* :  
*Sipistan* :
2. *Gule Banafsha* :  
*Gauzaban* :  
*Aslus-soos* : Decoction  
*Ustukhuddos* :  
*Maweez munvaqa* :

## III. YERQAN (JAUNDICE)

Total number of patients in the period under study was 27 and they were treated as in-patients and outpatients levels.

The medicines tried are the following :

1. *Chane-kee-Bhoosi* :  
*Gule Nilofar* : Zoolal  
*Gule Surkh* :
2. *Saffoof-e-Revand Chini* : Powder

## IV. WARME-KULIYA :

The total patients studied under this condition is 55. The medicines under trial are as solow :-

1. *Shora Qalmi* :  
*Naushader* : Mahlool  
*Phitakaree* :  
*Suhaga Sufaid* :

2. *Revand Chini* :  
*Zeera Sufaid* : Powder  
*Kaknaj* :

#### V. SAILANURRAHAM (Leucorrhoea)

The total patients treated is 123 in both the outpatients and in-patients section. The medicines taken up for study are :—

1. *Kanghis powder*
2. *Laung Dasiti*
3. *Gule Dhawa.*

The results of study have shown interesting leads.

#### 1. Pharmacy section :

The Pharmacy section purchased 115 raw drugs and prepared 50 compound medicines (as *Majoon, Jawarish, Safoof, Hab* (tablets) *Zoolal* etc.) and supplied both to the in-door and out-door patients from 1st April, 1973 to 31st March, 1974.

#### 2. Pathology Section :

The following is the number of investigation done during the year under reports :—

- |                                   |        |
|-----------------------------------|--------|
| 1. Complete blood pictures        | : 1033 |
| 2. Erythrocyte Sedimentation rate | : 988  |
| 3. Urine analysis                 | : 901  |
| 4. Stool examinations             | : 27   |
| 5. Bacteriological investigations | : 20   |

It is generally observed that the erythrocyte sedimentation rate is generally high in cases of Leucoderma. This can be considered as one of the useful guiding factors regarding progress.

#### 3. Biochemistry Department :

The following investigations were carried out :—

S'No.	Investigations	No. of tests/ investigations
1.	Blood urea	127
2.	Blood glucose	30
3.	Serum Bilirubin	132
4.	Van den begh	32
5.	Thymol Turbidity	30
6.	Serum Protein	35
7.	Albumin	35
8.	Globulin	35
6.	S.G.O.T.	128
10.	S.G.P.T.	128
11.	Fractionation of Serum protein	35



Special tests that are carried out as follows :—

1. Separation of plasma protein by electrophoresis.
2. Separation of amino acids in serum and in urine.
3. Estimation of N.P.N. by micro Kjeldahl.

#### 4. Pharmacology Department :

This Department has undertaken research work on the drugs that are being used in the treatment of Leucoderma. Besides Pharmacological screening and toxicological studies, an attempt is also being made to study the Pharmacodynamics of these drugs in patients as well as in animals.

At present, three projects are under study with the co-operation and co-ordination of clinicians, Departments of Pharmacology, Pathology and Biochemistry. These Projects are :—

1. A study of the amino acid pattern of blood and urine in the subjects of Leucoderma and controls.
2. A study of blood grouping in the patients of Leucoderma.
3. Effect of *Bobchi* (*Psoralea corylifolia*) on bleeding clotting and prothrombin time in Leucoderma patients.

In the study of *Bars* depigmentation of patches of hands, palms soles and lips respond slowly to the treatment, but in the muscular area, the patches respond comparatively early. Many cases of *Bars* show a hereditary tendency.

The study of the effect of *Babchi* on gastric function is being carried out in all those patients who are complaining of burning sensation in stomach to establish the fact of hyperacidity.

All *Bars* cases were treated by *Zoolal*, *Zeemad* and *Sufoof*.

### Survey of Medicinal Plants

Three forest divisions i.e. Rajouri and Doda and Baramullha division were taken up for intensive Survey, by survey of Medicinal Plants Unit Jammu.

The Survey tours were conducted to explore the medico-botanical wealth of these areas. 219 species used in Unani medicine have been identified so far. Identification is done by consulting Unani Literature, local Hakims and with the assistance of Pharmacognosy unit of C.D.R.S. functioning at Regional Research Laboratory, Jammu. The local inhabitants also assisted in the identification of certain drugs.

The following are a few important drugs that were supplied to various research units of the Council.

- |                   |                             |
|-------------------|-----------------------------|
| 1. <i>Zafran</i>  | — <i>Crocus sativus</i>     |
| 2. <i>Luffah</i>  | — <i>Atropa belladonna</i>  |
| 3. <i>Nilofar</i> | — <i>Nymphaea alba</i>      |
| 4. <i>Shahtra</i> | — <i>Fumaria parviflora</i> |

About 143 medicinal plants are introduced in the garden for experimental cultivation particularly in view of their wide-range, therapeutic application in Unani system of medicine.

The following are a few important plants which were introduced in garden.

- |                      |                                |
|----------------------|--------------------------------|
| 1. <i>Ghungchi</i>   | — <i>Abrus precatorious</i>    |
| 2. <i>Dar-e-hald</i> | — <i>Berberis lycium</i>       |
| 3. <i>Zarishk</i>    | — <i>Berberis vulgaris</i>     |
| 4. <i>Juntiana</i>   | — <i>Bergenia ligulata</i>     |
| 5. <i>Atrilal</i>    | — <i>Ammi majus</i>            |
| 6. <i>Indrayan</i>   | — <i>Citrallus colocynthes</i> |
| 7. <i>Aslusos</i>    | — <i>Glycyrrhiza glabra</i>    |
| 8. <i>Zafran</i>     | — <i>Crocus sativus</i>        |

9. <i>Luffah</i>	— <i>Atropa belladonna</i>
10. <i>Asgandh</i>	— <i>Withaina somnifera</i>
11. <i>Banafsha</i>	— <i>Viola odorata</i>
12. <i>Khash</i>	— <i>Vetivera zizanooides</i>
13. <i>Nilotar</i>	— <i>Nymphaea alba</i>
14. <i>Shahtra</i>	— <i>Fumaria parviflora</i>
15. <i>Sarpagandha</i>	— <i>Rauwalfia serpentina</i>

#### Drug Standardisation Research

To establish standards for single drugs used in Unani Systems of Medicine a project is functioning at Hamdard Dawakhana, New Delhi. The drugs is works on evolving standards of drugs used in Unani Medicines worked on reputed drugs *Afsanteen*, and made comparative study of the drug with Artemesias. The literature on drug *Kasooos* has been collected and Pharmacognostic worked completed.

Identification shows on market sample of *Badaward* (*Centarea phylloceph*) and *Brahmadandi* (*Amberboa racemcra*) was conducted. The literature on *Izkher*, *Zoofa*, *Gauzaban*, and *Baderanboya* has been documented. The studies have laid emphasis, simultaneously on tenets of Unani System.

#### Clinical Research

The Clinical Unit functioning at A & U Tibbia College, New Delhi has taken up the problem of evaluating therapeutic effects of certain drugs in selected clinical conditions.

##### *Kasrat-e-Tams* (Menorrhagia) :

Patients of *Kasrat-e-Tams* have been treated with *Tukhm-e-Bartang* (*Plantago major*) orally in a dose of 3 grams twice a day with water or with suitable vehicle. In case of excessive bleeding, the veginal douche was also given with the docoction of these seeds.

It was observed that the drug has capacity to check bleeding within a short period, it is described as possessing astringent taste, styptic effect, tonic action and anti-inflammatory potentiality. In the studies conducted, no side effects were observed.

##### *Zaheer Muzmin and Zusanteria-e-Mavi* (Chronic dysentery)

*Posth Bekh-e-Madar* (*Calotropis gigantea*) has been administered in *Zaheer-e-Muzmin*. The powder of dried bark of the root (*Bekh*) of *Calotrpis*

*gigantea* is administered in dose of 250 mg. in a capsule twice a day after tea with curd or butter. *Madar* gives strength to the muscular layers of stomach and intestines and also exhibits soothing effect. Side effects like as headache and burning in micturation was observed in some cases.

The results in both the clinical conditions are encouraging. It is necessary to substantiate the data through available techniques when laboratory facilities are fully available.

#### Clinical Screening Unit (CDRS)

The Clinical Screening Unit at Aligarh Muslim University, Aligarh has been studying effect of commonly used drugs from pharmacognostic, chemical pharmacological and clinical angle. Trials with *usthukaddoos* (*Lavandula prochas*) from angle of these discipline is in progress. Acute Coryza, acute bronchitis and chronic sinusitis are under study. The studies conducted so far seem to yield fruitful results.

The drug *ustukhuddoos* (*Lavandula prochas*) as tablets of 0.75 gram (each made from micropulverized powder) were given in a dose of 6 gms. daily orally in 4 divided doses after meals for a period of 2-3 weeks.

The only side effect noted was constipation and dryness of mouth.

The work is still in progress. However, the preliminary work on drug trial appears to show interesting leads.

#### Clinical Screening Unit (Allopathy) CDRS

The Clinical Screening Unit at Aligarh Muslim University, Aligarh has also taken up, studies connected with evaluation of effect of *Ustukhaddoos*. The parameters adopted to assess the effects of the drugs seem to indicate its usefulness in cases of cases of Bronchitis, sinusitis etc.

The Cilinical Research Unit at Madras has taken up the project relating to studies on *Vajaul mufasil* (Rheumatoid-Arthritis) and on *Zeekumnafs* (Asthma) and the effect of Unani drugs.

The single drugs chosen for clinical trial are as under :—

- |                     |   |
|---------------------|---|
| 1. <i>Shambhalu</i> | — <i>Vitex negundo</i> (Plants and Barks) |
| 2. <i>Gajga</i>     | — <i>Caesalpina bonducella</i>            |
| 3. <i>Karanj</i>    | — <i>Pongamia pinnata</i> .               |

Drugs are administered as below :—

1. For the patients suffering from *Vajaul mufasil* :—

- (i) *Majoon-e-barg shambhalu* 10 gms. 3 times or 4 times a day as drug X.
- (ii) *Majoon-e-paste-shambhalu* 10 gms. 3 times or 4 times a day as drug Y.

2. For the patients of *Zeekum-nafas*-, the patients were classified in 3 groups according to the blood report as Eosinophilic. A group and B Group. *Majoon-e-megz Gaiga* is considered.

Spasmodic idiopathy B Group. Treated with *Majoon-e-maghze karanj*.

Chronic cases, above the age of 40 years-C Group. associated with chronic bronchitis-cough (*sual-e muzmin*) (*Alsi* 1 part, *Mailhi* 2 parts, *see* 3 parts, *chilbeej* 6 parts (fried and powdered) and honey 24 parts).

The following tables provide information relation to therapeutic response in case of *Vajaul Mafasil* and *Zeekhun Nafas* for the period between 23.7.73 to 31.3.1974.

(a) *Vajaul Mafasil* :

Sex	Good response drugs		Partial relief drugs		No. relief		Discharged against Med. Adv.	Total
	X	Y	X	Y	X	Y		
Male	3	4	1	1	1	1	9	20
Female	12	8	2	2	1	1	4	30
	15	12	3	3	2	2	13	50

(b).

Sex	Drug Group	Good response	Partial relief	No. relief	Discharged against Med. Adv.	Total
Male	A	13	3	1	4	21
&	B	12	3	1	5	21
Female	C	7	4	0	6	17
		32	10	2	16	59

#### Literary Research

Literary Reseach Unit functioning at the A.K. Tibbiya College, Aligarh Muslim University, Aligarh has been engaged in the project of collecting, editing, translating into Urdu language rare Tibbi manuscripts of Arabic and Persian language and

2. Publication of Urdu translations of important Tibbi books of Arabic and Persian to serve the needs of students and scholars of U.S.M. and reference works.

The following medico-literary work was brought out by the Unit :—

1. *AI-QARSHIS (IBN-UN-NAFIS)* commentary on Avicenna's "Qanoon"

- (i) From chopter 1 on the diseases of the heart and their treatment has been transcribed and collated with the Bhusawal manuscripts.
- (ii) From Chapter 1 on the diseases of the head and their treatment described in about 100 pages have been transcribed from the college literary manuscript and collated with the Bhusawal manuscript.

2. *Al-Havi*

- (i) Vol. I has been completely revised and translated.
- (ii) From Vol. II, 70 pages have been translated.
- (iii) Vol. III, 150 pages have been translated.

(iv) Vol. IV was translated.

(v) To pages from Vol. V. was translated.

(vi) Material for the life and work of the author (Ar-Razi) has been collected. An out-line of the biography of Ar-Razi, to be expanded with new material is being prepared.

3. *Kitab-ut-taiseer*

Material on the life of the author and the importance of his work has collected.

4. The Unit has compiled information on the autobiography of the great physician of Arab-Medicine Sheikh Bu Ali Ibne Sine from the text published by the Iranian Scholar Aaqai Said Nafeesi, the Unit also collected variations of the passages on the autobiography from the works of the other historians and bigraphers.

5. Translation of the medical treatise of Avicenna titled "Risale Judia" is completed.

The Unit functioning at Takmil-Ut-Tibb Institution, Lucknow, did editing and translating of rare Unani Medical Books from Arabic to Urdu and English versions of "Kitabul Abdal", a very rare book, written by Abu-Baker Mohammad Bin Zakaria Razi (Rhazes) of 10th century A.D. was prepared.

2. First volume of "Kitabul Umda fil Jarahat" by Ibnul Quf Masihi of 7th century A.D. was taken up for translation. The pages 220-to-274 have been so far translated.

3. Translation (from Arabic to Urdu pages from 65 to 173 of "Kitabul Kullipat" by Ibne Rushed of 12th century A.D. who was also known as Aueroes was done.

4. Kitabul Jame-el-Mufrodat by Ibne-Bekar an Arab Botanist of 7th century A.D. was taken for translation, and 30 pages were translated.

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**SIDDHA**



## SIDDHA

### Institutes

The Central Research Institute, Madras, designed studies on two clinical conditions i.e. *Vali Gunmam* (Peptic Ulcer) and *Putru noi* (Cancer). The effect of *Thambira Chendooram* in the treatment of *Vali Gunmam* and role of *Rasagandhi Mezhugu*, *Chandarasa parpam*, *Vanga parpam* in cases of *Putru noi* has been taken up for study.

During the period under review, 60 cases of *Vali Gunmam* were taken up and the drug is administered in capsules adopting a double blind technique. The diagnosis was established by Barium meal X-Ray study F.T.M. Studies and investigations for Occult blood in the stools. Of the 60 patients, follow-up studies are completed with regard to 13 cases and the remaining cases are being followed up. The institute commenced a pilot study on *Putrunoi* and cases chosen for study are Cancer Cervix, Cancer Cheek, Cancer Breast etc. It is considered necessary to extend the studies for longer periods on larger population.

The Institute is maintaining a well attended out-patient department and the cases are selected from among those who attend. The number of cases of *Vali gunmam* at in-patient level is 61 and in *Putrunoi* is 7.

Medicinal requirements of the Unit at A.A. Govt. Hospital for Indian Systems of Medicine, Madras and that of the Institute are attended to by the pharmacy section of the Institute,

The Pharmacy Department has also extended its cooperation to the Captain Srinivasa Murthy Research Institute, Madras-20 for preparing certain *Basmas* and *Chendoorams* required for their chemical analysis under preliminary Standardisation Research Units.

The other departments functioning at Central Research Institute are below :

1. Pharmacology Department
2. Bio-Chemistry Department

The Pharmacology Department has taken up the Pharmacological and Toxicological investigations on *Thambira Chendooram* an anti-ulcer drugs in various experimental models using Rats, mice, G. Pigs and Dogs. Besides this Department has taken up problems of evaluating diuretic

effect of *Vediuppu Churnam* a mineral substance and *Mimosa pudica* a plant product, in addition to designing experimental models to study hypoglycaemic effect of drug *Kadalazhijil*. Other studies taken up are on antifertility and antifungal potentialities of drugs reported to possess them in Siddha system of medicine.

The Bio-Chemistry Department is engaged in Bio-chemical and Pathological investigations relevant to this Institute's chosen clinical conditions as well as that of the experimental studies conducted by the Pharmacology Department, Besides these, this Section is catering to the requirements of Clinical Research Enquiry of Ayurveda at Arignar Government Hospital of Indigenus Medicine, in estimating the blood sugar, urea and cholesterol for the patients afflicted with hemiplegia, sciatica, etc. before and after the course of treatment."

#### Clinical Research

Clinical studies and therapeutic effects of selected drugs in cases of *Sandhivatha Soolai* and *Klanjapadai* has been taken up, by the Unit or A.A. Govt. Hospital Madras. The drugs that are chosen are those that are having mercury as an ingredient in its composition in addition to drugs of Vegetable and animal origin. The diagnosis is made on clinical grounds.

Studies on *Kalanjapadai* are taken up at out-patient level. *Sandhivatha Soolai* is being studied at in-patient level. The investigations in both conditions are conducted, to the extent possible.

#### Survey of Medicinal Plants

Survey of Medicinal Plants Unit functioning at G.C.I. M., Tirunelveli Tamil Nadu conducted thirteen (13) survey tours and the following areas/divisions-ranges were visited during the year under review.

Kanyakumari — Tiruneeveli — Madurai — Salem. The Unit is maintaining a herbarium with 345 species which are identified in addition to 140 sheets which are yet to be identified. The herb garden of the unit has over two hundred plants. The museum has about 90 plant specimens. The unit supplied drugs required by some of the research projects. During survey tours the unit collected folklore claims also.

#### Drug Standardisation Research

Chemical studies on commonly used drugs like *Nabi*, *Chinni*, *Sivkarandai*, *Uppilankadi* have been conducted.

### **Literary Research**

In the Literary Research Unit functioning T.M.S.S.M. Library, Thanjavur 23 (Twenty three) Cudjan leaves were procured during the year under reporting. A descriptive catalogue containing 55 (fifty five) cudjan leaves was prepared. These deal with fundamental principles, clinical medicine and useful formulary of Siddha medicine. Nigandu and Karukadai printing were completed. Steps to print Bogar Nigandu in addition to Nigandu of Theran Yamaga Venba have been taken.

Indian Institute of History of Medicine has also been engaged in the research in history and literature of siddha medicine and its concepts.

Project/Programme

Name/Type of Research Organisation/Location/ Project Officer	Programme
1. Central Research Institute Madras <i>Thyagarajan R.</i>	Studies on 1. <i>Vali gunmam</i> (Peptic ulcer) 2. <i>Putru Noi</i> (Cancer) 3. <i>Kamalai</i> (Jaundice) 4. <i>Grahani</i> (Chronic Gastroenterities)
2. Survey of Medicinal Plants Unit Tirunelveli. <i>Kumaraswamy R.</i>	1. Survey collection, cultivation and supply of drugs.
3. Literary Research Unit, Tirunelveli <i>Gurusiromani P.</i>	1. To collect, edit and publish the rare works in Siddha system of medicine.
4. Clinical Research Unit Madras <i>Balasubramaniam G.</i>	Studies on 1. <i>Sandhivatha Soolai</i> (Rheumatoid Arthrities) 2. <i>Kalanja Padai</i> (Psoriasis)
5. Drug Standardisation Research Unit (C.S.M.R.I.) Adyar, Madras. <i>Purushotaman K.K.</i>	Laying down standards for single drugs as well as various medicinal preparations.
6. Literary Research Unit (Siddha Section) T.M.S.S.M. Library, Tanjavoor. <i>Vadivelan</i>	To collect, edit and publish the rare works in Siddha system of medicine.

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**HOMOEOPATHY**

## HOMOEOPATHY

### Institutes

The Central Research Institute, Calcutta has undestatives there indigenous drugs *Cynodon dactylon*, *Atista indica* and *Holarrhena anti-dysenterica* are being investigated with a view to determinine their therapeutic potentiality in Amoebiasis and as well to define their remedy Syndroms (Drug picture).

Out of 229 cases so far investigated 116 patients who showed clinical evidence of active amoebiasis were studied this year.

82 patients of these 116 were prescribed *Cynodon dactylon* and 33 were prescribed placebo (controls). One was prescribed *Atista indica*. Q and 3x were the choice of trial.

Out of 82 patients on *Cynodon dactylon* 64 patients improved 17 remained stationary (without any appreciable change in their symptom complex) and 1 patient got worse. Out of 33 patients on placebo (control) only 6 improved. 17 remained stationary and 10 became worse. Patient kept on *Atista indica* showed moderate improvement.

Improvement index of patients kept on *Cynodon dactylon* was 78.05% and that of controls was 18.18%. During year 72-73 the *Cynodon dactylon* showed an improvement index of 78.8% and controls showed 20%. These figures are quite significant in at least establishing the therapeutic potentiality of *Cynodon dactylon* as an anti-amoebic remedy. During the stage of screening of patients with abdominal complaints for ameobias, a large number of patients showed infection of giardiatsis intestinalis.

Since the symptom complex is the basis of prescription in Homoeopathy, the same three drugs were tried by suitably designing the trial.

*Cynodon dactylon* was again found useful in 25 out of 26 cases to improve the condition in 9-10 week time.

*Atista indica* improved 5 out of 6 in 6-10 weeks. *Holerrhena anti-dysenterica* improved 3 out cases which took 9-16 weeks. This was treated as insignificant.

On the basis of symptom study made — *Cynodon dactylon* finds a place alongwith more commonly known drugs as *Aloes*, *China* and *Nux vomica*. *Atista indica* shows a close resemblance to *Mercurius*. The present trial did not show much of the qualities of *Holerrhena antidysenterica*.

To finally establish the potentiality of these drugs the trials are in progress.

The Central Drug Proving Cell at the Headquarters have sent coded drugs for proving with the double blind technique. Since the results are inconclusive at present they will be reported when completed.

The three indigenous drugs taken up for clinical trials on ameobiasis are being prepared in the institution from the authentic raw-materials supplied by the Survey of Medicinal Plants Unit of the Council. They are being standardised in terms of pharmacopeial standards. They are also being compared with the mother tincture available in the market. The results have shown that the same are comparable.

In order to enhance the utility of the existing literature to the general practitioner, clinical data indexing of Clarke's Dictionary of Materia Medica has been started and the two systems are completed, viz Respiratory and Alimentary Systems.

Clinical Research is continued at Regional Research Institute at New Delhi with a view to study the relative efficacy and period of treatment involved in certain common diseases such as Dermatitis, Tonsillitis, Sinusitis, Allergic rhinitis, infective hepatitis, Eruptive fevers etc. In spite of the handicaps experienced by the institution, in as much as not having sufficient space, non-availability of accommodation for the in-patients and irregular and infrequent services of a qualified pathologist the institution has been able to study above conditions with some success. The preliminary work has indicated that the Homoeopathic therapeutic agents are quite useful in reducing the period of treatment of acute manifestation of above diseases from 3 to 6 days : acute phase of chronic manifestation is controlled within the period of 3-21 days.

During the course of investigation, it was noticed that *Caladium sanguinum* was found effective in case of Bronchiol Asthma alternating or associating with allergic skin eruption.

*Cina* was also found effective in some cases where asthma was present in children with worms (Pathological finding) where indicated remedies did not show much relief.

*Arsenicab* was invariably found controlling Allergic rhinitis, in 48 hours without relapse for considerable time. This interesting aspect of

this study is that no side effects worth the name were noticed during the period of observation.

With the principle aim of making the Kent's reparatory a comprehensive and useful one to a general practitioner "A Review and Revision of Kent's reparatory" was being undertaken and is being continued during this year also.

The Chapter on 'Stomach' is undertaken. To start with, comparison is done with the Boerick's *Materia Medica*.

During the course of study, many omissions in Kent's Reparatory were noticed. A list of such omission has been prepared and sent to eminent research Scholars and practitioners in India as well as abroad for their consideration. Kent was gaint of his times and it is presumed that these omissions normally could not have been comitted without any definite reasons. The spirit behind the same is to be understood and therefore, views are being gathered. It is felt that any addition to Kert's reparatory should not change its basic idea.

#### Clinical Research

The grant in aid unit fencting at A.Hemoeo Midical college Kottayam, took more emphasis on the cases of Schizophrenia and Anxiety neurosis.

The assessment is done in 75 cases; out of this 35 are cases of Schizophrenia; the remaining belong to other mental conditions.

Out of the 35 patients, 18 have become Symptom free and the rest have shown marked improvement. The cases have been followed up by correspondence and the patient's reply are taken as guidance for assessment. Qualified Psychiatrists who attend to these cases make regular examination and does the ass essment.

Out of 18 symptom free cases, 13 cases were treated on the basis of mental symptoms exhibited by the patient and 5 were treated with totality of symptom.

*Sulphur*, *Nux-vomica*, *Calcarea phos*, *Ignatia*, *Lachesis* have been found useful in 1000 and 2000 potencies in both acute and chronic phases of Schizophrenia.

*Stramonium* was useful when *Lachesis* showed no much response.

Further work on the basis of suggestions of the working group is in progress.



Two clinical topics are being investigated viz Acute Rheumatic fever, and Bronchial asthma where the efficacy of Homoeopathic remedies in bringing about quick recovery and effect of such treatment in further recurrence is being studied, at Gururaju Homeo Medical college, Gudivada.

It is reported that 36 cases of Acute Rheumatic fever has been studied complications during the course of observation and trial and all the cases showed satisfactory improvement. However, it was noticed that though the cases showed subjective and clinical improvement, a few cases showed elevated erythrocyte sedimentation rate.

These cases are still under observation, to study the possibility of any recurrences.

17 cases out of 21 cases studied for Bronchial Asthma, were in acute phase of the chronic malady. The treatment has shown that attacks can be controlled within few hours to forty hours. Remission thereafter continued for 1 week to 24 weeks.

In 15 cases, there was relative fall in eosinophilic count but 4 cases showed rise in spite of subjective relief.

With the initial success obtained with *Caulophyllum thalictroides* in demonstrating its effect in potency of 200, and 1000 histochemically on the proestrous, oestrous and post oestrous rats, a study on the effects of *Caulophyllum thalictroides* on the major biochemical changes of the ovary in proestrous, oestrous and diestrous group and to the estimation of total protein of the ovary of rat in proestrous, oestrous and diestrous group was undertaken by an enquiry at Banars Hindu university, Varanasi.

It was observed from the experiment that the drug reduced the nitrogen content of the ovary—higher the potency higher is the rate of reduction. The total protein content, however, did not show any mentioned change one day after administration of the drug however, there is evidence of change after 10 days of administration.

Number of amino acids have been detected in all the three groups. Standard curve for the quantitative estimation of amino acids by paper Chromato-graphy has already been prepared,

In addition to this, as directed by Scientific Advisory Board (Homoeopathy), a coded drug was sent for authenticating the claim made by the applicant towards its antifertility property.

The suitably designed experiment showed that the drug brings about the abortion of the embryos in 60% rats between 10th day and 23rd day. The mortality of litters born was significantly high being about 75%.

One of the workers completed his thesis for Ph. D dissertation. "Reproductive Physiology with particular reference to ovulation retardation using the Homoeopathic drug *Caulophyllum thalictroides* in rats and the associated histological changes in the ovaries the Uteri, the thyroids, the pituitaries was the subject.

Two papers, "Studies on the effect of *Caulophyllum* on implantation in rats" and Observation on effects of high and lowpotencies of *Caulophyllum* on the ovaries and its consequential changes in the uteri and thyroids in rats" were presented at the sixth conference of the Indian Society for the Study of Reproduction and Endocrinology and the abstracts have been accepted for publication in Journal of Reproduction and Fertility published from Britain. Similar paper has been published in the Council's Journal.

#### Drug Proving

The following are the Drug proving Research Units of the council.

1. D.N. De. Homoeopathic Medical College, Calcutta
2. Midnapore Homoeopathic Medical College, Midnapore
3. National Homoeopathic Medical College, Lucknow
4. Homoeopathic Medical College, Belgaum
5. K.N.H. Medical College, Bhagalpur

Five units situated in different Homoeopathic Medical Colleges are engaged in conducting Drug Proving.

Lucknow and Bhagalpur units have completed the proving on one single drug. The Proving was conducted by double blind technique. Lucknow unit conducted proving on *Cassia sophora* and Bhagalpur Unit conducted repeat proving for confirmation on *Abroma augusta*

*Cassia Sophora* was selected since it had clinically shown its beneficial utility in Bronchial Asthma,. However the provings have given sumptoms have given sumptoms in throat, abdomen and Respiratory systems. One prover has given typical breathlessness with pain in chest. The Chill and continued fever has been a constant feature. The drug appears to be slow acting and the symptoms exhibited were produced in later part of the proving and that in low potencies-Q and 30th.

The proving of *Abroma augusta* was repeated to see whether there any alterations in the sumptom complex obtained from that of the previous provings. It is significant to note that the sphere of action has remained almost the same and symptoms pertaining to mind, eyes, abdomen respiratory system have not materially changed.

The remaining three drug proving units are still conducting the proving and their final collated reports for assessment and finalisation are awaited.

The provings completed in mid 1973 were finalised and two monographs on *Abroma augusta* and *Klai muraticum* are ready for publication.

#### Drug Standardisation

Since no similar work has been done in the matter of laying down standard in respect of Homoeopathic drugs in the past, it was felt necessary to fix definite parameters. The working group on Drug Standardisation suggested that various parameters to be adopted in the beginning.

However, in order to maintain the uniformity in identifying the correct specimen some definite yardstick was decided in case of the drug contained in the whole plant, root drug, root-bark drug, stem drug, stem bark drug, leaff drug, flowers drug, fruit drug and powdered drug.

The actual process to prepare the various drugs have been defined and the methods to determine these physio-chemical standards is also decided upon.

Accordingly preliminary date on *Tribulus terrestris*, *Berberis aristata*, *Berberis vulgaris*, *Viscum album*, *Holarrhena antidysentrica*, *Cannabis sativa*, *Calotropis gig.*, *Calendula officinalis*, *Centella asiatica*, *Abroma augusta*, *Tylophora indica*, *Rheum emodi*, *Solanum nigrum*, *Artemesia vulgaris* was collected. The samples were supplied by the Survey of Medicinal Plants Units of the Council. Information available with pharmacology Units of Ayurvedic Section was also utilised.

In order to determinine the shelf life of the drug i.e. to see whether they undergo any change in their chemical composition on storage is being

studied. The clinical changes may alter the therapeutic proportions of the drug.

*Aconite napellus*, *Atropa belladana*, *Berberis vulgaris* and *Holarrhena antidysenterica* have shown changes in terms of colour index, Ash value total solids, assay indicating there within one year from the date of manufacture the drug need be used for obtaining anticipated therapeutic results. Further work in this direction is in progress.

Three papers on *Tribulus terrestris*, *Berberis vulgaris* and *Abroma augusta* are pending publication.

Monograph on Aconite, Belladonna are in the final stages of preparation,

Project/Programme

Location  
Name of the Project Officer

- |  |   |
|--|---|
| <p>1. Central Research Institute,<br/>Calcutta.<br/><i>Gupta D.N.</i></p>      | <p>1. Continuation of Clinical study of indigenous drugs <i>Cynodon dactylon</i>, <i>Atista indica</i> and <i>Holarrhena antidysenterica</i> in the pathology of amoebiasis.</p> <p>2. Standardisation of drugs taken for above trial and check the standards of drugs drawn by other standardisation units.</p> <p>3. Drug Proving</p>   |
| <p>2. Regional Research Institute,<br/>New Delhi<br/><i>Pramanick M.S.</i></p> | <p>1. Continuation of clinical study to determine relative efficacy and period of treatment involved as compared with the existing known treatments in cases of Tonsillitis, Sunisitis, Allergic rhinitis, Infantile asthma, Allergic dermatitis, Eruptive fevers and infective hepatitis.</p> <p>2. Continuation of review and revision of Kent's repartory.</p> <p>3. Drug Proving.</p> |
| <p>3. Clinical Research Unit<br/>Kottayam<br/><i>Pandyan R.S.</i></p>          | <p>1. Mental Research Scheme Schizophrenia Anxiety neurosis</p>   |
| <p>4. Clinical Research Unit<br/>Gudivada<br/><i>Rao M.K.</i></p>              | <p>Continuation of clinical studies on Rheumatic diseases.</p>  |
| <p>5. Clinical Research Enquiry,<br/>Varanasi<br/><i>Chandrasekhar</i></p>     | <p>1. Continuation of clinical pharmacological screening of <i>Caulophyllum thalictroides</i> as an implantation interrupter.</p> <p>2. Screening coded drug H-1 on the above line.</p>   |

- |     |  |  |
|-----|--|--|
| 6.  | Drug Proving Unit, Bhagalpur<br>Capore S.N.S.            | Repeat Proving of <i>Abroma augusta</i>  |
| 7.  | Drug Proving Unit, Calcutta<br>Nayak S.N.                | Continuation of Proving of coded dtrg.   |
| 8.  | Drug Proving Unit, Midnapore<br>Sinha D.N.               | —do—   |
| 9.  | Drug Proving Unit, Belgaum<br>Adi S.S.                   | —do—   |
| 10. | Drug Proving Unit, Lucknow<br>Sharma S.C/<br>Saxena A.C. | Proving of <i>Cassia sophora</i>   |
| 11. | Standardisation Unit, New Delhi<br>Arora R.B.            | Preliminary Standards of :<br><i>Berberis vul</i> , <i>Viscum alb</i> , <i>Tylophora indica</i> , <i>Calatropis gig</i> , <i>Calendula off</i> , <i>Contella asiatica</i> , <i>Abroma augusta</i> , <i>Solanum nig</i> , <i>Rheum emodi</i> , <i>Artemesia vul</i> . |
| 12. | Standardisation Unit, Patna<br>Verma A.L.                | 1. Preliminary standards of :<br><i>Tribulus terrestris</i> , <i>Viscum albam</i> , <i>Berberis aristata</i> , <i>Holerrhena anti-dysenterica</i> , <i>Abroma augusta</i> , <i>Atropa belladonna</i> .<br><br>2. Short provings of above standardised drugs.         |

**ANNUAL REPORT  
1973-74**

**FAMILY PLANNING**

## Family Planning

Clinical and Chemico-pharmacological screening of drugs and recipes considered to have contraceptive potentiality have been taken up on an extensive scale. The clinical trial has been taken up on certain selected recipes and a couple of coded drugs.

In case of drugs showing promising results, the observation and collection of data has to run for over 10 years though it is possible to eliminate drugs not showing any encouraging leads from the scene of trial in about five years time at clinical level. At experimental level, the studies may go on at a rapid pace and a number of drugs may be screened for the antifertility potentiality. The results of study at this level helps in translating this experience for application at clinical level.

Trial with Quercetin, Hentrica contanol and Cynidin isolated from *Japakusum* showed varying antifertility potentialities. The total extract after removal of these compounds has been saved and designated as mother liquor. There has been 60% inhibition of pregnancy. The clinical trial has also been taken up with this total extract.

Studies revealed that Carrort seeds and *Karavir mula* have antifertility effect. The study field has to be expanded to confirm this observation. *Abrus precatorius*, *Embelia ribes*, *Aloes*, *Butea frondosa*, *Plumbago zeylanica* and *Musa sapientum* are screened.

Two coded drugs (AYUSH 7 and 47) were taken up for evaluating contraceptive potentiality. Of these, AYUSH 7 showed low margin of safety and antimplantation activity is not very significant. In case of AYUSH 47, results ranged from 76-98% and in view of varying data further trials are necessary.

The clinical studies suffered handicaps like patients not being regular in taking the drug and not reporting periodically for check up. The follow-up studies, and that too for a fairly long period in a large population is important to pronounce any opinion. The studies with *Jidengdi yoga* *Polisisadi Yoga* and *Pippalyadi Yoga* are in progress.

White *Ghungchi* (*Abrus precatorius*) was administered in the does of 1 ratti (filled in capsule) in powdered form for 3 consecutive days and for 3 consecutive menstrual cycles from 3rd day of menses. Normal cases and for subjects delivered also the pattern after 3rd of delivery. 276 cases were administered the drug. Patients are advised to take the drugs after breakfast. The side effects of the drugs that were observed in a few cases



are in the form of excessive bleeding, nausea, vomiting, giddiness and diarrhoea.

The Side effects were treated using *Turvanjabeen Kishneez-e-sabz* etc. Out of 276 cases, 23 discontinued due to one or other domestic problems. This group includes these discontinued due to side effects. At the end of the year 15 ladies conceived out of 243 ladies who were given the drug. 228 ladies are still continuing the drug and the effects of the drug trial are being studied.

A crude drug *Chawal ki Bhaji* is also assessed for its contraceptive action. 20 cases were given this drug and the trial is in progress.

Efforts are made to the extent possible to advocate the individuals who come for Family Planning recipe on the need for Family Planning as well as the necessity for taking the drug regularly and reporting periodically.

Family Planning Programme

Sl. No.	Location/Project	Officer	Recipet
<b>Clinical</b>			
1.	Central Research Institute, Patiala.	Sharma .K	<i>Thaleesadi yoga</i>
2.	Regional Research Institute, Jaipur.	Bhatt G.K.	-do-
3.	Regional Research Institnte, Calcutta.	Mukherjee G.D.	<i>Vidangadi yoga</i>
4.	Ayurvedic Research Institute, Poojapura, Trivandrum.	Shreedharan N.	-do-
5.	Government Ayurvedic College, Lucknow.	Sharma V.K.	-do-
6.	R.A. Podar Ayurvedic College, Bombay.	Koppikar S.S.	-do-
7.	Institute of Medical Sciences. Banaras Hindu University, Varanasi	Tewari P.V.	<i>Vidangadi yoga</i> K and J Capsules.
8.	Nizania General Hospital, Hyderabad.	Shibli Mohd.	White <i>ghungai</i> and <i>Chawal their</i> <i>Bhaji</i>
<b>Chemico Pharmacological</b>			
9.	All India Institute of Medical Sciences, New Delhi.	Arora R.B.	<ol style="list-style-type: none"> <li>1. <i>Gunja (Abrus precatorius)</i></li> <li>2. <i>Japa (Hibiscus rosasinensis)</i></li> <li>3. <i>Haridra (Curcuma longa)</i></li> <li>4. <i>Palasha (Butea frondosa)</i></li> <li>5. <i>Chitraka (Plumbago zeylanica)</i></li> <li>6. <i>Vidanga (Embelia ribes)</i></li> <li>7. <i>Gurjara Beejam (Daucas carota)</i></li> <li>8. <i>Tulasi (Ocimum sanctum)</i></li> </ol>

1	2	3
10.	Institute of medical Sciences, Banaras Hindu University, Varanasi. <i>Udupa K.N.</i>	1. <i>Japa (Hibiscus rosasinensis)</i> 2. AYUSH 47 (Coded drug)
11.	Ayurvedic University, Jamnagar. <i>Vasavada S.A.</i>	1. <i>Vidanga (Embelia ribes)</i> 2. <i>Tulasi (Ocimum sanctum)</i> 3. <i>Sitaphal (Anona squamosa)</i> 4. AYUSH 47 (Coded drug)
12.	Government Medical College, Trivandrum. <i>Radhakrishnan N.</i>	1. AYUSH 7 (-do-) 2. AYUSH 47 (-do-)
13.	Orissa University, Bhubaneswar. <i>Rath R.K.</i>	1. <i>Tatishapatre (Abies webbiana)</i> 2. <i>Pippali (Piper longum)</i> 3. <i>Nimba (Melia azadirachta)</i> 4. <i>Haridra (Curcuma longa)</i> 5. <i>Methika (Trigonella foenum graecum)</i> 6. <i>Rakta chitraka (Plumbago rosea)</i> 7. AYUSH 7 (-do-) 8. AYUSH 10 (-do-) 9. AYUSH 47 (-do-)

## Publication

The following monographs are in the process of publication :

1. List of medicinal plants growing in the districts of Andhra Pradesh through which river Godavari is flowin.
2. Medicinal flora of Gwalior Forest Division Madhya Pradesh
3. Monograph of Rajagir forest, Bihar
4. Monograph on *Aragwada*
5. Monograph on *Ashwagandha*
6. Monograph on *Punarnava*
7. Monograph on *Kasturi*
8. Monograph on *Abroma augusta*

## Patents

The Council during the year under review has applied for the following patents :

1. A process for the production of lactonic glycoside from *Nerium indicum*.
2. A process for the isolation of Pongaflavone from *Pongamia pinnata* (L) Pierre (Syn. *P. Glabra*)
3. A process for the production of 'Sodiosyamenol' from *Cassia seamea* (lam. pods)
4. A process for the production of 'Kajebenfuranol compound' from Kajic acid and Catechol.
5. A process for the production of 'Mesua syrup' from *Mesua ferrea*.
6. A process for the isolation of a Nepataefolinol from *Leonatis Nepateefolia*
7. A process for the isolation of a Methylamgolensate and Deoxy-andirobin from bark of *Soymida febrifuga*.
8. A process for the isolation of a Gangetin from *Desmodium gangeticum*.
9. A process for the isolation of Tomatid-5-EN-3-OL from *Solanum trilobatum*.

**Institutes/Centres/Units/Enquiries  
Institutes**

1. Central Research Institute (Ayurveda), Patiala.
2. Central Research Institute (Ayurveda), Cheruthuruthy.
3. Central Research Institute (Unani), Hyderabad.
4. Central Research Institute (Siddha), Madras.
5. Central Research Institute (Homoeopathy), Calcutta.
6. Indian Institute of History of Medicine, Hyderabad.
7. Jawaharlal Nehru Ayurvedic medicinal Plants Garden Herbarium and Museum, Poona.
8. Regional Research Institute (Ayurveda), Calcutta.
9. Regional Research Institute (Ayurveda), Bhubaneswar.
10. Regional Research Institute (Ayurveda), Jaipur.
11. Regional Research Institute (Homoeopathy), New Delhi.
12. Regional Research Institute (Homoeopathy), Kuruchi,
13. Regional Research Centre, Jogindernagar.
14. Regional Research Centre, Vijayawada.
15. Regional Research Centre, Nagpur.
16. Regional Research Centre, Jhansi.
17. Regional Research Centre, Bangalore.
18. Amalgamated Unit, Ranikhet.

**Units**

**Survey of Medicinal Plants Units and Cultivation :**

1. Government Ayurvedic Pharmacy College, Rajpipla.
2. Government Ayurvedic College, Gwalior.
3. Government Ayurvedic College, Patna.
4. Government Ayurvedic College, Gauhati.
5. Government Ayurvedic College, Jammu.
6. Government College, of Indian Medicine, Tirunelveli.
7. Government Ayurvedic College, Trivandrum.

**Composite Drug Research Scheme (Pharmacognosy Units) :**

1. Indian Drug Research Association, Poona.
2. L.M. College of Pharmacy, Ahmedabad.

3. Ayurved Research Institute, Trivandrum.
4. National Botanic Garden, Lucknow.
5. Regional Research Laboratory, Jammu-
6. Punjab University, Chandigarh.
7. Bose Institute, Calcutta.
8. Aligarh Muslim University (Unani), Aligarh.

**Composite Drug Research Scheme (Chemistry Units) :**

1. National Chemical Laboratory, Poona.
2. Osmania University, Hyderabad.
3. Delhi University, Delhi.
4. Kerala University, Trivandrum.
5. Calcutta University, Calcutta.
6. Institute of Medical Sciences, Banaras Hindu University, Varanasi.
7. Aligarh Muslim University (Unani), Aligarh.

**Composite Drug Research Scheme (Pharmacology Units) :**

1. Haffkine Institute, Bombay.
2. S.M.S. Medical College, Jodhpur.
3. Medical College, Trivandrum.
4. K.G. Medical College, Lucknow.
5. Institute of Medical Sciences, Banaras Hindu University, Varanasi.
6. Gandhi Medical College, Bhopal.
7. Calcutta University, Calcutta.
8. Aligarh Muslim University (Unani), Aligarh.

**Composite Drug Research Scheme (Clinical Units) :**

1. Ayurvedic Team at Seth Tarachand Ramnath Charitable Ayurvedic Hospital, Poona.  
Allopathic Team at B.J. Medical College, Poona.
2. Ayurvedic Team at R.A. Podar Ayurvedic Hospital, Bombay.  
Allopathic Team at J.J. Group of Hospital, Bombay.
3. Ayurvedic and Allopathic Teams at New Civil Hospital, Ahmedabad.
4. Ayurvedic Team at Government Ayurvedic College, Trivandrum.  
Allopathic Team at Government Medical College, Trivandrum.

5. Ayurvedic Team at State Ayurvedic College, Lucknow.  
Allopathic Team at K.G. Medical College, Lucknow.
6. Ayurvedic and Allopathic Teams at Institute of Medical Sciences,  
Banaras Hindu University, Varanasi.
7. Ayurvedic Team at Government Ayurvedic College, Gwalior.  
Allopathic Team at G.R. Medical College, Gwalior.
8. Ayurvedic Team at Safdarjang Hospital, New Delhi.  
Allopathic Team at All India Institute of Medical Sciences,  
New Delhi.
9. Aligarh Muslim University (Unani), Aligarh.

**Drug Standardisation Research Units :**

1. Ayurveda Vikas Mandal Pharmacy, Junagadh.
2. Ayurvedic Research Institute, Trivandrum.
3. Institute of History of Medicine and Medical Research (Unani),  
New Delhi.
4. Captain Srinivasamurthy Research Institute (Ayurveda, Siddha,  
Preliminary Drug Standardisation Research Unit), Madras.
5. Dalvar Homoeopathic Medical College (Homoeopathy), Patna.

**Extraction Supply Units :**

1. Calcutta University, Calcutta.
2. Kerala University, Trivandrum.

**Unit for Toxicity Studies**

1. Haffkine Institute, Bombay.
2. L.L.R. Medical College, Meerut

**Drug Proving Units (Homoeopathy) :**

1. D.N.De Homoeopathic Medical College, Calcutta.
2. K.N.H. Homoeopathic Medical College, Bhagalpur.
3. Midnapore Homoeopathic Medical College, Midnapore.
4. National Homoeopathic Medical College, Lucknow.
5. Homoeopathic Medical College, Belgaum.
6. Central Drug Proving Cell, Headquarters, New Delhi.



### **Clinical Research Units/Fact Finding Mobile Clinical Research Units**

1. Dr. A. Lakshmipathi Unit for Research in Indian Medicine, Voluntary Health Services, Madras.
2. All India Institute of Mental Health, Bangalore.
3. R.A. Podar Ayurvedic Hospital (Dietetic), Bombay.
4. R.A. Podar Ayurvedic Hospital (Panchakarma), Bombay.
5. Government Ayurvedic Hospital, Baroda.
6. Ayurvedic and Unani Tibbia College, New Delhi.
7. Ayurvedic College, Kottakkal.
8. Government Ayurvedic College, Hyderabad.
9. Ayurvedic and Unani Tibbia College (Unani), New Delhi.
10. A.A. Hospital (Sidda & Unani) Madras.
11. Vishwayatan Yogashram (Yoga), New Delhi.
13. Patanjali Yoga Research Institute (Yoga), Hyderabad.
14. Yoga Sadhanashram (Yoga), Ahmedabad.
15. Yoga Treatment-cum-Research Centre (Yoga), Jaipur.
16. Delhi Yoga Sabha (Yoga), Delhi.
17. Shivanand Math (Yoga), Gauhati.
18. Dr. Gururaju Government Homoeopathic College (Homoeopathy), Gudiwada.

### **Fact Finding Mobile Clinical Research Units :**

19. Shri Krishna Ayurvedic College, Kurukshetra.
20. Civil Hospital, Vidisha.
21. Institute of Medical Sciences, Banaras Hindu University, Varanasi.
22. Under Graduate Ayurvedic College, Gujarat Ayurved University, Jamnagar.

### **Literary Research Unit :**

1. T.M.S.S.M. Library, Thanjavur.
2. Gujarat Ayurved University, Jamnagar.
3. Takmil-u-Tibb Unani College (Unani), Lucknow.
4. Aligarh Muslim University (Unani), Aligarh.
5. Government College of Indian Medicine (Siddha), Tirunelveli.

## Enquiries

### Preliminary Standardisation Research :

1. Gujarat Ayurved University, Jamnagar.
2. Institute of Medical Sciences, Banaras Hindu University, Varanasi.

### Composite Drug Research Scheme :

1. Dr. A. Lakhmipathi Unit for Research in Indian Medicine, Voluntary Health Services, (Clinical) Madras.
2. JIPMER, (Clinical) Pondichery.
3. Central Drug Research Institute (Extraction Supply), Lucknow.

### Drug Standardisation :

1. Academy of Ayurveda, Vijayawada.
2. Government Ayurvedic Pharmacy, Hyderabad.

### Clinical :

1. *Vijayasara* in the treatment of *madhumeha* at Government Ayurvedic College, Jammu.
2. Aetiopathogenesis and treatment of *timira* at Rishikul Ayurvedic College, Hardwar.
3. Indigenous drugs on thyroid swellings at Ayurvedic college, Gurukul Kangri, Hardwar.
4. *Arogyavardhini* in hypercholesteraemic conditions at State Ayurvedic College, Lucknow.
5. Pathogenesis and treatment of *kamala* and *yakritroga* at Institute of Medical Sciences, Banaras Hindu University, Varanasi.
6. *Guggulu* in obesity and other lipid disorders at Institute of Medical Sciences, Banaras Hindu University, Varanasi.
7. *Varuna* and *Kulatha* in the management of urinary calculus at Institute of Medical Sciences, Banaras Hindu University, Varanasi.
8. Studies on
  - i) Ayurvedic drugs in the management of wounds
  - ii) Principles and techniques of *nasyakarma*.
  - iii) Treatment of ano-rectal disorders at Institute of Medical Sciences, Banaras Hindu University, Varanasi.
9. Treatment of worms with *paribhadra* and *kampillak* at Government Ayurvedic College, Gauhati.
10. *Agni* with relation to *jatharagni* at Institute of Medical Sciences, Banaras Hindu University, Varanasi.

11. *Prakriti* and disease proneness at Tilak Ayurved Mahavidyalaya, Poona.
12. Endocrine response to *Rasayana* at Institute of Medical Sciences, Banaras Hindu University, Varanasi.
13. *Shodhana* in *pittaja kushta* at Akhandanand Ayurvedic College, Ahmedabad.
14. *Basti* and *shoola* at Maniben Ayurvedic Hospital, Ahmedabad.
15. Studies on *Sandhigata vata*, *Gridhrasi* at A.A. Government Hospital, Madras.

**Family Planning (Clinical) :**

1. Ayurveda Resarch Institute, Trivandrum.
2. R.A. Podar Ayurvedic College, Bombay.
3. State Ayurvedic College, Lucknow.
4. Institute of Medical Sciences, Banaras Hindu University, Varanasi.
5. Government Tbbia College (Unani), Hyderabad.

**Family Planning (Chemico-Pharmacological) :**

1. Gujarat Ayurveda University, Jamnagar.
2. Institute of Medical Sciences, Banaras Hindu University, Varanasi.
3. Agricultural University, Bhubaneswar.

**Homoeopathy :**

1. Institute of Medical Sciences, Banaras Hindu University, Varanasi.

# AYUSH

## LOCATION OF THE INSTITUTES / CENTRES / UNITS / ENQUIRIES



- A - Central Research Institute (CRI)
- B - Regional Research Institute (RRI)
- C - Regional Research Centres (RRC)
- D - Clinical Research Units (CRU)
- E - Clinical Research Enquiry (CRE)
- F - Drug Standardisation Units / Preliminary Standards Units / Enquiry (DSRU / PSU / DSRE)
- G - Composite Drug Research Scheme Units / Enquiries / Extraction Supply Units and Units for Toxicity Studies (CDRS / ESU / TS)
- H - Drug Forming Units (DFU)
- I - Survey of Medicinal Plants Units (SMPU)
- J - Mobile Clinical Research Units (MCRU)
- K - Family Planning Clinical / Chemical & Pharmacological Screening Units [CAU / CPSU (FP)]
- L - Literary Research Units (LRU)
- M - Herb Garden (Garden)
- N - Head Quarters (CCRIMH)
- O - Documentation Centre (Doc Centre)
- P - Indian Institute of History of Medicine (IIHM)
- Q - Amalgamated Units, Panchkoti (AU)

NOTE - The figures shown alongside the alphabets indicate the number of Units in that category