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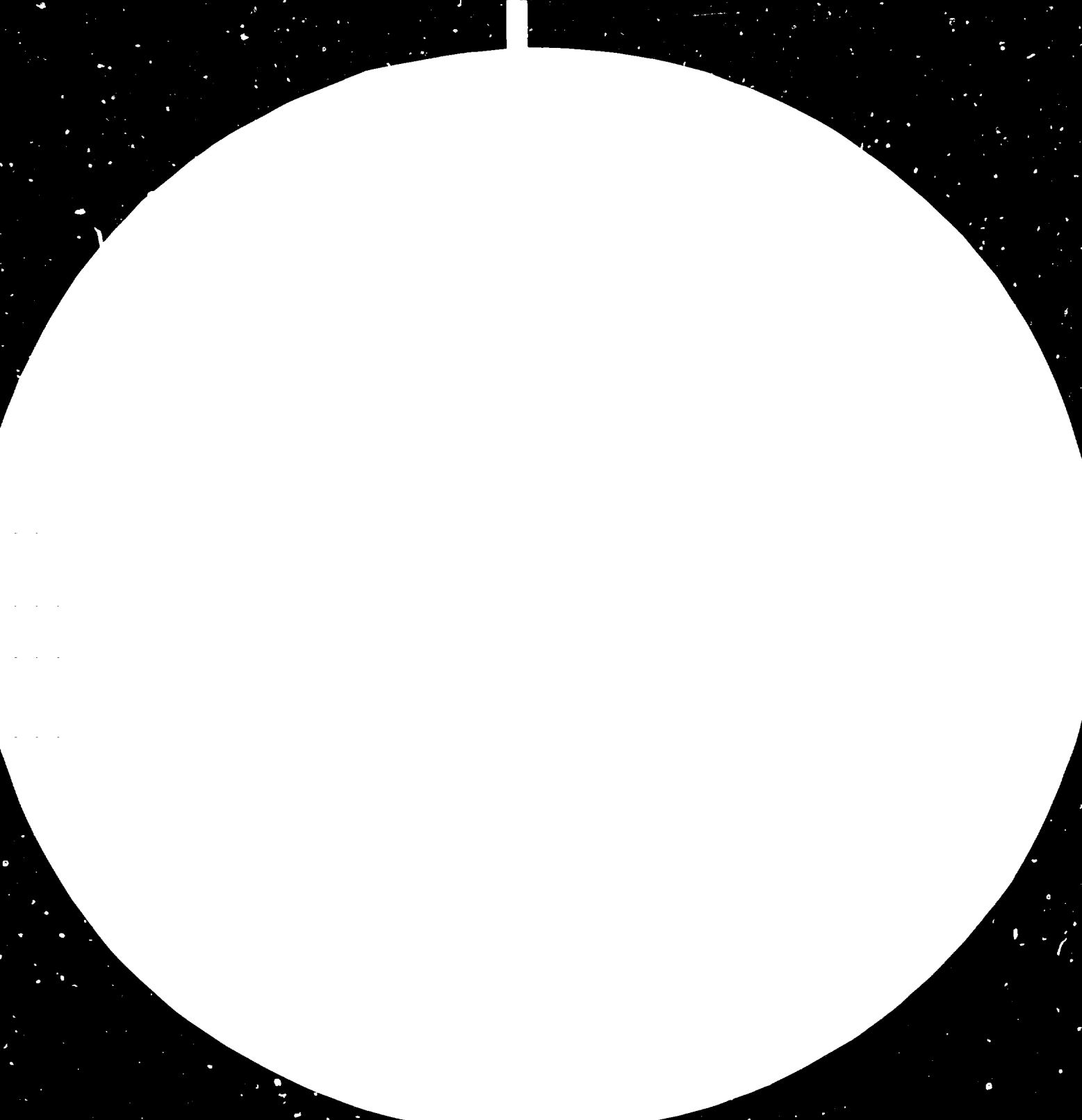
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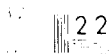
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In-Plant Group Training Programme
in the Field of Medicinal Herbs

Bucharest, Romania, 23 June - 18 July 1980

R E P O R T*

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1. INTRODUCTION

Through the initiative of the Joint UNIDO-Romania Centre, the First Training Programme in the Field of Medicinal Plants for participants from Botswana, Cameroon, Guinea, Lebanon, Nepal, Tanzania and Turkey was organized in Bucharest, Romania, between 23 June and 18 July 1980.

The proposal made to UNIDO to organize a training programme in the field of medicinal plants was submitted in 1976 and since then it was yearly included in the Work Programmes of the Joint UNIDO-Romania Centre. The approvals and the funds could be obtained and made available by UNIDO only in 1980.

The programme was officially opened in the presence of Mr. Ion Marinescu, Director of the Joint UNIDO-Romania Centre, prof. Finn Sandberg, special technical adviser, UNIDO staff member, prof. Dr. C. Baloescu, Director of the Institute for State Control of Drugs and Pharmaceutical Researches, Mr. D. Rizescu, director of the Training Centre of the Ministry of Chemical Industry as well as the management officials, directors and specialists from the Chemical and Pharmaceutical Research Institute, Plafar Trust, the Industrial Central for Medical Drugs, Cosmetics, Dyestuffs and Lacquers, the Experimental Research Station Fundulea, the Pharmacy Faculty of Bucharest.

In their speeches the speakers showed the significance of the programme, the contribution of the Joint UNIDO-Romania Centre in assisting the UNIDO Secretariat in training the personnel of the developing countries in fields which should contribute to the turning to account of the natural resources of these countries engaged in their efforts to get industrialized. Likewise, prof. Sandberg expressed his opinion that a training programme in the field of medicinal plants should continue to be implemented both for the benefit of English and French speaking countries.

At the same time, it was stressed that the objective of the programme was to show the participants the methods applied in Romania for turning to account the medicinal plants and the organization system.

The programme was officially closed on 18 July 1980 in the presence of all those who attended the opening ceremony. The Pharmaceutical Unit of UNIDO was not represented at the closure session of the programme. Both the opening and the closing sessions as well as the interviews given by some participants were notified in the newspapers and they were broadcasted.

2. PARTICIPANTS

The programme was attended by eight participants from seven countries such as Botswana, Cameroon, Guinea, Lebanon, Nepal, Tanzania and Turkey. For a week, at the beginning of the programme the participants were accompanied by UNIDO staff member: prof. Finn Sandberg. From the eight participants, six attended the whole programme, while Mr. D. Joshi from Nepal arrived one week later and Mr. Malla from Nepal came the day before the closing day of the programme. With the approval of the UNIDO Secretariat, a special ten days programme was organized for him. He had the possibility to visit research institutes, production units and to discuss the specific problems of his company with numerous specialists from research, production and foreign trade institutions.

The names of participants without their complete curriculum vitae were conveyed to the Joint UNIDO-Romania Centre by the Pharmaceutical Unit only on 10 June 1980 when the programme was already worked out and approved and when no essential changes could have been brought function of the university qualifications of the participants (of which four were pharmacists and four were botanists) and especially function of their various present concerns. Four participants are working in research (one phytochemist, three botanists), two in the education (one professor of pharmacognosy and one assistant lecturer) one in the pharmaceutical industry and one in a governmental body.

The complete list of participants and their places of work is given in annex 1.

3. ORGANIZATION OF THE PROGRAMME

The content of the programme worked out in 1976 was changed and improved along the years. Initially the programme conceived for a period of five weeks was concentrated to four weeks, six day a week from 23 June to 18 July 1980.

The programme consisted in 25 theoretical lectures, 10 practical demonstrations in the laboratories of two research institutes, the Pharmacy Faculty in Bucharest and a medicinal plant experimental station, six visits were arranged to industrial medicinal plant processing units where detailed explanations of the technological flows based on schemes were given, visits were organized to two medicinal plant cultivation farms, to three botanic gardens, a practical demonstration on the mapping of the medicinal plants in two forests, two laboratories in Tg. Mures were visited, where the medicinal plants are turned into pharmaceuticals based on own receipts.

The complete list of the institutes and units which participated in the implementation of this programme is presented in annex 3.

In attending this programme, the participants had the possibility to get acquainted with the methods applied in Romania for the turning to account of the medicinal plants starting with the organization system of gathering the medicinal plants from the spontaneous flora, their cultivation on special farms, the primary processing and the superior processing of medicinal plants into pharmaceuticals at an industrial scale. The research aspect applied in improving the species and in the primary and industrial processing was not neglected either. It was also illustrated the manner in which education collaborates with research and production.

From all the places visited the participants received samples of pharmaceuticals of a vegetal origin produced by the respective units.

The programme concluded with a round table meeting attended by 17 specialists, professors, management officials and various aspects of outstanding problems raised in writing by the participants were extensively debated. From the list of problems presented by participants four groups of subjects were identified:

- introduction of medicinal plants in culture and granting of technical assistance in mapping the spontaneous flora;
- collaboration in analysing and performing research work on medicinal plants;
- processing of medicinal plants and possibilities of bilateral collaboration;
- marketing aspects.

All the subjects were discussed in detail and the specialists gave complete answers since the list of problems submitted by the participants was distributed to all guests time in advance. Almost all the problems are mentioned in the participants' reports.

During the programme active methods were applied. The theoretical lectures as well as the practical demonstrations were written, translated into English and handed over to each participant in advance. Many books, leaflets and documentary materials were also offered by the many institutions which were visited. Each lecture and practical demonstration was followed by discussions. These discussions were extremely useful especially that the participants could clarify many of the problems they have at home and for which solutions were already found in Romania. Such examples are: the organization of Plafar Trust and its enterprises, the organization of the pharmaceutical enterprises based on medicinal plants and the medicinal plant microcultures, the system of organizing the experimental research stations in the field of medicinal plants, the organization of the county laboratories and medicament warehouses.

The lectures and the practical demonstrations were delivered in Romanian and the simultaneous translation was assured by highly qualified interpreters but many of the lecturers spoke English and some of them presented their subjects in English.

It is also to be mentioned that an interpreter of French was at the disposal of Mr. Balde from Guinea who did not speak English.

4. CONSULTATION ACTIVITIES

At the request of Mr. Aliou Balde from Guinea, UV and IR spectra for a sample brought from Guinea were performed and the obtained results were interpreted. A presentation on the use of the spectrometer methods to establish the molecular structures of the unknown isolated substances from the medicinal plants was also made. At the request of

Mr. Ekrim Sezik from Turkey a separate meeting with prof. Ciulei was organized, Mr. Mbenkoum from Cameroon had separate discussions on the introduction of medicinal herbs in cultures and separate meetings were organized for Mr. Malla from Nepal between 18-24 July 1980.

5. PROGRAMME MANAGEMENT

The management of the programme was entrusted to Mrs. Maria Anghelescu from the Joint UNIDO-Romania Centre, who was responsible for the organization and implementation of the programme. For the carrying through of the programme the Joint UNIDO-Romania Centre collaborated with a team of specialists from the Institute of State Drug Control and Pharmaceutical Research, led by prof. Corneliu Baloescu, director of the institute. The scientific part of the programme was entrusted to Mr. Octavian Contz from the above institute who was responsible for the elaboration of the programme, the gathering and revision of all lectures.

For the implementation of the programme many specialists and institutions (see annex 4) brought their important share and about 35 are authors of the delivered lectures.

The training programme director assured and continuously supervised the implementation of the programme and the fulfilment of all necessary measures with the view of well carrying it through.

6. TRANSPORTATION AND ACCOMMODATION OF PARTICIPANTS

The transportation was organized by the programme management in collaboration with the Training Centre of the Ministry of Chemical Industry. Microbuses, cars were hired for the visits made to the different units (two research institutes for ten days, two medicament enterprises for two days, the Experimental Station for Medicinal Plants Fundulea - one day, Cernica and Pustnicul forests - one day, Plafar Enterprise in Bucharest - one day), as well as for the study tour undertaken from Bucharest to Brasov - Tg. Mures - Gioagiu - Orăştie - Sibiu - and back to Bucharest, driving 908 km. in five days. Likewise, the programme management took care of the transportation by plane to Jassy and backwards.

In all their visits both in Bucharest and to other places, the participants were accompanied by Mrs. M. Anghelescu and/or Mr. Octavian Contz, as well as experts from the Chemical Pharmaceutical Research Institute or the Institute for State Drug Control and Pharmaceutical Research. This assured the arrival in time at the scheduled places and the carrying through of lectures and visits according to the established programme. It is also to be stated that almost all the participants were awaited at the airport with the exception of two participants (Guinea and Nepal) who did not announce their arrivals. All participants were led to the airport on their return home.

The participants were booked at first class hotels and the accommodation was organized by the management of the programme. In Bucharest the participants had their meals at different restaurants at their own choice while during their journeys outside Bucharest the programme management took care of their meals as well.

7. SOCIAL AND CULTURAL ACTIVITIES

The programme consisted in a number of cultural activities of which Mrs. Maria Anghelescu the programme director took special care. A cocktail party was organized at the premises of the Joint UNIDO-Romania Centre and on that occasion slides on the activity carried on by two mobile units which visited Asia and Africa as well as slides on the Romanian spontaneous flora were presented. On the same occasion the participants had the possibility to have discussions with almost 20 Romanian specialists and management officials who were invited at the party. Visits were arranged to museums in Bucharest, historical monuments in Jassy, in Brasov, to World renowned libraries like Teleki Library in Tg. Mures, to the Pharmacy Museum and Brukenthal Museum in Sibiu. Performances by which the participants could admire the Romanian folklore dances and songs were recommended.

Through the care of prof. C. Baloescu a medical consultation was organized for Mr. A. Balde from Guinea with a renown professor in medicine.

8. PROGRAMME EVALUATION

The training programme ended with an evaluation session. The participants filled in the evaluation forms sent by the Pharmaceutical Unit and the reports worked out by each participant were handed over to the Programme management. At the end of the session, Mr. I. Marinescu, director of the Joint Centre and Mr. C. Baloescu, director of the Institute for State Drug Control and Pharmaceuticals Research, handed over to each participant certificates by which their attendance at the training programme was notified and the following telex was sent to UNIDO on behalf of participants: "At the closing meeting of the training programme in medicinal plants held in Bucharest from 23 June to 18 July we participants from seven developing countries wish to thank UNIDO Secretariat and the Pharmaceutical Unit for having sponsored this programme. We can say that the programme offered us a complete image on the cultivation and processing of medicinal plants and we recommend UNIDO to turn such a programme into a permanent one in Romania and to implement the recommendations included in our individual reports. Pearl Motsepe - Botswana, MBenkoum - Cameroon, Dr. Aliou Balde - Guinea, Nawal Hatoum - Lebanon, Dr. Malla and D.P. Joshi - Nepal, E.B. Katenga - Tanzania, Dr. Ekrem Sezik - Turkey".

From the evaluation forms it appears that the delivered lectures the practical works, the practical demonstrations were interesting and useful for the participants, mentioning that they will be able to apply in their own countries what they have learned during their training programme (Annex 5 - Compiled answers of the Evaluation Forms).

With regard to the participants' opinion on the total duration of the programme, they suggested to increase the number of practical work in the specific field of interest of each participant and 28% of participants recommended a six week programme.

9. CONCLUSIONS

The programme achieved its objective and it was successfully implemented. The programme indicated the need to further assist the developing countries in the field of mapping, research and processing the medicinal plant on a pilot and industrial scale. It was suggested to organize the programme in English and French alternatively.

Some appreciation words expressed by the participants in their individual reports with regard to the organization of the training programme are given below:

"It was observed that so much time, energy, sacrifice and interest was put in by all of the organizers, lecrurers and demonstrators. It is for this reason that the workshop succeeded. It is also important to mention here that the receptions and hospitality accorded to the participants at all levels and places they worked and visited was remarkable.... The workshop has not only succeeded in achieving its objectives but has also succeeded in bringing together countries interested in the development of pharmaceutical industries to come together and share common problems and experiences needed for the development of these industries." (Mbenkum Fonki Tobias, Cameroon).

"Enfin, qu'il me soit permis de rendre un hommage mérité au Joint UNIDO-Romania Centre pour les réels efforts déployés pour la réussite du Séminaire. Le même hommage est adressé à l'Institut de contrôle et de recherche pharmaceutique, à l'Institut de recherches chimiques et pharmaceutiques, à la Station de Furdulea, aux facultés, à Biofarm et à tous les autres centres visités. Que tous ceux qui nous ont apporté leur concours, leur assistance veuillent accepter l'expression de notre profonde gratitude, je pense à Mme Anghelescu, Prof Baloescu, Dr. O. Contz et à tous les autres". (Dr. Aliou Baldé, Guinea).

"The programme was well constructed but short. The organizers of the programme from the UNIDO-Romania Centre were accommodating and very friendly. Also contributing to the success of the programme were the people - professors, doctors, engineers and all the others met were willing to help and discuss aspects in the programme. The discussions and lectures we easy could follow because of the fantastic interpreter from the Centre" (Mrs. Pearl Motsepe, Botswana).

"This training programme in this field of medicinal plants was successful according to the background of purpose of this workshop... This programme was most profitable for me due to this and have a global idea about cultivation, exploitation of spontaneous flora, formulation and processing of medicinal herbs. The experience of a four week programme can be applied in my country... I like to thank Ms. Anghelescu for her sincerity and management of the programme" (Mr. D.P. Joshi, Nepal).

"This report will be incomplete without mentioning the kind attention and cooperation of the Romanian people especially the organisers of the workshop who made sure that our stay in Romania was as comfortable as possible" (Mr. E.B. Katenga, Tanzania)

GROUP TRAINING PROGRAMME IN THE FIELD
OF MEDICINAL HERBS

23 June - 18 July 1980
Romania

LIST OF PARTICIPANTS

1. Dr. Aliou Mamadou BALDE, Guinea - Pharmacist, Deputy
General Director of Quinquina Station
2. Mr. Emmanuel Benedict KATENGA, Tanzania - Pharmacist,
Production manager, Pharmaceutical
Plant, Keko
3. Ms. Pearl Dijeng MOTSEPE, Botswana - Biologist, Assistant
lecturer, Botswana Agricultural
College
4. Mr. Tobias Fonki MBENKOU, Cameroon - Botanist, Research
Centre for Medicinal Plants
5. Ms. Nawal HATOUM, Lebanon - Pharmacist, Counsellor, National
Fund for Social Security
6. Mr. Ekrem SEZIK, Turkey, Pharmacist, professor, Pharmacognosy
Chair at the Faculty of Pharmacy
7. Mr. D.P. JOSHI, Nepal - Botanist, Royal Drug Research Insti-
tute, Kathmandu
8. Dr. S.B. Malla, Nepal - Director, Royal Drug Research Ins-
titute.

xxx) For the last two participants the Joint UNIDO-Romania
Centre did not receive the Nomination Forms.

IN-PLANT GROUP TRAINING
IN THE FIELD OF MEDICINAL
PLANTS

Bucharest-Romania

23 June - 18 July 1980

FIRST WEEK

Monday, 23 June 1980

- 9.30-10.30 - Official opening of the Programme.
- Welcome greeting addressed by Mr. I. Marinescu, director of the Joint UNIDO-Romania Centre.
- Greeting addressed by prof. Corneliu Baloescu, director of the Institute for Drug Control and Pharmaceutical Research.
- 11.00-12.00 - Therapeutical importance of the medicinal plants and of the active principles. Presents prof. C. Baloescu.
- 12.00-13.30 - Presentation of the programme. Presentation of participants.

Tuesday, 24 June 1980

- 8.15 - Departure by bus to PLAFAR Trust.
- 9.00-11.00 - Presentation of Plafar Trust.
- Basic principles in choosing and applying culture technologies for cultivated medicinal and aromatic plants. Presents Florentin Craciun, General director of PLAFAR Trust.
- 11.00-13.15 - Practical demonstrations.
- 13.30 - Return to town.
- 18.00-20.30 - Cocktail party. Presentation of slides on Romani mapping. Presentation of the activities of the Mobile units sent to several Asian and African countries.

Wednesday, 25 June

- 9.00-11.00 - Control methodology for identification and determination of medicinal species. Presents Elena Tarpo, D.Sc.
- 11.15-13.15 - Methodology of economic mapping of the spontaneous medicinal flora in a geographical area. Presents Ovidiu Dojor and Vasile Calcandi, D.Sc.
- 13.15-14.30 - Lunch break.
- 15.00-17.30 - Visit to the Botanical Garden, Bucharest.

Thursday, 26 June

- | | |
|-------------|--|
| 6.45 | - Departure to Băneasa airport by bus. |
| 7.55 | - Taking off for Jassy town. |
| 9.00 | - Arrival in Jassy. |
| 9.45-13.00 | - Visit to the "Antibiotics" enterprise.
Discussions and visit of the various sections. |
| 13.00-14.30 | - Lunch break. |
| 14.30-17.30 | - Practical works on <u>Vanca minor</u> alkaloids and
their derivatives. |
| | - Accommodation in Jassy. |

Friday, 27 June

- | | |
|-------------|--|
| 9.00-11.00 | - Biogenetic basis of active principles formation
in plants. Presents prof. Emanoil Grigorescu. |
| 11.00-12.30 | - Pharmacodynamic screening of active principles
in plants. Lecturer: Sava Dumitrescu, D.Sc. |
| 12.30-14.30 | - Lunch break. |
| 14.30-17.30 | - Visit to the Botanic Garden in Jassy |
| 19.00-20.05 | - Return to Bucharest. |

Saturday, 28 June 1980

- | | |
|------|---|
| 8.30 | - Departure by bus to Cernica and Pustnicul forest |
| | - Practical demonstrations on mapping, with Vasile
Calcandi, D.Sc. and C. Tănăsescu, pharmacist. |
| | The programme is to be carried on, the whole day. |

SECOND WEEK

Monday, 30 June 1980

- | | |
|-------------|---|
| 8.30 | - Departure by bus to the Experimental Station
of Fundulea. |
| 9.00-12.00 | - Visit and practical demonstrations on agro-
technique and improvement of medicinal plants.
Presentation of the station by Emil Păun, D.Sc.,
Director of the station. |
| 13.00-14.30 | - Lunch break. |
| 15.00-17.30 | - Continuation of the visit. |

Tuesday, 1 July 1969

- 9.00-11.00 - Introduction of new medicaments of a vegetal origin in therapeutics. Presents prof. C. Balaban.
- 11.00-12.30 - Phytoecological control of pharmaceutical products with cytostatic action. Presents prof. D. Constantinidescu.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Practical demonstrations by microscope.
- Thropane alkaloids. Presents Octavian Contz, D.S. and Mihaela Georgescu, pharmacist.

Wednesday, 2 July

- 8.00-10.00 - Departure by bus. Starting of the study tour.
- 10.00-12.30 - Visit to "Nivea" enterprise and of the culture farms belonging to this enterprise.
- 12.30-14.30 - Lunch break.
- 14.30 - Departure to Tg. Mures. Accommodation at Tg. Mures.

Thursday, 3 July

- 9.00-11.00 - New trends in the field of medicinal plants. Presents prof. Gabriel Racz.
- 11.00-12.30 - Visit and practical demonstrations in the Botanic Garden of the Pharmacy Faculty.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Visit and practical demonstrations at the Galenic Laboratory of the Pharmaceutic Office.

Friday, 4 July

- Visit to the micro-culture farms in the forest of **Sovata and Band village.**
- Departure for Orăştie.
- Accommodation at Geoagiu.

Saturday, 5 July

- 9.00-12.30 - Visit of PLAFAR enterprise in Orăştie.
- Practical demonstrations on the production of essential oils.
- 12.30-14.30 - Lunch break.
- Departure for Sibiu. Accommodation at Sibiu.

Sunday, 6 July

- Sightseeing tour of Sibiu town.
- Return to Bucharest.

THIRD WEEK -

Monday, 7 July 1980

- 9.00-11.00 - Pharmacognostic survey of the medicinal plants. Presents prof. Ioan Ciulei, Faculty of Pharmacy in Bucharest.
- 11.15-12.30 - Discussion on the presentation made.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Practical laboratory works for the identification of species. Macroscopic control of vegetal products, microscopic control and substitutes of medicinal herbs. Presents Lya Sommer, D.Sc.

Tuesday, 8 July

- 9.00-12.00 - Analytical control of digitalis glucosides. Presents V. Calcandi, D.Sc., Josephina Calcandi, Anca Crupariu.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Continuation of the programme.

Wednesday, 9 July 1980

- 9.00-12.00 - Assay for alkaloids of *Secale Cornutum* sclerotium of *Claviceps purpurea* fungus. Presents Silvia Gruiia.
- 12-15-14.30 - Lunch break.
- 14.30-17.30 - Assay of polyphenols from *Cynara scolymus* leaves. Presents Venera Popescu.

Thursday, 10 July

- 9.00-10.30 - On the Use of medicinal plants as tablets, infusions, decoctions, teas and instant teas. Presents Elena Tarpo, D.Sc.
- 10.30-12.30 - Methods of obtaining tinctures, extracts and other intermediates on a commercial scale. Presents Adrian Iuganu.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Visit to the Medicament Enterprise BICFARM.
- Practical demonstrations on the production of tinctures, extracts, scobutil and galcorine.

Friday, 11 July

- 9.00-10.30 - Identification and assay of oxymethylantraquinones in some plant products. Presents Elena Tarpo, D.Sc. and Larocla Ciupa.
- Assay of essential oil content in vegetable products. Presents Vasile Calcandi, D.Sc.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Continuation of the morning sessions.

Saturday, 12 July

- 9.00-11.30 - Extraction, isolation and purification of the alkaloids having a tropanic nucleus. Presents Constanța Rizescu, D.Sc.
- 11.30-14.30 - Visit to the pilot plant of the Institute for Chemical-Pharmaceutical Research.

FOURTH WEEK

Monday, 14 July

- 9.00-10.30 - Methods of preparation of the amides of the Lysergic acid: ergometrine and methyl ergometrine (methergin). Presents: Sas Ion.
- 10.30-12.30 - Methods of hydrogenation for the alkaloids from ergots of rye. Presents: Gabriela Pintilie.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Practical demonstrations of obtaining some derivatives of the alkaloids of *Secale Cornutum*. Presents: Gh. Brotea and Lelia Rosca.

Tuesday, 15 July

- 9.00-11.00 - Bioactive extracts preparation from plants for cosmetics industry. Presents: Ludmila Popa and Valentina Cristea.
- 11.15-12.30 - Sources of raw materials of a vegetal origin for steroid hormones. Presents Ludmila Popa.
- 12.30-14.30 - Lunch break.
- 14.30-17.30 - Preparation of active soluble powders from plant extracts. Presents: I. Popescu and Gh. Brotea.
- Solid-liquid extraction methods for obtaining the active principles from plants. Presents: Măscov Valentin.

Wednesday, 16 July

- 9.00-11.00 - Development of the drug industry based on medicinal plants. Presents: C. Sîrbu, D.Sc., director of the Institute for Chemical-Pharmaceutical Research, and Elena Dumitrescu.
- 11.00-12.30 - Visit to the Medicament Enterprise Bucharest.

Thursday, 17 July

- 9.00-11.00 - Methods of collecting, drying and storing drugs. Economic aspects. Presents: Mircea Alehan.
- 11.15-12.30 - Industrial valorification of the medicinal herbs in Romania. Presents: O. Contz and A. Kuzanu.
- Free time.

Friday, 18 July

- 9.30-12.30 - Round table discussions. Co-ordinator: Prof. C. Balboescu.
- Programme evaluation.

LIST OF INSTITUTIONS INVOLVED IN THE IMPLEMENTATION
OF THE TRAINING PROGRAMME IN THE FIELD OF
MEDICINAL HERBS

Industrial enterprises and economic units for collecting and
primary processing of the medicinal plants

1. Medicinal Drugs Enterprise "Bucuresti"
2. Medicinal Drugs Enterprise "Biofarm"
3. Medicinal Drugs Enterprise of Jassy

5. Cosmetics Factory "Nivea", Brasov
6. PLAFAR Enterprise, Bucuresti
8. PLAFAR Enterprise, Orăştie

Research institutes

8. Institute for State Drug Control and Pharmaceuticals Research
9. Institute of Chemical and Pharmaceutical Researches
10. Experimental Station of Medicinal Plants Fundulea

Education institutes

11. Faculty of Pharmacy, Bucharest
12. Faculty of Pharmacy, Jassy
13. Faculty of Pharmacy, Tg. Mures

Medicinal Plants culture and cultivation farms

14. Microculture farm of Bod, ("Nivea" Enterprise Brasov)
15. Microculture farm of Band, Tg. Mures.

Laboratories and Pharmacies

16. Galenic Laboratory, Tg. Mures
17. Control Laboratory, Tg. Mures
18. Medicinal Drugs Warehouse of Tg. Mures
19. Pharmacy no. 1, Tg. Mures
20. Pharmacy of Band.

Botanic Gardens

21. Botanic Garden of Bucharest University
22. Botanic Garden of Jassy
23. Botanic Garden of Pharmacy Faculty of Tg. Mures

LIST OF SPECIALISTS INVOLVED IN THE
IMPLEMENTATION OF THE TRAINING PROGRAMME
IN THE FIELD OF MEDICINAL HERBS

Institute for State Drug Control and Pharmaceutical Research

1. Prof. Corneliu Baloescu , director
2. Dr. Pharm. Octavian Contz
3. Dr.Pharm. Elena Tarpo
4. Dr.Pharm. V. Calcandi
5. Dr. Marcela Guja
6. Dr.Pharm. Venera Georgescu
7. Dr. Cornel Tănăsescu
8. Dr. Ovidiu Bojor
9. Silvia Gruia, Researcher
10. Iosefina Calcandi, Researcher
11. Pharm. Mihaela Georgescu
12. Doina Cucu
13. Anca Grupariu

Institute of Chemical and Pharmaceutical Researches

14. Dr.eng. St. Cilianu
15. Dr.Pharm. Ecaterina Nichiforescu
16. Dr,Chem. Constanta Rizescu
17. Ion Sas, researcher
18. Gabriela Pintilie, researcher
19. Gh. Brotea, researcher
20. Lelia Rosca, researcher
21. Ludmila Popa, researcher
22. Valentina Cristea, researcher
23. I. Popescu, Măscov, V. researchers
24. Nina Uricariu
25. Angela Harles

Experimental Station of Fundulea

26. Dr.eng. Emil Păun, director - and his collaborators

Faculty of Pharmacy Bucharest

27. Prof,Dr.doc. D. Dolinescu, Dean
28. Prof. Dr.doc. I. Ciulei, Chief of Pharmacognosy Chair
29. Dr.Pharm. Lia Sommer

Faculty of Pharmacy Jassy

30. Prof.Dr. E. Grigorescu
31. Prof. Dr. Sava Dumitrescu

Faculty of Pharmacy Tg. Mures

32. Prof. Dr. G. Racz
33. Conf. Dr. Ludovic Adam
34. Dr. Carol Csedo
35. Prof. Gh. Bota
36. Dr. Kottila Racz

PLAFAR Trust

- 37. Eng. F. Crăciun, Director general of the Plafar Trust
- 38. Mircea Alexan , biolog
- 39. Eng. I. Dumitrescu
- 40. Pharm. Marieta Dinu
- 40'. St. Grozea, director of Plafar Enterprise Bucharest
- PLAFAR ENTERPRISE - Grăstie
- 41. Dăn Ilie, director
- 42. Chim, Cadariu Traian
- 43. Dr. pharm. Gabriel Tibori

Central for Medicinal Drugs, Cosmetics, Varnishes and Lacquers

- 44. eng. E. Dumitrescu

Biofarm Enterprise

- 45. Eng. I. Marinică, director
- 46. Pharm. A. Iuganu

Antibiotics Enterprise of Jassy

- 47. eng. Veniamin Munteanu, director

Nivea Enterprise, Brasov

- 48. Eng. E. Boiceanu, director

Pharmacy no. 1 Tg. Mures

- 49. Dr. Pharm. A. Kacso

Pharmacy and Microculture farm of Band

- 50-51. Mr. and Ms. Konrad



