

## Training of overseas graduates in pharmacology

S. E. SMITH

*Department of Pharmacology, St. Thomas's Hospital Medical School, London SE1*

In 1968 the British Pharmacological Society set up a working party\* to investigate the training in pharmacology of graduates from overseas, to find out if the training obtained in departments in the United Kingdom was best suited to the needs of the graduates and of their own departments and to make recommendations. This report contains the findings of the working party and information derived from a questionnaire which was circulated during November 1968.

### Questionnaire

This was sent to the heads of forty-three departments of pharmacology in universities and Government research institutes in the U.K. The list was compiled from that used by Bakhle & Paton (1966), omitting the heads of all industrial departments. The questionnaire requested details of overseas graduates in training in November 1968 and of those who had been in training during the previous 3 years (1965-1968). All the questionnaires were completed and returned. Of the forty-three departments forty-one accepted or were willing to accept trainees from overseas, though seven had had no trainees during the period concerned. The numbers of trainees accepted by all departments during 1965-68 are indicated in Table 1.

### Trainees

In November 1968, fifty-four overseas graduates were in training. A further sixty-nine had trained during the previous 3 years. Though no precise information was provided on the number of trainees arriving in each year, the total intake of 123 indicates an approximate yearly intake of twenty to twenty-five trainees. The countries of origin are shown in Table 2. Most of the individuals (ninety-five)

TABLE 1. *Numbers of overseas graduates in training in different departments during 1965-1968*

| No. of departments | No. of trainees in each department | Total |
|--------------------|------------------------------------|-------|
| 7                  | 0                                  | 0     |
| 10                 | 1                                  | 10    |
| 7                  | 2                                  | 14    |
| 5                  | 3                                  | 15    |
| 4                  | 4                                  | 16    |
| 2                  | 5                                  | 10    |
| 2                  | 7                                  | 14    |
| 1                  | 8                                  | 8     |
| 1                  | 10                                 | 10    |
| 1                  | 11                                 | 11    |
| 1                  | 15                                 | 15    |

Total, 123; mean, 3.0; median, 2.

\* The working party included Professors G. Brownlee and J. L. Mongar and Dr. S. E. Smith. Professor R. S. Stacey advised on the drafting of the questionnaire; his help is gratefully acknowledged.

came from developing countries and many of them were financially supported by their own governments. All sources of support are shown in Table 3.

About half the trainees were medical graduates, the remainder having had previous training in pharmacy or in veterinary or other biological sciences (Table 4). Eighty-one individuals took degrees during their stay in the United Kingdom, fifty-eight at doctorate level (Table 5). Six individuals took two degrees; one took three degrees. The commonest duration of stay was 3 years (Table 6), which was also the average stay of those who completed degrees.

TABLE 2. *Country of origin of overseas graduates*

| Region                           | Country   |      |                |      | Regional total |
|----------------------------------|-----------|------|----------------|------|----------------|
| Europe                           | Austria   | (1)  | Hungary        | (3)  | 13             |
|                                  | Finland   | (1)  | Italy          | (1)  |                |
|                                  | France    | (1)  | Poland         | (2)  |                |
|                                  | Greece    | (1)  | Switzerland    | (3)  |                |
|                                  | U.S.A.    | (8)  | Mexico         | (1)  |                |
| North, Central and South America | Canada    | (3)  | Trinidad       | (2)  | 15             |
|                                  | Chile     | (1)  |                |      |                |
|                                  | Ghana     | (4)  | Sudan          | (3)  |                |
| Africa                           | Libya     | (1)  | Uganda         | (3)  | 23             |
|                                  | Malawi    | (1)  | U.A.R. (Egypt) | (4)  |                |
|                                  | Nigeria   | (7)  |                |      |                |
| Near East                        | Iran      | (1)  | U.A.R. (Syria) | (1)  | 9              |
|                                  | Iraq      | (7)  |                |      |                |
| Asia                             | Burma     | (3)  | Japan          | (1)  | 42             |
|                                  | Ceylon    | (4)  | Malaysia       | (1)  |                |
|                                  | China     | (1)  | Pakistan       | (12) |                |
|                                  | Hong Kong | (1)  | Singapore      | (2)  |                |
|                                  | India     | (15) | Thailand       | (2)  |                |
| Australasia                      | Australia | (3)  |                |      | 3              |
| Unspecified                      |           |      |                |      | 18             |
| Total                            |           |      |                |      | 123            |

TABLE 3. *Financial support of overseas graduates*

| Source                    | No. of graduates |
|---------------------------|------------------|
| Own government            | 41½              |
| British Council           | 12½              |
| United Nations agencies   | 8½               |
| Personal funds            | 7½               |
| U.K. universities         | 5½               |
| Commonwealth scholarships | 5½               |
| Colombo Plan              | 5                |
| Wellcome Trust            | 4½               |
| Medical Research Council  | 2½               |
| Others                    | 30               |
| Total                     | 123              |

Individual support from two sources was taken as one half from each source, irrespective of the amount derived from each.

TABLE 4. *Previous degrees of overseas graduates*

|                    |     |
|--------------------|-----|
| Medical            | 59  |
| Pharmaceutical     | 13  |
| Veterinary         | 4   |
| Biological science | 28  |
| None               | 1   |
| Not stated         | 18  |
| Total              | 123 |

### Training programmes

The questionnaire revealed that no special arrangements exist in the U.K. for the training of overseas graduates in pharmacology. Departments provide tuition and facilities for research for overseas and home graduates alike. In twenty-five of thirty-three departments which provided the information, overseas graduates participate as demonstrators in undergraduate practical classes and in twenty-nine of thirty-six they are expected to attend staff lectures to undergraduates. In nine of thirty-six departments they are required to give undergraduate lectures on a few special topics.

### Requirements

It is apparent that overseas graduates from developing countries face some special difficulties when training in this country, quite apart from the personal problems which confront all overseas students (Sen, 1970). First, they must obtain a higher degree in a limited time, often under pressure from their own sponsors. This is the primary reason for their visit. Second, on arrival they may lack the scientific laboratory background experience which is expected of U.K. graduates, though in this respect standards vary widely as do therefore the difficulties faced by the trainees. Third, though having some general background knowledge they may lack experience in practical pharmacology, often because of poor facilities in their home departments. Fourth, they may be faced with scientific practices which contravene their own cultural and religious attitudes. Thus in Asian countries it is frequently considered unacceptable for intellectuals to soil their hands by doing laboratory work and in Buddhist communities the killing of an animal for experimental purposes is anathema.

TABLE 5. *U.K. degrees taken by overseas graduates*

|                                  | Number |
|----------------------------------|--------|
| Ph.D., D.Phil. or M.D.           | 58     |
| M.Sc., M.Phil. or M.Pharm.       | 15     |
| B.Sc. or B.Pharm.                | 9      |
| Diploma in Clinical Pharmacology | 6      |
| LAH, Dublin                      | 1      |
| None                             | 23     |
| Not stated                       | 19     |
| Total                            | 131    |

TABLE 6. *Duration of study in U.K. by overseas graduates*

| Duration (yr) | Graduates taking degrees | Graduates not taking degrees |
|---------------|--------------------------|------------------------------|
| <1            | —                        | 6                            |
| 1             | 10                       | 12                           |
| 2             | 14                       | 5                            |
| 3             | 38                       | —                            |
| 4             | 8                        | —                            |
| 5             | 3                        | —                            |
| >5            | 6                        | —                            |
| Total         | 79                       | 23                           |

No information was provided on the duration of stay of the remaining twenty-one graduates.

At the end of training most of the graduates return to their own countries, many of them to positions of authority from which they are expected to organize research and teaching and to administer departments. The findings of the working party indicate that their subsequent research output is often slight, partly because their research training in the U.K. has not helped them to tackle problems of importance to their own countries. It is important in this respect that pharmacologists in developing countries are often under pressure to pursue research into particular fields such as indigenous drugs, contraceptive agents, essential foodstuffs and vitamins. It would be helpful if the training of such graduates in the U.K. included the acquisition of skills which could be applied to their own particular problems.

The lack of scientific background and practical experience in general pharmacology appears to be a serious drawback which could be alleviated by course training. With this in mind the British Pharmacological Society through the working party is organizing a special training course for overseas graduates to be known as the Summer School in Pharmacology.

### Summer School in Pharmacology

This special full-time course of 8 weeks duration and of Hons. B.Sc. standard will be run on an experimental basis during three consecutive summers beginning in 1971. The courses are sponsored by the British Pharmacological Society and the Nuffield Foundation. The first course will take place at Chelsea College and at University College, London, starting on Monday, 2nd August 1971 and ending on Friday, 24th September 1971.

The primary aim of the course will be to provide the trainee with practical experience of techniques of wide application in pharmacological research. These will include general laboratory techniques, isolated organ bath studies, bioassay, biochemical and radioisotope methods and statistics. The latter part of the course will explore ways in which these techniques can be used to solve pharmacological problems. There will be seminars on various pharmacological topics and lectures on the control of animal experimentation and on animal breeding for experimental work. The course will include also an assessment of the trainees' English language difficulties and, where appropriate, individual or group language instruction.

*Applications* (by 1st May 1971) are invited for places on the first course which will be run for up to fourteen but not for fewer than six trainees. It is envisaged that places will be available for graduates who have secured positions for training in pharmacology in U.K. university departments starting in October 1971, though trainees who are already working in such departments may also apply. The fee for course attendance is £100 but candidates in severe financial straits may apply for remission of part of this fee. Applications for attendance of the course should be made as soon as possible in writing to Dr. S. E. Smith, Department of Pharmacology, St. Thomas's Hospital Medical School, London SE1.

### REFERENCES

- BAKHLE, Y. S. & PATON, W. D. M. (1966). Report on the questionnaire on the organisation of pharmacology in Great Britain. *Br. J. Pharmac. Chemother.*, **27**, 239-248.  
SEN, A. (1970). *Problems of Overseas Students and Nurses*. London, Nat. Foundn Educ. Res. in England and Wales.

(Received January 26, 1971)