# OPPORTUNITIES FOR GRADUATE STUDY AND RESEARCH IN THE TROPICS[1]

HAMILTON H. ANDERSON M.D.[2]

In 1946 (1) the final report of the Committee on the Teaching of Tropical Medicine of the Association of American Medical Colleges briefly outlined the future opportunities for study and research in the tropics. Meleney *et al.* stated that "No science can flourish or advance without opportunities for new discoveries." One reason why tropical diseases have attracted so little interest in American medicine is that we have had little responsibility in the tropics, and too little exchange of ideas with medical scientists from tropical countries. In order to conserve the interest of those of us who have taught tropical medicine and parasitology during World War II and, in order to encourage the best talent to enter these fields, it is essential that opportunities be provided for medical personnel to study and conduct research *in the tropics*. This can best be accomplished by the establishment of research stations in tropical regions under friendly influence or control, and by a program of interchange of personnel between our universities and those of tropical countries.

We all recognize that opportunities in the tropics for study and research were responsible for the remarkable developments in medicine and advances to our knowledge that occurred during the first two decades of this century. The advances made by the Medical Research Board of the United States Army and the Bureau of Science in the Philippines are well known. The activities of the Army in Cuba and the digging of the Panamá Canal provided opportunities in the Western Hemisphere that bred men and ideas for control of diseases indigenous to the American tropics. The Rockefeller Foundation's disease control measures, not only in Brazil and elsewhere in the Americas, but in the Mediterranean and other areas as well, has developed a corps of American scientists with primary interests in tropical hygiene and sanitation. The United Fruit Company's several hospitals have provided health services for many Central American and South American communities. The part played by the Gorgas Memorial Laboratory is well known and continues to be most significant. More recently the efforts of the American Foundation of Tropical Medicine in getting a research laboratory started in Liberia with the encouragement of the Firestone and other commercial interests are encouraging. The U. S. Navy's Research Stations in the South Pacific are well known to you.

Also encouraging are the efforts of the World Health Organization to assign personnel for service in the tropics, as well as in other parts of the world. The Fullbright Act permits, in several countries located in the tropics, American scientists to study and work abroad for limited periods. The Belgian-American Fellowship program started after World War I has benefited many Belgians

[1] Presidential address, 46th annual meeting of the American Society of Tropical Medicine, Savannah, Georgia, Nov. 8, 1950.

[2] American University of Beirut School of Medicine, Beirut, Lebanon.

wishing to study in the United States, but few Americans have gone overseas under this program. Now with the general sciences laboratory established in the Belgian Congo at Costermansville, under Dr. Louis van den Berghe's direction, the opportunity exists for work in tropical Africa under nearly ideal circumstances.

One might mention also the increasing need for health and medical personnel for the expanding activities of the oil industries, as merely one segment of general industrial expansion overseas, where greater opportunities exist today. Pan-American and other international airway systems must maintain medical services for their extensive overseas establishment. Knowledge of tropical medicine is vital to effective prosecution of any overseas development in tropical or sub-tropical latitudes.

Despite these increasing interests and needs for personnel in tropical medicine, I believe it is fair to say that less complete instruction is being given and less faculty support is being offered by medical schools in the United States than at any time since World War II. We all realize that the medical curriculum is crowded and that specialities of medicine are demanding more and more time of the undergraduate. Thus we are left with abbreviated courses in parasitology and with a few notable exceptions, largely didactic instruction in the preventive and clinical aspects of tropical medicine. Moreover, when patients appear with diseases usually classified as tropical, there is occasion for special comment on their exotic and unusual nature.

If the basic principles of tropical disease prevention and control are to be appreciated, first hand experience in the environment where all the contributing factors can be studied and fully evaluated is essential. If there is any real difference between medicine as we know it in the temperate zones, and medicine of the tropics, it is this, namely, the multiplicity of factors which influence disease states in the tropics. We are all aware of impaired nutrition, of anemias secondary to parasitic invasion, of vitamin deficient states, of dermatologic complications which color the primary or presenting disease complex. One can talk about these multiple factors indefinitely, but appreciation of their significance comes only with experience in the field. Since many tropical diseases tend toward chronicity, one must fully weigh the influence of multiplicity of diseases or deficiency states in order to outline effectively the best possible management of the individual patient.

In my opinion, optimum use of existing teaching and research institutions, for the purposes outlined, can best serve Americans and other nationals in adding to our total knowledge of tropical medicine and hygiene *only in the tropics*. Thus, we will benefit by the experience and first-hand knowledge of those now in the field. Others may benefit by exchange fellowships or professorships between institutions abroad and at home. In order to benefit all concerned, the plan adopted should be mutually advantageous.

Techniques and methods peculiar to our system in the United States would bring about greater understanding of modern medicine to others. Equally advantageous would be the experience of American personnel who would bring back greater stimulation from the problems presented "on site" (in the field).

Solution to some of the exotic problems might be attempted in the field, or if the conditions permit, may be sought on return to the United States. This is the pattern the government agencies are following today. Thus far, with a few notable exceptions, our educational institutions in medicine have not followed this pattern.

We may summarize very briefly, the attitudes of a few representative physicians and investigators, now working in the tropics. Since each presents unique opportunities for graduate study or research, answers were sought to the following questions:

1. Will U. S. A. nationals be permitted to work in laboratories in the tropical areas concerned?
2. Is an exchange fellowship or professorship more desirable, and mutually agreeable?
3. How many can be accommodated in any particular area at any one time?
4. Are the summer months (in the United States) a suitable time for tropical studies? Which period is optimal and of what duration?
5. Is it desirable for physicians or groups of investigators to travel under the auspices of an educational institution or foundation?
6. Which diseases are major problems in the specific area?

These questions were put to several people, particularly in Africa, the Middle East, the American tropics, and the South West Pacific. A cursory, spot survey of six areas which offer unique opportunities for graduate study and research in representative tropical regions has been summarized (see Table I). Briefly, the impressions gained are:

1. U. S. A. nationals are working or can be accommodated at Beirut, Lebanon; at Cairo, Egypt; in the Belgian Congo; in British Nigeria; in San Juan de Costa Rica; and at the University of the Philippines.
2. In four of these six areas exchange fellowships were stated to be desirable.
3. The number that can be accommodated at present is 20 or more, subject to appraisal by local authority.
4. In some places a duration of stay of six months or more was believed to be desirable. It is difficult to accomplish much in less than six months, I believe, except under very unusual circumstances, or with limited, well defined objectives.
5. The time of year suitable for tropical study or research is not limited, in one place the summer period (U.S.A.) was thought to be desirable; in another, because excessive rains prohibited travel, the summer period seemed not suitable.
6. In half the centers competent individuals might study or work, in the other half groups of workers are preferred.
7. In the table is the listing of diseases considered to be of major significance in each area. As one might expect, malaria, amebiasis, the enteric infections, and nutritional and deficiency states are prominent. It is encouraging to note the primary interest in the Belgian Congo in bioclimatology and general physiology as well as interest in rickettsial and virus diseases. Almost every one of the centers responding can offer a full experience in a great variety of diseases common to the tropics.

TABLE I

| | LOCALE | | | | | |
|---|---|---|---|---|---|---|
| | Beirut | Cairo | Belgian Congo | British Nigeria | Costa Rica | Philippines |
| U.S.A. Nationals Permitted? | Yes | Yes (must be supported) | Yes (Laboratory fee) | Yes | Yes | Yes (by arrangement) |
| Exchange Fellowships Desirable? | Yes | — | Yes (team desirable) | Handicapped by difference in exchange rates | Yes | Yes |
| Number to be Accommodated & Duration | Two or more (at present). Period: 6 mons. or more | Subject to approval by proper authority | Six at present, period: 6 mons. or more | Two (at present) | Five to ten in hospital each year | Depends on arrangements made |
| Summer or other Suitable Period? | No preference | No preference | No preference | Summer best period | No preference | Period other than summer preferred |
| Single Persons or Groups with Institutional Affiliation? | Individuals or groups | Individuals (competent scientists) | Prefer: Belgian American Educational Foundation Fellows | Groups probably preferred (subject to approval) | Prefer groups with institutional affiliation | Individuals or groups |
| Diseases of Greatest Significance | Amebiasis, ascariasis, taeniasis, enteric infections, disorders of skin, trachoma, hepatitis | Schistosomiasis, enteric infections, malaria, amebiasis, deficiency diseases, trachoma | Bioclimatology & general physiology, rickettsial & virus diseases, skin & nutritional disorders | Malaria, trypanosomiasis, schistosomiasis, yaws, leprosy, yellow fever, filariasis, relapsing fever | Malaria, amebiasis, other intestinal parasites, leishmaniasis, viruses, yaws, & nutritional anemias | Malaria, amebiasis, schistosomiasis, typhoid, shigellosis, salmonellosis, leprosy, yaws, helminths, beriberi |

As you know, under the UNESCO program for study abroad there is provision for fellowships, scholarships and educational exchange. In the fields of study represented, 1148 opportunities were offered in the medical sciences for 1949–50. The number of fellowships offered by each of the several nationalities is quite liberal and the citzenship of potential applicants in many cases includes those from the United States of America (2). Surely continuing education in the field of tropical medicine can be and is included under this program. Your Vice-president, Dr. Frederick J. Brady, will tell you as a representative of this government on the Executive Board of the World Health Organization, that this Organization is vitally interested in and able to offer opportunities for field service in tropical medicine. As you know, President Truman's Point IV program envisions technicologic aid and personnel to undeveloped areas, including the tropics, where such aid is vital. As an example, under the E.C.A. program, a total of 50 scientists for training in Africa is anticipated. Dr. Brady stated earlier this year that perhaps 300 United States citizens may be employed for research and control of diseases in various parts of the world, under the Point IV program. A number of agencies such as the independent South Pacific Commission and the Pan-American Sanitary Bureau may employ these people within the framework of the United Nations.

Finally, it should be said that a few educational institutions in the United States and Canada offer collaborative enterprises with governments in the American tropics. These are between the Bowman Gray Institute of Tropical Medicine and the Dominican Republic; the School of Tropical and Preventive Medicine of the College of Medical Evangelists with Mexico, Columbia University and Puerto Rico; and Tulane University and Mexico.

A similar tie has been suggested at the University of California, by Dean Francis S. Smyth, with the University of the Philippines. McGill University has sent post-graduate students to Trinidad and British Guiana, after three months of laboratory instruction and systematic lectures in Canada (3).

I think we would all admit that the interchange of faculty members and research workers between universities in this country and institutions in the tropics is of great benefit mutually. As Meleney has indicated, nearly all fellowships in the past have been granted to foreigners to obtain the benefit of study and research in this country. Now with our expanding objectives toward "world medicine" and mutual assistance to our friends abroad, it is vital to our future to make the two-way street fully operative. How this society can fill its traditional role of maintaining appropriate standards of education in tropical medicine is a timely question. I do not know the answer, but with the prodromes of world conflict being bruited about us, perhaps we should take inventory of what must be done to perpetutate our kind.

I therefore, would strongly urge this society to set up in collaboration with the American Foundation of Tropical Medicine, a permanent office to record specific opportunities that exist for study and research in the tropics where up-to-date and complete information might be assembled. It might then be circulated through Tropical Medicine News not only to our own members but

to all interested parties. Only in this way can we anticipate and be ready for the increasing needs for properly trained personnel in tropical medicine throughout the world.

## REFERENCES

1. Meleney, H. E., Soule, M. H. and Kostmayer, H. A.: Final Report of the Committee on the Teaching of Tropical Medicine of the Association of American Medical Colleges. *J. Assn. Amer. Med. Coll.*, **21**: 193–208, 1946.
2. International Documents Service, Columbia University Press, 2960 Broadway, New York 27, N. Y.
3. Cameron, T. W. M.: Tropical Medicine Education. *J. Assn. Amer. Med. Coll.*, **24**: 305, 1949.
4. The following persons kindly supplied the data included in Table I: Drs. A. Peña Chevarria, Neal J. Conan, Jr., M. G. Yogore, Louis Van den Berghe and Capt. Jas. Sapero and Bruce Kwatt.