

Revisiting Bandoeng

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Introduction

The Bandoeng Conference on Rural Hygiene, organized by the League of Nations Health Organization (LNHO) in 1937, has been rightly called a “milestone in health and development.”¹ In its deliberations one finds “repeated recommendations of intersectoral and interagency collaboration, the emphasis on health education and broader educational reform, and urgent entreaties for the full utilization of nonmedical health personnel” as well as “open references to ‘rural reconstruction’ and ‘land reform’...”¹ (p. 43) Dr. Halfdan Mahler, Director General of World Health Organization (1973-1988), noted the parallels between the outcomes of the Bandoeng Conference and WHO’s Primary Health Care (PHC) approach, which became enshrined in the Declaration of Alma-Ata adopted in 1978.²

This being said, surprisingly little has been written about the Conference. This neglect is seen by Iris Borowy, author of a history of the LNHO, to be consistent with how “the social medicine program in international health policies in the 1930s ... has been forgotten by today’s heirs.”³ (p. 34)

In her authoritative book on the LNHO, Borowy describes in some detail how this Conference came to be organized, what factors determined its agenda, and some of the tensions present due to the “pro-

found ambiguity that existed on the questions of colonialism, of the role of Western medicine in Asia and, by extension, on the West as a model for the entire non-Western world.”⁴ (p. 355) More recently, Annick Guénel has added to our understanding of some of these tensions by examining more closely several of the country reports prepared in advance for the Conference.⁵ In addition, Sunil Amrith has teased out how Bandoeng’s outcomes helped shape India’s notions concerning public health during its late Colonial and Post-Colonial period.⁶

This paper does not address the impact of the Conference on subsequent developments in global health nor of its status as a “milestone.” Instead, a more critical examination is made – first, through a comparison of the annotated agenda with the actual report produced, which suggests that the Conference organizers expected more practical results to emerge, followed by a closer look at the background materials prepared, as well as some experiences that were *not* reviewed at the Conference. This analysis leads the author to conclude that the Conference’s agenda almost forced a discussion of issues in a fragmented manner – diseases were separated from environmental sanitation, and both subjects were discussed with little relationship to either medical or health services. Thus, the diseases most important for the tropics, particularly malaria, were left hanging with little linkage to environmental sanitation and the human health resources needed for their control. In sum, an opportunity for putting tropical medicine and hygiene on the global map was lost.

The paper begins with a short review of the Conference’s history; it closes with a discussion on how the issues addressed some 80 years ago remain relevant today.

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Origin

The LNHO was established in 1920 at a time when the major threat to human health was seen to be communicable diseases spreading across continents from one part of the world to all others. Countries needed to have individuals suitably trained to detect such diseases and to undertake whatever means were needed to stop their further spread. The LNHO helped establish training programs to form such cadre and assisted countries setting up needed surveillance systems as well as supporting laboratory and research facilities. This agenda largely occupied the LNHO during its first ten years of existence. Towards the end of the 1920s, countries began to ask for advice on how best to develop their health systems. It is in this context that rural health became “the largest and also most important project of the LNHO.”⁴ (p. 325)

Rural health was first addressed by the European Conference on Rural Hygiene, which took place in Geneva between June 29 and July 7, 1931. Expectations were high, as expressed by Gustavo Pittaluga (a member of the LNHO Health Committee and the driving force behind this conference) in his closing remarks:

*for the first time on so large a scale and with so much authority, practicing physicians, health officers, administrators, agriculturalists, engineers and organizers of agricultural associations have met together for the thorough study of those questions which are most important for the improvement of rural living conditions from the standpoint of hygiene and health.*⁴ (p. 339)

Recommendations were made on three topics: (1) medical assistance; (2) health services; and (3) sanitation. The first of these called for the collaboration of public authorities, the medical profession, health insurance institutions, mutual benefit associations, and private agencies in the provision of effective medical assistance. The second called for the state to retain primary responsibility to frame the health policy of rural areas. The third identified a number of initiatives expected of health authorities, including the instruction of school children, build-

ers, contractors, and leaders among local communities; the development of demonstration programs, such as model homes; improving rural housing through education, increasing financial resources through cheap credit or improved technical support to farmers; and “bonification,” i.e., the complete sanitary reconditioning of the land. This had been done in the Italian Pontine Marshes where “lasting progress required the settlement of all reclaimed land and the introduction of intensive agriculture and modern animal husbandry.”⁷ (p. 151)

The idea of a conference for Asia was first vetted by the Indian and Chinese delegations in 1932. In May 1936, the Health Committee of the LNHO accepted the invitation of the Dutch Government to hold the conference in the Dutch Indies (Indonesia today) in 1937, leaving a year for preparation. A commission of three rapporteurs was formed. The agenda for the Bandoeng conference was prepared following their visit to Burma, Ceylon, India, Indo-China, Malaya, the Netherlands East Indies, the Philippines, and Siam. Their tour was used to establish contact with all relevant governmental departments, directly or indirectly involved in health matters, to spread the word about the upcoming conference, to motivate authorities to participate, and to prepare the conference agenda.

The tour dramatically altered the agenda for the Conference. Borowy describes this in terms of its focus having evolved from

*issues of colonial medicine care systems to recommendations for the comprehensive development of Asian societies; from a consideration of strategies to organize subservient populations along European interests to considerations of strategies to develop societies according to their own needs....*⁴ (p. 352)

The most obvious change supporting this conclusion was the addition of rural reconstruction to the agenda, which called for attention to be given to nutrition, agriculture, education, and cooperative movements.

The Conference was attended by around 100 participants that included country representatives,

members of the Secretariat, experts, and observers. Special reports were prepared for each subject, but not all authors were present. As well, background papers included “notes” received by the Secretariat on a personal basis.

The Conference represented the last major initiative on the part of the LNHO concerning rural health. Plans to follow up this conference with one in the Americas were thwarted by the lukewarm relationship between Hugh Cumming, Director of the Pan-American Sanitary Bureau, and Ludwik Rajchman, Medical Director of the LNHO. Nor did the LNHO attempt to gather more information concerning rural reconstruction, as suggested by the Conference. This is not surprising given Rajchman’s forced departure the following year and the diminishing role of the LNHO as World War II approached.

Outcomes compared with expectations

The Conference approached the problems of rural hygiene from an

*intersectoral and interagency perspective and focused not only on the need to improve access to modern medicine and public health but also on the fundamental challenges of educational uplift, economic development, and social advancement.*¹
(p. 42)

The subjects addressed were health and medical services; rural reconstruction and collaboration of the population; sanitation and sanitary engineering (housing, water supply, disposal of house refuse and other wastes, and fly control); nutrition; and measures for combatting certain diseases in rural districts (malaria as well as plague, hookworm, tuberculosis, pneumonia, yaws, leprosy, and mental diseases). Each subject was dealt with by a Commission or sub-Commission.

Health and medical services

The annotated agenda for the Conference identified 4 items under this topic: principles governing the organization of health and medical services; personnel (doctors and auxiliary staff); curative and

preventive activities; and budgets. The Commission dealing with this subject was headed by Dr. John L. Hydrick, a Rockefeller Foundation (RF) staff member stationed in nearby Purwokerto. Three sub-committees were appointed – medical education, budgets, and one whose task was to consider a proposal “for a survey or surveys of the various factors affecting the health situation, to be carried out in a representative area or areas in various countries.”⁸ (p.

⁴⁶) V.M.T. McGusty (Secretary for Native Affairs and Inspecting Medical Officer, Suva, Fiji) chaired the sub-committee dealing with medical education.

Four background papers were commissioned by the Secretariat in support of this topic; these were authored by Dr. Pierre M. Dorolle, Dr. C.C. Chen, Dr. McGusty (with Dr. Sylvester Lambert) and Mr. T. Miyazaki. Only Chen was not present at the Conference.

Participants took time to visit Hydrick’s nearby model health center, which Selskar Gunn found to be “one of the best public health exhibits” he had ever seen.⁹ Hydrick’s program “aimed to communicate the usefulness of hygiene measures to the population by simple and practical demonstration, films and public lectures, home visits, etc.”⁵ (p. 67) Gunn was a Vice-President of the Rockefeller Foundation and in charge of the Foundation’s North China project on rural reconstruction. He was present as an “observer.”

Given the complexity of the subject matter dealt with by Hydrick’s Commission, its discussion is divided into three parts: single versus dual control; one or two track medical education; and the use of auxiliary staff.

Single versus dual control

The key question concerning the organization of health and medical services had to do with the respective merits of single and dual control. “Single control” was understood to mean that medical care and health work were to be carried out by the same staff. “Dual control” meant separate parallel services, not necessarily under the same authority.

While recognizing the existence of both the dual and the single systems, Dorolle, who was *Médecine*

de 1^{er} class de l'Assistance médicale, [Physician of the Highest Order] Hanoi, Indo-China, argued in favor of the latter. A visiting health officer supervising sanitary and preventive measures will have sick persons come to him – “how can he refuse to give them advice and treatment?” More-over, “medical treatment will prove the best means of enabling the health system to get a footing in the villages and to carry out its health and prophylactic duties.” At the same time, however, the “functions of the staff in the matter of sanitation and prophylaxis” must be “clearly defined” and “preventive medicine ... systematically organized among the personnel of all categories....”^{10 (p. 8-10)}

As Chen's, McGusty's and Miyazaki's papers dealt with specific country situations in which a unitary system existed (China, Fiji, and Japan, respectively), they did not attempt to defend the “dual” system of organization. As noted in passing by Chen (Director of the Tingsien Institute), “the concept of the medical profession in [China] has been greatly influenced by American schools, where public health is always taught as being in contrast to services in hospitals and clinics.” Believing that this separation “in the West was merely historical”, China's National Health Administration believed that “it was wise for China to build her medical system on a coordinated basis.”^{11 (p. 8)}

Chen's enthusiasm for combining prevention and cure as well as for State Medicine was a consequence of his exposure to John Grant's teaching.^{12,13} Grant was an RF employee who was on special assignment at the Peking Union Medical College (PUMC) to incorporate preventive medicine in the undergraduate medical education curriculum. Grant's leading role in shaping the Chinese government's policy led to an approach that considered “prevention and cure [to be] inseparable....”^{11, (p 9)}

Some of those present probably knew that one of the reasons for the separation of preventive and curative work in many of the Far East countries was due to the “historic” policy of the Rockefeller Foundation concerning medical education and public health education in America. However, it does not seem that the importance of this “schism” (as it

would be recognized later in the century) was appreciated.¹³ Otherwise, they may not have chosen Hydrick to chair this Committee. Hydrick believed that “medical care and hygiene work concern such different fields of activity ... there should be *different* [emphasis added] subordinate personnel for each field wherever this is possible.”^{14, p 48} It should be noted that Hydrick's detailed account of his work, from which this quote is taken – *Intensive Rural Hygiene Work and Public Health Education of the Public Health Service of Netherlands India* – had not yet been published.

Some of the rapporteurs believed that curative medicine should precede health activities; some that the two should be carried out concurrently, while others believed that the location of clinics, dispensaries, and hospitals and the effective use of these institutions can best be secured by giving priority to hygiene. Not having opted for one system or the other led them to resolve that “care should be taken that neither organization should develop disproportionately to the other and that, where this disproportion exists, it should be corrected”, and that it was “essential that, whatever the means may be, they should be applied with sufficient thoroughness to make the beneficial effect of preventive work clear to the rural population ...”^{8 (p. 43)}

Furthermore, they concluded that:

- Preventive medicine is the cheapest means of improving the health conditions of the population in the rural areas, and it is along preventive lines that the effort should be principally directed.
- It is absolutely necessary to bring medical and health services as near to the population as possible, but the decentralization of activities should be guided and supervised by a central body in order to maintain efficiency and ensure a uniform policy.

One- or two-track medical education

Those who prepared the agenda expressed an interest in the Conference discussing the respective advantages of two systems for the technical training of practitioners in light of experiences gained. One

system was that of academic training with “equal standard to that given in the Universities of the Metropolis,” the other was “the creation of a diploma which, while conferring the right of practice, does not require such long and full study.”⁸ (p. 8)

Dorolle described how different countries had developed a simplified form of medical education with a shorter course of study than usual in universities of the Western type. These medical assistants received a diploma of purely local value, which in some cases authorized them to practice medicine only in the public service. In time, standards of some of these institutions improved to the level of Western universities. At this point, however, he asked

*whether it is advisable to go on training local practitioners by the old method. Whatever professional value of the latter, they are bound to be regarded by the population as second-rate doctors, which detracts from their prestige and influence.*¹⁰ (p. 9)

Although it was the Chinese government that had asked for advice on this issue earlier in the decade, Chen avoided discussing the training of physicians in his paper, as it was “too involved a problem...”¹¹ (p. 20) This is understandable given the fact that the subject had given rise to considerable and sometimes acrimonious debates earlier that decade in China. When a two-track policy for medical education was proposed in China (“medical colleges to train high-level physicians and special medical schools to train medical practitioners”¹² (p. 96), it was seen as a threat to the elite and independent status of the PUMC.¹⁶ Whatever Chen’s sentiments were several years earlier on this contentious issue, he concluded now that “Essentially, there should be only one type of doctor, the training must be inexpensive to the students, basic for future development and practical for service in rural conditions.” Also, “medical education as a whole should be influenced by the desirability of practicing medicine under organized management by the State.”¹¹ (p. 20) At this point in the history of medicine, there was almost universal belief that medical care would primarily

be provided within a state medicine structure of one kind or another.

Despite the fact that the mandate of the medical education committee was to discuss the “respective advantages” of different approaches to medical education, there is no mention of different experiences in the report of the Conference. Instead, the report recommended that

*every country should, in the sphere of medical education, attain the highest scientific level of theoretical and practical training, which should include facilities and opportunities for research.*⁸ (p. 44)

That this followed the proviso that each country’s approach to medical education should be commensurate “with its resources and its level of general education,” may be seen as an opening for lesser qualified doctors, but in fact it is more likely that the proviso was added to appease those who strongly felt that “middle” level education was more suitable for Asian countries than attaining the highest levels possible.

Also resolved was:

- Medical education has evolved from a simple beginning to a modern Western standard. This historical process of evolution should be accelerated as much as possible.
- The spirit of preventive and social medicine should permeate more and more the whole program of medical education.

Auxiliary staff

Concerning auxiliary staff, two issues were identified in the annotated agenda. One dealt with the duties of dressers: should they be limited to bandaging and the dispensing of a few harmless medicines, or should they be made into a kind of doctor’s assistant, capable of making a diagnosis and treating ordinary ailments? The second issue concerned how best to attract and give adequate training and a suitable status to young girls interested in the professions of nurses, visiting nurses, and midwives. Neither of these issues seems to have attracted the attention of the authors of the background papers. In-

stead, the training and role of auxiliaries was mostly confined to nursing staff.

Dorolle believed that the training of auxiliary technical staff (rural midwives and rural nurses), was “even more important than that of the education of doctors.” The “best solution” for making midwifery services available in rural areas was

to educate village women who will undergo courses of instruction confined to the elementary rules of cleanliness and non-intervention at the maternity hospitals under doctors and qualified midwives.^{10 (p. 12-13)}

Rural nurses should be “chosen by the village authorities themselves from among intelligent young men who have received sufficient education in the rural school.” His responsibilities upon completing a 2 to 3 year in-service training included treating certain patients who are not seriously ill and to inform the medical officer about the “state of health in the villages, to track down incipient epidemics, to take urgent preventive measures, to supervise the carrying-out of measures prescribed by the doctors, to perform vaccinations, etc.”^{10 (p. 12-13)}

It is not clear what Dorolle’s position was concerning the use of village lay workers; in Chen’s program these workers were expected to do only a minimum of necessary work (generally no more than one hour a day) following short training. Clearly, this was the precursor to the bare-foot doctor who gained global prominence in the 1970s; the lay workers were selected by village leaders and were generally drawn from the farming population.

Chen described in his paper how the program in Tingsien had begun with the premise that the types of technical personnel “should be reduced to the minimum.” At first it was believed that there should be nurses (public health), midwives, and sanitary inspectors. But that assumption proved to be wrong:

Theoretically, a public health nurse takes care of school health and general nursing work. But, in view of the primitive sanitary conditions in the community, the nurse finds it impossible to promote health unless something is done on envi-

ronmental sanitation. Immediately he finds his training in sanitation so meager or so unpractical that he must secure the assistance of a specialist. Even if the latter is available, any improvements which can be made are so simple that no specialist can have much interest in the work for any length of time. But his presence raises the cost of simple sanitation tremendously. On the other hand, if the nurse knows something about practical sanitation, he or she will be the most appropriate person to negotiate with a school-teacher and supervise any necessary construction without special visits. In other words, the fundamental work of sanitation is so simple in character that a specialized worker proves superfluous and inefficient.^{11 (p. 17)}

Given the limited funds available to support different types of workers, Chen reported that China was “considering the possibility of combining the practical training of nursing, midwifery and sanitation in the same school.”^{11 (p. 18)}

The Commission dealing with this subject placed emphasis on the necessity for ensuring that all members of the auxiliary staff receive adequate training in hygiene and preventive medicine (training to be as simple and practical as possible, care to be taken that training does not make them lose touch with the people, etc.), while concluding that the composition of the auxiliary staff relative to the kind of work they are called upon to do will vary in different areas.

Also agreed upon were:

- A large body of adequately trained auxiliary personnel is important to ensure that the connecting link between the rural inhabitant and the medical men may be as efficient as possible.
- It is essential to the proper functioning of a health service that the emoluments offered be fully adequate so that the right type of man with proper training may be attracted and retained, and enabled to devote his full time to the service.

Rural reconstruction and collaboration of the population

Rural reconstruction was linked to the collaboration of the population, because “if lasting results are to be secured, the wholehearted cooperation of the population must be obtained.” Concerning rural reconstruction, its aim is “to raise the standard of life in country districts by concerted measures in the domains of health, agriculture, education and public economy.”^{8, (p. 10)}

The Conference was asked to identify what can be done to help the population grasp the importance of the results aimed at by the various grades of the civil administration, including the head of the village. Will teaching children the principles of hygiene at school succeed in securing their collaboration in the future? Which of all the methods of health propaganda are those most likely to give the best results? And would not efforts in this direction be more fruitful if they were mainly directed towards women upon whom both the training of children and domestic responsibilities devolve?

The Conference was also asked to identify the means by which coordination of concerted measures in the domains of health, agriculture, education and public economy, could be effected, and if “cooperatives” were the most suitable agency for the purpose.

Several background papers on this subject were received and communicated to the participants; three concerned India (prepared by Mr. F.L. Brayne, Lt. Col. A.C. Chatterji, and D. Spencer Hatch), and one came from China (prepared by Dr. Chang-Fu-Liang).

All of these papers, with the exception of Chatterji's, were presented as notes with the indication that they represented the opinions of the author only and did not engage the responsibility of the Secretariat. Only Chatterji, who was Director of Public Health in Bengal, and Hatch, who was directing rural reconstruction in Travancore and Cochin States, were present at the Conference.

Chatterji's paper linked the history of rural reconstruction in India with that of malaria control. Out of several initiatives pursued in different parts

of India grew the idea of model villages where, in addition to anti-malaria activities, attention was given to better housing and improved sanitation. After a brief historical survey, Chatterji used the rest of his paper (30 pages) to outline those aspects that must be taken into account under rural reconstruction. These were quite comprehensive, including standard sanitation measures (drinking water supply and disposal of excreta) as well as rural town planning, cottage industries, and cooperative movements.

Hatch's paper, which was much shorter (10 pages), described the history of rural reconstruction that was currently taking place under his direction with the sponsorship of the YMCA, but which had been initiated earlier in the century by K.T. Paul, a prominent Christian leader and follower of Mahatma Gandhi.

Hatch on his arrival in India in the early 1920s established YMCA rural centers to be used as a place for experimenting and for showcasing successful demonstration projects that the local population could come and see. This was in Martandam in the State of Travancore. The next step was the establishment of an Extension Department, whose mission was to get family after family in village after village to benefit from what was being taught and illustrated at the Center.

His experience led him to realize that “until people have more food to eat, sanitation and medicine will not suffice.” Also, every village and every family and every individual was seen to have five kinds of needs – spiritual, mental, physical, social, and economic. These needs could best be met through self-help “with intimate, expert guidance,” reaching down to the very poorest through affordable credit schemes, and using the cooperative method as the vehicle for bringing these changes about.¹⁷ Guidance is to be provided through the demonstration method with active participation by the learner. This in turn requires finding and training leaders, with attention given to increasing the number of women leaders.

The Rural Reconstruction and Cooperation of the Population Commission was presided over by Sir Mirza Muhammad Ismail, leader of the British-

Indian delegation. Although their report was relatively brief, the resolutions adopted by this Commission drew extensively on the papers prepared on this subject; they read very well today.

The Commission called for the planning and execution of government services to be coordinated so that they were integrated, comprehensive, and effective. Each village or group of villages should have an organization of its own – namely, a committee for conducting its affairs and promoting its welfare in all ways. These committees should, in turn, be counseled by a management committee consisting of government experts and village representatives. The village committees may be entrusted with duties relating to water supply; sanitation, house improvement and village-planning; construction and maintenance of village roads and waterways; social and recreational activities including playgrounds; and education of adults, both men and women.

As any success in rural reconstruction is dependent on the presence of properly trained personnel, it was necessary that adequate facilities should be provided for the formation of the technical personnel needed in all branches of work. The selection and training of suitable personnel, both men and women, was all-important. The training must be of practical nature, including actual participation in rural work.

Realizing the increasing importance of the role which must be played by women in rural reconstruction ... everything [should] be done to ensure that women shall be given all opportunity to develop their activities in this important field.

Given the important part to be played by the village school ..., it is essential that rural schools have a curriculum of study especially suited to prepare their pupils for rural life, not only because of the obvious necessity for such training, but also because of the prestige that attaches to things taught in the school. This means that the teacher's training-colleges must provide appropriate training. The curriculum of rural schools should include reading, writing, arithmetic, health, physical training and games, the study of agriculture and nature, manual training (training in the use of tools and materials for boys, needlework and domestic science or

housecraft for girls), and citizenship. Special emphasis should be given to health education.^{8, (p. 55-56)}

Without land reform ... rural reconstruction will not rest on a permanent basis; serious consideration of this problem and the study of methods best adapted to local conditions is urgently recommended to Governments.^{8, (p. 26)}

Sanitation and sanitary engineering

What was expected of this Commission was not specified in the Conference's annotated agenda. There, one simply learns that the subjects grouped under this heading have already been studied by the Health Organization elsewhere. Gunn, who wrote the introduction to the report at the request of Rajchman, summarized this agenda point in the briefest of terms:

[T]he physical environment of rural peoples had received full consideration at the hands of the sanitary engineers present at the Conference ... Problems dealing with housing, water supply, disposal of refuse and other wastes, and fly control have been discussed and specific recommendations reached.^{8 (p. 27)}

This Commission was presided over by Dr. R.D. Fitzgerald from Malaya. It had one sub-committee that dealt with flies. Besides the control of flies, it dealt with housing, water supply, and disposal of house refuse and other wastes. Its main recommendation was that each government should constitute committees for small-village planning in order to avoid "laissez-faire" development, and that these same agencies should set up local standards dealing with such details as siting, types of houses, building material, ventilation, lighting and heating, waste disposal, and water supply. Particular emphasis was placed on the fact that kitchens should not be inside the living part of the house and that cattle-sheds should be detached.

Nutrition

In the European and North American context, the LNHO had emphasized that the principal cause of

deficient nutrition in any community is poverty, together with the ignorance which so often accompanies it. The Conference was asked to determine to what extent observations made in European and North American countries applied to the populations of the Far East? The Conference was also asked to explore what was known concerning the nutritional habits of the majority of countries in the East, the composition of their meals, and the nutritive value of the daily food ration. More broadly, it was asked to also consider “the relation between nutrition and health...”⁸ (p.11-12)

This Commission was presided over by M. Vinay from French Indo-China. It was supported by a technical group led by Dr. Aykroyd, a specialist on nutrition. Its report, aside from a lengthy technical annex on nutrition, was confined largely to recommendations favoring the importance of diet in relation to the health problems in the East, to establishing a national nutrition committee and a central institute or laboratory concerned with nutrition research in each country, the training of specialists in this field, close collaboration between nutrition and agricultural research, and the importance of the degree to which white rice is milled.

Measures for combating certain diseases in rural areas

The choice of diseases to be addressed was restricted to those “constituting a social scourge,” leaving open the addition of other diseases if requested by delegates. The Conference was expected to confine itself to a discussion of the campaign against plague, hookworm, yaws, tuberculosis, and pneumonia. On the other hand, separate consideration “will have to be given to the campaign against rural malaria, a predominating problem of rural life in certain regions.” Its study “might with advantage be entrusted to a committee of experts.”⁸ (p. 13)

This Commission, presided over by Professor De Langen, formed five Technical Groups dealing with malaria, leprosy, plague, tuberculosis and pneumonia, hookworm and yaws, and mental diseases and drug addiction, which were also briefly alluded to in the annotated agenda.

The recommendations formulated by the malaria group, which was chaired by Paul Russell, a senior RF malariologist, covered the importance of malaria, administrative policy with regard to malaria control, the cost of malaria control in the rural tropics, naturalistic methods of malaria control, the effect of construction sites on rural malaria, the relationship between rural malaria and the activities of the peasants, the distribution of anti-malaria drugs, the need for further research, and the role of League of Nation’s Malaria Commission in the countries of the Far East.

Taken together, this group of recommendations provided a solid basis for countries to engage malaria control with more seriousness than they had in the past. Some selected points:

- Since malaria is a focal disease in any country – absent in some rural areas, lightly prevalent in others, and moderately or heavily endemic elsewhere – the structure of, and program for, rural health organization, including health units and health centers, should not be stereotyped, but flexible.
- In those areas where malaria is the outstanding social and health problem, the resources of the health administration, specially augmented where necessary, should be directed chiefly towards malaria control, even if this should entail the restriction of other public health activities, until malaria is no longer of major importance.
- To reduce control costs for rural communities, every effort should be made (a) to extend the free distribution of cinchona products, (b) to enlist the aid of the people themselves in minor control methods, and (c) to explore cheaper methods of control which use time more than money. Persistence rather than perfection in control is required for rural areas.

Critical omissions

That the Conference organizers expected more tangible results from Bandoeng seems clear from a comparison of the annotated agenda and the actual report produced. This is especially the case with respect to the use of human health resources, from

the medical doctors to village auxiliaries. But more disturbing, as already mentioned and which is further discussed below, is the opportunity lost to provide more details concerning environmental sanitation, especially given its central place in all aspects of rural hygiene (especially as concerns the control of tropical diseases) and rural reconstruction.

The Conference was expected to discuss the respective advantages of two systems for the technical training of practitioners in light of experiences gained. Whether such a discussion took place is not obvious from the final report as no experiences are cited. The concern with medical doctors seems to have led to no consideration being given to the experience that McGusty and Lambert (RF staff members stationed in Suva) described in their background paper concerning the training of “native medical practitioners” (NMPs), who have “undoubtedly played the largest part in arousing the confidence of the native in western methods of treating disease...”^{18 (p. 9)} Such a health worker seemed outside the agenda as NMPs were clearly not medical doctors, though they were far more qualified than the auxiliaries that were discussed.

The training of NMPs had started in 1885 when a medical school for native Fijian boys was established at the Colonial Hospital in Suva. Young men were given three years of instruction “in the rudiments of anatomy and physiology, and clinical experience in medicine and surgery...”^{19 (p. 38)} NMPs were not expected

to reach the level of the fully qualified doctor, but to maintain the service as a subordinate one with the social standards of its members as nearly as possible on an equal footing with those of the communities, among whom they work.^{18 (p. 9)}

Before Lambert discovered the existence of this school, he had suggested training native assistants to treat common medical conditions such as hookworm, malaria, yaws, and other skin diseases, under supervision from visiting medical officers. In New Guinea, which was under German administration, he witnessed the work of well-trained orderlies, under the supervision of medical officers sent out to run

the lesser hospitals. They had the title of *Tultul*; those that he met “had a high sense of duty, and were remarkably competent.”^{20 (p. 77)}

An LNHO mission that conducted health surveys in 1929 described their training and activities as follows:

From every village, a native medical orderly is selected as a medical tultul for three months instruction at the native hospital in first aid, the treatment of ulcers, common diseases, sanitation and hygiene. He is then supplied with dressings and simple drugs and sent back to act as doctor-boy in his village, but with refresher courses of one or two months periodically...^{19 (p. 173)}

When Lambert finally was assigned to Fiji, he found 40 NMPs working under primitive conditions. However, after studying this system he concluded that it had great potential. Within months he and Dr. Aubrey Montague, Chief Medical Officer for Fiji, agreed to improve the native medical school and to make its classes available over all the South Pacific. With the financial support of the Foundation, the Suva school was established on a firm footing, and in 1928 was designated the Central Medical School for Native Medical Students. That same year the Foundation entered into a four-year cooperative agreement with the Western Pacific High Commission of the British Government to extend the training facilities of the school and “to develop a unified island health service under central control for the island groups administered by the commission.”^{21 (p. 258)}

Perhaps the apparent lack of interest in the NMP School can be explained by the 1929 LNHO Mission having had doubts concerning its utility, believing that without the closest supervision by Europeans the work of its students would be stultified by “the repressive activities of the older men and the ignorance and suspicion of the village...” However, the Mission went on to praise the work of the *tultuls* indicating that there was no need to upgrade the 2,098 *tultuls* employed in the Australian Territories to medical practitioners for at least another twenty years.^{19 (p. 173-4)}

Two other reasons seem to have led this Mission to reject the NMP program: one was the fear on the part of the Australian government that it would extend American influence in that part of the world (to the detriment of Australia's interests); the second was the fact that the Mission was headed by Raphael Cilento, who was unwilling to allow Papuan and New Guinea natives to be sent to the Fiji medical practitioners school, maintaining that they were too "backward" for such training.*

Cilento is an intriguing figure in this history. To begin with, he may have been the only professor of *both* social medicine and tropical medicine. He saw "social medicine as the study of the means for the constructive preservation of health, and tropical medicine as its practical application."^{22 (p. 143)} Cilento's work is tainted, however, by his motivation for working in the tropics, namely "the cultivation of whiteness," i.e., demonstrating that the white race could survive and thrive in the tropics, with the corollary that the health of the indigenous non-whites was of importance in so far as it contributed to this goal.²³ Nevertheless, his experience, as director of the Australian Institute of Tropical Medicine (AITM), would have contributed to providing Bandoeng with a different example of the kind of institutional changes needed to promote health under tropical conditions. None of Cilento's work appeared in the paper presented by Australia to the Bandoeng Conference.

Cilento was responsible for developing a tropical laboratory service for local practitioners, a post-graduate course in tropical medicine, and health education for the people disseminated through clear and simple programs. In the process, he managed to "change the research orientation of the AITM from disease conditions to preventive medicine, from sickness to health."^{22 (p. 46)} This was consistent with his belief that "[u]nless the administration of tropical countries makes health everything, disease will make them nothing."^{22 (p. 36)} He organized the local

* Cilento is also on record for saying that the native mind was too "inelastic" to absorb changes needed to improve their living conditions.

health services by arranging areas to be staffed with medical officers, white medical assistants, nurses, and native medical orderlies.

Queensland, where the AITM was located, contained 94% of the total white population of the tropics of Australia. During the decade that the Institute existed, its work contributed to Queensland's having a lower infant mortality rate than any other Australian state. The economic depression of the 1930s and the fact that the Institute had become a "pawn" in the national struggle for "supremacy in the medico-social field," led to its being integrated within the University of Sydney as a school of public health in 1930.²⁴ Cilento unsuccessfully fought this move with the argument that "you cannot do tropical work except in a tropical area."^{22 (p. 48)}

Although Australia was not one of the countries visited (nor were there any Australians present at Bandoeng), Dr. J.H.L. Cumpston (Director-General of Health), submitted an "Introductory Address" for the Conference. This relatively short paper (8 pages) outlined some general principles in the "development of public health services," which he illustrated through Australia's experience. Totally absent in his description is anything related to Australia's tropics! It was Cumpston who maneuvered to have Cilento's Institute transferred from Queensland to Sydney. Clearly Cumpston wanted to demonstrate that Australia belonged among the temperate developed countries rather than the under-developed countries of the world. By doing so, the Conference was deprived of a very rich history worthy of consideration.

On the use of auxiliary personnel

Mention has already been made to the difficulties encountered by Chen concerning the use of nurses in the villages covered by his program. Hydrick had a different but related experience. The detailed activities of each of the field stations he established were carried out by hygiene *mantris*, midwives, and other members of the subordinate personnel. *Mantris* were health workers who were initially trained to educate the public about hookworm but later became involved in other health problems. They were

all males (at first), were able to read and write, spoke well, and inspired confidence. Midwives entered the program at a later date. Hydrick arranged for their training to be conducted by experienced midwives.

His attempts to involve trained nurses in his program, however, soon led him to conclude, “that they were unwilling to learn the proper technique of the house-visit and remained on a far too high level for the work.”^{15 (p. 48)} Were his nurses equivalent to those that worked in Chen’s program? If there were differences, how did they impact on the work of the nurses? If there were no differences, why did Chen and Hydrick arrive at such different conclusions? It is these kinds of questions that might have shed much more useful light on what could be expected from different types of auxiliary personnel, especially as both Chen and Hydrick associated their work with environmental sanitation. Instead, as already noted, the Conference opted to recommend that each country develop auxiliary staff suitable to its needs.

Chen, Hydrick, and Lambert were all well-trained physicians. Their experience had convinced them of the essential need for physicians of equal competence to be in charge, as indicated by what Lambert called “The Formula”:

Native doctors and nurses to care for current illnesses and educate their people in the prevention of disease, especially in soil sanitation and pure water supplies; attention to infant and child welfare; reliable census-taking to check results – all under the supervision of competent European physicians and nurses.^{20 (p. 381)}

What to do when there were few or no doctors with such competence was not up for discussion at this point in the history of rural health.

Rural reconstruction

As already noted, this subject was well-documented and the responsible Commission produced admirable recommendations. There was one aspect of China’s experience, however, that was not reflected in the report, despite the presence of Gunn, who was responsible for the Rockefeller Founda-

tion’s Rural Reconstruction project in North China. This is the role that could be played by academic institutions in such programs.

Gunn first arrived in China in 1932 to explore the possibilities of mounting a multi-disciplinary approach to rural reconstruction. He quickly attached his program to that of Jimmy Yen’s Mass Education Movement, whose headquarters were located in Tingsien where Chen was responsible for rural health. By 1935, Gunn decided that rather than focusing on “the more revolutionary concepts of the Tingsien experiment,” the objectives of the program could be “better obtained through a concentration on University investigation and training into the community field.”²⁵ This shift in orientation was reflected in the background “note” prepared for the Conference by Dr. Leonard Shihlien Hsü, Councillor, Ministry of Industry, China and Professor at Yenching University, which was one of the universities that received grant money from Gunn. In his paper, Hsü described his relationship to Tingsien in these revealing terms:

For many years, James Yen and his colleagues in Tingsien and some of us in the universities have conducted regional experiments in a hsien or ch’u. Many people misunderstood us and thought that we went to Tingsien, Tsouping, Chingho, etc. in order to make these districts utopian communities. The truth is that we have gone into the country not to offer the rural population a new gospel of social salvation or to create model communities, but to learn for ourselves the methods of social administration – the correlated application of technics to community reconstruction. We have had to do this because we have been able to learn nowhere else. Indeed, pure knowledge in any technical science may be obtained from the traditional schools and laboratories, but not methods of correlated social application. So we have to learn these methods by ourselves, and we can learn them only by actually going into the villages ourselves.^{26 (p. 13)}

After lamenting the inadequacy of urban-based training, Hsü went on to describe “a new development,” which Gunn had opted for, namely a “multi-university-community approach,” as seen in the establishment of the North China Council of Rural Reconstruction – “a council of universities interested in a correlated approach of various fields.”^{26 (p. 14)} By 1936, this council had become the centerpiece of Gunn’s program.

Environmental sanitation

Various aspects of environmental sanitation are to be found throughout the report of the Conference. In fact, the recommendations made by the other Commissions are far more indicative of the central importance of this aspect of rural hygiene than in the report produced by the Commission dedicated to this subject. One possible explanation for this anomaly is the fact that key persons, in particular Hydrick and Lambert, were taken up by other responsibilities.

What is particularly unfortunate is the lack of any reference to Hydrick’s 60-page book *Intensive Rural Hygiene Work in Netherlands India*, which, as already indicated, was published later that same year. Essentially a ‘do-it-yourself’ manual, it is largely dedicated to environmental sanitation – latrine building, boiling of water, making houses safe, bringing clean water into the schools, protecting food from flies, etc. To bring about these advances it is necessary “to awaken in the people a permanent interest in hygiene and to stimulate them to adopt habits and to carry out measures which will help them secure health and remain healthy.”^{15 (p. 2)} Hydrick considered this to be “the purpose” of his work.

Health education was a central theme in Hydrick’s program:

If the people can be taught that they themselves can carry out certain simple measures which will help them avoid one of the chronic diseases, they will learn to live more hygienically and thus build up their resistance to many other diseases.^{15 (p. 4)}

Educational methods and materials used elsewhere were altered to make them suitable for use under local conditions. Campaigns were begun “on a small scale in order to keep the cost of work and the cost of necessary changes within reasonable limits”; work was extended “slowly and only as results justified extension.”^{15 (p. 3)}

The diseases that were most widespread where Hydrick worked were

those that belong to the great group of intestinal diseases or filth borne diseases. In the ordinary living habits of the people of the rural areas, the pollution of surface soil and streams is far more common than the use of latrines. Of all the diseases which are spread by soil and water pollution, the worm diseases are not only the easiest to explain and demonstrate, but are also the most widespread over the East Indian Islands.^{15 (p. 4)}

Activities carried out concerning the prevention of soil and water pollution “were so organized that they could be used as a basis for building up small health services.”^{15 (p. 24)}

Hydrick’s program provided the most tangible evidence of how health work could be started. Given the central place of environmental sanitation and community collaboration in rural reconstruction, the Commission dealing with the latter could have profited from Hydrick’s experience by joining it with the other elements that make up rural reconstruction.

Unfortunately, Hydrick’s immediate supervisor, Wilbur Sawyer, thought badly of his activities. Sawyer judged it to be “a deviation from IHD [International Health Division] practice ... [which] used ignorant people, but with specialized training, to talk to ignorant people.” Sawyer was not in sympathy with a purely educational program like Hydrick’s and deprecated “Hydrick’s inability or lack of desire to do research and investigation.”²⁷ On the other hand, Sawyer was a “strong advocate” of the Central School that Lambert had helped develop.^{20 (p. 273)}

Hydrick’s book was favorably reviewed in the *AJPH*: “This book is much more than a delightful report of outstanding public health work; it is a phi-

losophy of public health expressed in terms of successful experience.”²⁸ Dorolle, who became WHO’s Deputy Director General in 1950, translated it into French in 1938 and also arranged for its translation into Spanish in 1944. In his extensive (14 pages) introductory commentary to the French version, Dorolle expressed his admiration for Hydrick’s book in multiple ways – its simplicity, the progressive manner in which Hydrick carried out his work, his experimental and realistic spirit, his meticulous attention to detail, and his concern for educating health workers, to name just a few. There is much to be learned in Hydrick’s school and much to be gained by following certain of his principles, concluded Dorolle.

Concluding comments

The word “tropical” is hardly to be found in the Bandoeng report. On the other hand, the agreed-upon agenda did serve the cause of horizontal approaches, even if it was not as strong as one might have wished. Also, as most of the issues discussed were primarily for the large participating Asian countries (China, India, and Japan), a specific focus on the tropics would have been out of place. It is only in the sections dealing with measures for combating diseases in rural areas that some reference is made to the specific needs of the tropics, as exemplified by the recommendation made by the malaria committee that “more investigation is required to develop practical mosquito-nets for rural areas in the tropics...,”²⁸ (p. 96) an issue that remains as current today as it was then!

Several months following the Bandoeng conference, Sawyer spoke on the importance of environment in the study of tropical diseases in his capacity as President of the American Academy of Tropical Medicine. After defining a tropical disease as “any disease as it behaves in a tropical environment” and tropical medicine as the “study of disease as it is found in the tropics” he went on to point out that

the concept of tropical medicine is inseparable from emphasis on tropical environment and its influence on the epidemiology and clinical mani-

*festations of any disease affecting man in the warm countries.*²⁹

Although the thrust of his talk was on improving the standards of teaching and research in schools and departments of tropical medicine in the temperate zone, he called for the “old provincial idea that tropical countries are essentially backward...” to give way to the “thought that the scientific centers of the tropics contain able workers who have much to give in experience, materials, and knowledge of the locality...”²⁹ (p. 13)

Sawyer’s talk was drawn upon by Dr. Alfred C. Reed, Professor of Tropical Medicine, University of California, San Francisco. In his 1939 President’s Address to the Annual Meeting of the American Society of Tropical Medicine, Reed envisioned the “future of tropical medicine” as being of necessity one which lay “within the same social frame as that of general medicine.” This meant that

*research and practice will needs adjust themselves to social health insurance, to new and more extensive governmental relationships and to a new concept of public health agencies, where research and propaganda (often miscalled education) will emphasize health and not disease, hygiene and not quarantine.*³⁰

None of this materialized for a variety of reasons, mostly linked with the onset of World War II quickly followed by that of the Cold War. Nevertheless, the above suggests that the colonial powers were not willing to explore tropical hygiene within the context of the LNHO, and, despite Sawyer’s eloquent call for more focus on the local, he and Fred Soper (another key player in tropical medicine), were pursuing control policies contrary to the more integrated ones being promoted by the LNHO. These same attitudes, i.e., those of the colonial powers and the Rockefeller Foundation, continued to dominate when the World Health Organization came into existence. They facilitated WHO engaging tropical diseases in a vertical manner, i.e. independent of the health services infrastructure.

To what degree the experiences of the LNHO and those of WHO shed light on the current situation deserves further study because today WHO and other global health agencies are combatting the so-called “*neglected*” tropical diseases! A look at the current WHO strategy for the prevention, control, elimination, and eradication of neglected tropical diseases reveals that many of the same types of interventions are being called for – preventive chemotherapy, intensified disease management, vector and intermediate host control, veterinary public health at the human-animal interface, and provision of safe water, sanitation and hygiene.³¹ What seems missing is any consideration of the human resources needed to implement such strategies or the many social and economic determinants whose importance was recognized at Bandoeng.

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