

INSTITUTE OF CURRENT WORLD AFFAIRS

CHGO-11
Science in Hong Kong II:
Science and Government.

4 Kotewall Road, 4/floor,
Hong Kong.

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Mr. R.H. Nolte,
Institute of Current World Affairs,
366 Madison Avenue,
New York 17, N.Y..

Dear Mr. Nolte,

The phenomenal increase in scientific endeavour during the past 20 or 30 years, ⁽¹⁾ and the importance of this endeavour in national affairs, has meant that governments are taking science more and more into account. Just specifically how governments take science into account varies from country to country. Some countries have formulated national science policies which relate the overall scientific activity to the goals and policies of the state. Other countries have accreted certain scientific responsibilities but have not yet given serious thought to overall planning. What of Hong Kong? How do the scientific activities of the Government here compare with other countries? What are its achievements and shortcomings? What are its plans?

To give a complete answer to these questions would require a much more detailed knowledge of science in other countries than I possess. However, it is possible to get a rough idea of where Hong Kong stands by taking a list ⁽ⁱⁱ⁾ of the type of scientific activities which are accepted by many governments, and using it as a framework in which to place Hong Kong's activities.

But before I do this, there are a few general remarks about Government scientists which should be made. Firstly, most of the senior scientists are British, with Chinese employed mainly at assistant scientific officer level. Many of the European senior scientists believe that only a few of the Chinese scientists (most of whom have University of Hong Kong degrees) have the initiative to fill successfully the more senior positions. The Hong Kong Civil List contains the names and positions of all Government employees. By counting those classified as scientific officers, fisheries

(1) A recent UNESCO publication pointed out that scientific activity, whether measured in numbers of scientists, papers published or money spent, is doubling every decade; and that of all scientists who have ever lived - 90% are alive today.

(ii) In this letter I have used the list published by A. King in his paper "Towards a National Science Policy", Impact, Volume XII, #3, 1962.

officers, forestry officers, and agricultural officers at assistant, ordinary, and senior levels, and assuming them all to be scientists, I found that there were 20 British scientists and 35 Chinese scientists employed by the Government. Secondly, I found Government scientists either totally unwilling to discuss science and government (as in the case of the Director of the Royal Observatory), or anxious that I should not repeat what they said, or at least not mention any names. This was in marked contrast to the University scientists and Government educators who freely discussed their work and problems.

THE SCIENTIFIC ACTIVITIES OF THE HONG KONG GOVERNMENT:

1. Science education

I have already discussed this topic in my last letter (CHGO-10). Suffice it to say that at the secondary school level Government schools provide education for only 7% of secondary school children, although another 15% go to schools which receive Government assistance. At the post-secondary level, the Hong Kong University, which is subsidized to an amount of 40% of its recurrent expenditures by Government grants, has only 16% of its students in the Science Faculty. However, if the recommended level of 40% science students at the New Chinese University is accepted, then the Government will be much more deeply committed to science, financially, than at any time in the past.

2. University research

University research in most countries is supported in one way or another by the state. In Hong Kong, Government support for university research is extremely small, amounting in 1960-61 to only HK \$41,500.

3. Support for special research activities

In this category are included those basic research activities which for various reasons (size, cost, etc.) are not done by the University. In Hong Kong they include the work of the Royal Observatory and the Fisheries Research Station.

The Royal Observatory was established in 1883 to make meteorological and magnetic observations and to provide a time service for the Colony and for shipping. It no longer makes magnetic observations but its work has been expanded in other directions. For example, it now operates six seismographs, makes weather forecasts, measures radioactivity, and issues time signals. Most of the efforts of the staff are taken up with routine work, although some research, mainly on typhoon problems, is done when time allows. One Observatory scientist said "We have only just got built up again after the War but we should be able to devote more time to research from now on"! There are no facilities for astronomical observations and another Government department, Urban Services, has taken the initiative in its proposal to build a planetarium.

The Fisheries Research Station was first started as a part of the University in 1952, but in 1960 it was transferred to the (then) newly formed Government Co-operative Development and Fisheries Department. The transfer involved complete reorganization and the physical removal of the establishment to new offices in Aberdeen, one of the main fishing towns. (The ex-director, F.D. Ommaney, has just published a delightfully written book "Fragrant Harbour" in which he reminisces about his life in Hong Kong). The work at the Fisheries Research Station appears to be well planned and should ultimately lead to valuable economic rewards. In fact, of all the scientific work I saw in Hong Kong, the work of the Fisheries Research Station impressed me the most. The work is primarily a biological and oceanographic study of the Continental Shelf within a radius of 500 miles of Hong Kong, and for this purpose the Station operates a 240 ton research trawler. Eventually they hope to extend their activities to include the whole of the South China Sea.

To appreciate the potential importance of their work it is necessary to realize that the fishing population of Hong Kong amounts to 83,000 people, and the amount of fish landed each year exceeds the annual catch for the whole of Australia. About a third of the fishing fleet is now motorized and is capable of going much further afield than they presently do. Part of the problem is the fishermen's lack of understanding of navigation techniques, and part lack of knowledge of fishing areas other than the traditional fishing grounds of sail days. The scientific survey now being made of the Continental shelf and South China Sea should answer this second problem and at the same time contribute valuable oceanographic and biological information about this little-known area. If they are successful and discover new fishing grounds then the whole fishing industry of Hong Kong could be greatly expanded.

4. Defense Research

No part of the Hong Kong budget appears to go into defense research. Certainly there are no defense research contracts with the University, and I know of no Government scientists working on defense problems. This is of course quite understandable. Hong Kong is a Colony and her defense and foreign policy are the responsibility of the British Government.

5. Research for Public Utilities

In this category King includes such activities as road research, forestry research, fire prevention studies, geological survey, and food and drug standards. Work in these activities in Hong Kong is either non-existent or at a very low level.

A Forestry Research section exists within the Forestry Division of the Government with prime objectives "To discover better tree species and afforestation techniques". But according to the 1961 Annual Report, "Work was carried out on a small scale".

Surely one of the most glaring omissions within the Government (although perhaps as a geophysicist I'm biased) is the complete lack of a geological survey. There is not even a single person with geological competence employed by the Government, and yet its activities include such different fields as mines, water, quarrying, road building and building site studies. A reconnaissance geological map of the Colony was made a number of years ago by a group of Canadian geologists, but since then the Government has relied on the University Professor of Geography for its geological advice.

There is also an absence of both road research and water research. The Government claims that anything they need in these subjects can best be supplied by contractors from outside the Colony.

Food and drug standards however, are just beginning to be taken seriously. Legislation was passed last year laying down minimum standards, and the Government chemists have been making check analyses. I was told that there were many instances of substandard products and that a great deal of effort is going to be required if the legislation is to be properly enforced.

6. Research of a general nature

King includes in this category measurements and maintenance of standards of length, weight, electricity and radioactivity. In Hong Kong there is no organization for making this type of measurement, and in particular there are no locally defined standards of length or mass. Some of the work of the Government chemists may be included in this section, for example, they have recently worked out new analysis methods for detecting small quantities of narcotics, and have studied corrosion problems.

7. Research for small unit-size industries

In many countries, governments have accepted responsibility for applied research for the benefit of those industries which, unit-wise, are too small to do their own. Agriculture and house construction are examples. The Hong Kong Government appears to be doing a very adequate job of agricultural research. It operates nine experimental stations which do specialized work on such diverse subjects as fruit and crop studies on high hill land, crops and livestock on dry land, market gardening, inland fisheries, and one station is exclusively devoted to a study of exotic pigs! There is also some research being done on plant pests and disease. I visited several of these experimental stations and although they are all small, and I am not competent to assess the scientific merits of their work, it did appear to be sensibly geared to the needs of the Colony.

The Fisheries Research group also operate a small pearl oyster research station which should ultimately benefit the small pearl industry here. The pearl companies are all run by extremely wealthy Hong Kong residents, one of whom is a member of the

Legislative Council, and I can't help wondering why it is necessary for Government to operate a research station for the benefit of these people who could so obviously afford to do their own research.

8. Encouragement of industrial research

Industrial research in many countries is encouraged by tax incentives, government grants to industrial research associations, and by the transmittal of scientific and technological information to industry.

In Hong Kong there are none of these government aids, and - as I will report in my next letter - virtually no industrial research is being carried out.

9. Medical Research

Apart from some research in the University, there is no other Government sponsored medical research work in Hong Kong, although there is talk of setting up a T.B. research group.

10. International Science Projects

In recent years there has been a proliferation of international science projects. They have been initiated either because of a common environmental interest, or because of the high cost of certain individual projects. The cost of these projects must of course be borne by the participant countries' governments. Hong Kong participated in the International Geophysical Year and contributes her meteorological and seismological data to international bodies. On paper there is a joint Fisheries research project with the Philippine Government, but so far there has not been a great deal of co-operation. There is also the possibility of participation in certain satellite observation studies, but this is more likely to involve University scientists, and the cost will be borne by the British Government and not the Hong Kong Government.

The above appraisal of the Hong Kong Government's activities in science reveals some useful accomplishments; many gaps; a lack of co-ordination between different departments; and, with a few exceptions, little thought for the future. Government scientists were almost unanimous in commenting that there is a lack of understanding of the problems of scientific work at top government levels which often leads to delays and frustrations. However, there are grounds for believing that the situation may improve. Just over a year ago a group of senior Government and University scientists decided that science in Hong Kong could best be advanced by forming a Science Advisory Board which would have similar functions to similar boards in other countries. It is not easy to find out exactly what went on behind the scenes, but it seems that the top Government officials did not want to be advised and turned down

the idea of a science advisory board. They agreed however, to the formation of a Science Co-ordination Committee with rather limited terms of reference and with specific instructions not to cause additional expenditures. The Colonial Secretary appointed the Director of the Royal Observatory to be Chairman, and the Committee held its first meeting about two months ago. It is composed entirely of Government and University scientists and has some very competent men (as well as some of more dubious quality). Even if they stay strictly within their terms of reference, they could still accomplish some valuable work. For example they have already begun to compile an inventory of scientists and scientific facilities in Hong Kong. But to be really effective in formulating a science policy for the Hong Kong Government their terms of reference must be expanded.

Yours sincerely,

C.H.G. Oldham

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