Professional structure
in South East Asia

Errata
Page ix para 3 line 7 Miss Vivien Pannish should read Miss Vivien Ponniah
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Development Studies Centre
Monograph no. 5

Professional structure in South East Asia

T.H. Silcock, editor

Series editor E.K. Fisk

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Canberra 1977
The research for this monograph was financed by the World Bank which has issued a summary of the findings as a working paper. Professionals in four different professions were interviewed in 1972 by members of the team, each working in a different country. The professions covered were medicine, accountancy, civil engineering and agricultural extension. The countries fully covered were Thailand, the Philippines and Taiwan; work was also done in Indonesia, Malaysia and Singapore, though full country reports on these are not included. The main topic considered was the degree of adaptation of professional structures to local conditions in the period since World War II. Training, professional discipline and structure have adapted relatively little and the adaptations of practice are mainly irregular and unpublicised. The original hypothesis was that this was mainly the result of rigidities fostered by professional organizations. The data, however, suggest that the much greater personal mobility of professionals than of most other inhabitants of Southeast Asia has accentuated formal similarities of training and structure, whether or not professional organizations are strong. Economic forces working through the aspirations of individuals appear to have been more important than pressure groups or public policy in bringing this about.
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Preface

This study was undertaken with financial assistance from the World Bank by a team recruited by the editor. The field work was undertaken in 1972 and mainly written up in that year and early in 1973. Since the team was then dispersed no attempt has been made to revise material: only ordinary editorial work has been undertaken.

After considerable discussion the World Bank decided to issue in 1975 a summary jointly prepared by Miss Rachel Weaving and the editor. This survey was produced separately in the United States, and is available from the World Bank.

The participants in the full project were Professor H.D. Evers, then Professor of Sociology in the University of Singapore; Dr Ledivina Cariño, Associate Professor and Director of Research in the College of Public Administration of the University of the Philippines; Mr Jen-jen Liu, Agricultural Economist of the Institute of Economics of Academia Sinica, Taiwan; Miss Vivien Pannis, Graduate Assistant in Economics of the University of Malaya; Mr Daniel Regan, Sociologist of Yale University and Universiti Kebangsaan Malaysia; and Dr Johannes Moeliono of the Borromeus Hospital in Bandung, Indonesia, who was unable to complete the project. At the time the project began, the editor, Emeritus Professor T.H. Silcock, was a Senior Research Fellow on the staff of the Australian National University, but was on a period of no-pay leave acting as editor of the World Bank's occasional papers and country studies.

It is the editor's pleasant duty to thank those who made the research possible. First, our thanks must go to the World Bank and its research committee for not merely financing the project, but scrutinizing and improving it before it began. In particular, our thanks must be expressed to Mr E.K. Hawkins who helped the project in many ways within the World Bank organization and to Mr J. Simmons, who patiently served as our liaison officer with the Bank through all the vicissitudes of the field work and writing up.
We thank also institutions and individuals who helped our research workers in the field: Professor Carlos P. Ramos and Dr Paul P. Guzman and the College of Public Administration of the University of the Philippines for institutional support and Mrs Gloria-Mauleon-de Guzman and Ma. Concepcion Parroco-Alfiler for assistance to Dr Cariño; the Institute of Economics of Academia Sílica for institutional support of Mr Liu; and the Faculty of Economics of Thammasat University, Dean Vinyu Vichit-Vadakan and Professor Laurence Stifel for facilities and administrative help to the editor.

Next we must thank all those, too numerous to thank individually, who helped, some by briefing us at the Singapore conference, and others far more numerous by giving us time from their busy professional lives to answer questions about the organization and working of their profession. Finally, we must thank The Australian National University for institutional support, Mr P.J. Grimshaw who managed all the intricacies of approval and international finance with skill and good humour, and Miss Marcia Milnes who skilfully and cheerfully typed many preliminary drafts of chapters and ultimately the entire manuscript, and whose thoroughness in matters of detail saved many hours of editorial work and eliminated serious errors that might otherwise have crept into the text.
Currencies in 1972

In general, tables involving inter-currency comparisons have been avoided where possible, and comparisons in the text have been expressed in a way that both indicates that conversions must be very approximate and also shows the purpose for which the comparison is made (e.g. as a sign of an inducement to migrate). The par values of the currencies given in the text, in 1972, were as shown below expressed in local currencies per US dollar:

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<th>Country</th>
<th>Currency</th>
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<tr>
<td>Taiwan</td>
<td>New Taiwan Dollar</td>
<td>NT$ 40.00</td>
</tr>
<tr>
<td>Philippines</td>
<td>Peso</td>
<td>P 6.67</td>
</tr>
<tr>
<td>Thailand</td>
<td>Baht</td>
<td>Bt 20.80</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Malaysian Dollar (or Ringgit)</td>
<td>M$ 2.82</td>
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Chapter 1

Scope and methods
T.H. Silcock

Theme of the study

This study investigates one significant part of the problem of diffusing new techniques to subsistence farmers, still probably the majority of the human race. Many of the techniques by which people in the less-developed countries produce their own supplies have been well adapted over many generations to the knowledge available to them and the normal conditions that prevail in their countries. However, in the years since these techniques were developed, much has been learned not only about soil and climate, the genetic constitution of plants and animals, and the methods of controlling pests, but also about health practices, transport equipment, record-keeping and many other relevant branches of knowledge. Often the detailed knowledge that would improve productivity and expectation of life in the actual conditions where a particular farmer works is not yet available to anyone, but the way in which this knowledge could be derived is familiar to many, and it is certainly possible for methods based on traditional knowledge to be made far more productive by the use of this capacity to find out.

Anyone who considered the problem without much previous thought would probably jump to the conclusion that the greatest benefit of modern knowledge would be where present methods are most lacking in that knowledge. It seems obvious that productivity in such situations should be able to be improved many times over by readily available knowledge.

It is one of the paradoxes of development that those who are familiar with the subject accept it almost as a matter of course that the initial stages, the overcoming of almost total ignorance of modern scientific methods, are the most difficult parts of the development process. If proof were needed, Chenery's comparative studies (e.g. Chenery, 1971)
have made it clear that the addition to growth from technical knowledge alone is very small until countries reach a stage where agricultural output has fallen to about one third of the total national product. This seems to indicate that barriers to the diffusion of knowledge are immensely important in holding up the growth of income for the greater part of the human race.

It has often been assumed that these barriers are mainly cultural. Custom, often based on many centuries of experience, guides the response to seasons and crises, the maintenance of any rural community's tools, stock and seeds, and the methods of co-operation. Individuals feel secure in this custom, and they are not used to embodying new knowledge in their ways of doing things. Even if one individual wishes to change in response to new knowledge, social structures of co-operation make it difficult for any but the leaders to generate co-ordinated change, and the leaders' position of leadership may depend - or be believed to depend - on not encouraging change.

Explanations of this kind might be adequate to account for some slowness in basic structural changes; but in any culture there are some areas in which the individual is left free to strive for his own personal goals, and in these there would be considerable scope for rational innovative behaviour, if people could be trained to find out and transmit the necessary information. These small modifications would in turn change the environment.

An alternative explanation, to which the co-ordinator of this study at first inclined, was that the main barriers were to be found in the professional structures which controlled the transmission of knowledge. There was a good deal of evidence that the machinery for the control of professional standards was dominated by professionals in richer countries and was used to enforce inappropriate qualifications and inappropriate training in less developed countries.

For this reason, much of the emphasis in the study has been on professional structure, standards, discipline and the way in which professions in the countries studied are related to professions elsewhere. However, quite early in the planning of the study it became clear that the strength of professional associations in influencing training and discipline varied considerably, but that other uniformities were suggested by the data. There is, indeed, a link
between professional structure and an overseas pattern often very inappropriate to the needs of the local community; but the history of professional associations, and their current roles, strongly suggest that they are not of critical importance. The pressures which impede the diffusion of knowledge and skills appear to be there whether the professional associations are strong or weak; though the way these pressures operate can be affected by the strength or weakness of professional associations, and by the form that they take.

The revised hypothesis rests on the superior mobility of educated people between different national states. The regulation of professions within particular nation-states has to be undertaken by their governments, and the governments often do much of the training of professions, some of it financed by international aid. However, the policy of the governments of less developed countries is constrained by the fact that qualified professionals are mobile. After a relatively short period of scarcity of professionals of any kind, a situation soon develops in which the dependance of income on mobility becomes very obvious, and training and all the apparatus of professional discipline become heavily influenced by the desire for mobility of all those being trained.

It appears to be the pervasive influence of individual desire for mobility, based on very great financial inducements, which produces both a type of training and a professional structure that inhibits the finding out and the transmitting of relevant new techniques to those who most need them.

In so far as governments are responsive to popular demands for better services and more information about modern techniques, in the more remote and depressed areas, they will try to keep professional costs down, and to employ professionals and sub-professionals in rural areas. However, it will be difficult to design either training or professional structure to achieve this objective because of the pressure by individuals for greater mobility, out of the rural areas and into professional strata where migration is possible.

Design of the survey

The main part of this study is a survey of four professions in three countries in Southeast Asia during the
period since World War II, and of their current situation in the early nineteen-seventies. Originally it was planned that the focus would be on the role that professional associations played, and on their overseas connections. During the planning phase it became apparent that other overseas connections, in addition to those of the professional associations, would need to be studied: 'brain drain' problems, influences on training, and employment by international firms, are examples.

Of course such international connections are necessary. It would be absurd for even the largest of the economically less-developed countries to attempt to work out all the information needed from first principles or to design its own research and training in every field without using international resources. However, this is an area in which a large number of independent organisations in different nation-states are all generating pressures on individuals to move and to change, for many conflicting reasons that are not, in general, co-ordinated either by market mechanisms or by any synthesis of policy. The result does not appear to conform to anyone's intentions, and the interaction between the different decision-making bodies has received far too little attention.

One of the main difficulties in this study has been that of defining precisely the contribution of professions to economic development. It has been necessary to develop, in Chapter 7, something of an economic theory of professional structure. This serves to indicate how the pattern of professionalism in a system of different sovereign states produces situations that further the interests neither of the separate national communities nor of the international community, whether those interests are interpreted in political (or diplomatic) terms or in terms of professional goals.

Identifying the effects of differential mobility suggests ways of dealing with it, but it will not be an easy problem to tackle. There are difficulties both in co-operation to limit mobility and in co-operation to adapt to its effects by adjusting professional structures. Moreover professional associations, universities and governments are jealous of their autonomy, so that even if there are agreed aims, co-ordination of policies may not be easy. Nevertheless some of the examples considered here may show both the need to co-operate in designing training policies and migration
controls, and some of the results that such co-operation might achieve.

An attempt was made to achieve some co-ordination of the different country studies by conferences at the beginning and end of the period of fieldwork, by the preparation of agreed guidelines both as to the sources of information to be used and the type of statistical and descriptive material to be collected, and by the presentation, in the present chapter, part of Chapter 2, and Chapter 7, of sections to co-ordinate the material by professions and to interpret it.

Within the agreed guidelines each writer interpreted the material in his own way: it should be borne in mind that the writers of the Taiwan and Philippines chapters are citizens of those countries, while the Thai chapter is written by a foreigner. From the time of the first conference — at which Professor H.D. Evers of Singapore joined us, though his own material had already been prepared and was later incorporated because of its relevance to our study — it became clear that we should need to go beyond the original intention of studying the development of a profession over some twenty years, changes in its professional organizations, discipline and training, each profession's present structure of geographical distribution, income-pattern and relation with non-professionals, and the impact of this structure on the delivery, especially, of services relevant to economic growth. It had already become apparent that several other foreign impacts such as migration, overseas training, and selection by overseas requirements, were at least as important in affecting the relevance of the service delivered to the public as was the changing professional structure itself.

In general the statistics collected were too unreliable, and understanding of them was too dependent on idiosyncratic conditions in each country, for reliable inter-country comparisons to be made except in a few isolated instances. Different writers were compelled by the nature of the data available to take different approaches to such matters as total membership of a profession, urban-rural divisions, income, etc., and comparative tables have therefore been avoided.
Choice of professions and countries

The original professions chosen were not quite the same as those now selected. The original set was medicine, accountancy, engineering (mainly mechanical) and law. The main change has been the elimination of law and the substitution of agricultural extension. This reflects partly some change in the concept as a result of preliminary contacts with the professions. The original emphasis was on the structure of the professions and the effects that this had on their capacity to adapt. All four of the professions originally considered had a good deal of professional structure with interesting differences between the different countries. The profession of law, however, has relatively little relation to the diffusion of modern techniques to peasants and those newly transferred from peasant status.

Largely as a result of discussions with the World Bank, it was decided to investigate how far questions of professional status, overseas contacts, training and discipline had similar effects in making agricultural extension unadaptable as they had in professions with a more definite professional structure.

It may be claimed, on the basis of the results produced, that the four professions eventually chosen - medicine, accountancy, civil engineering and agricultural extension - give between them a comprehensive picture of the constraints that limit that part of development which could spring from new knowledge.

Medicine is a profession with mixed effects on development. Undoubtedly an early effect of improved medical knowledge is increased population growth, which is inimical to economic development (except in the crude sense of growth of gross national product). However, improved health is not only a direct economic benefit, but also improves productivity. The main reason for choosing medicine, however, is that it throws into relief very clearly the influence both of differential mobility and of strong professional organization. Therefore, though the effects of distortions of professional structure and codes on overall economic development are rather complex, a study of the different medical patterns enables us to see clearly that the effects of differential mobility are more significant than those of a strong medical organization.
Accounting and civil engineering both play significant roles in the process of development, and both have a marked cultural content as well as an influence on the diffusion of scientific knowledge. It is not possible in either completely to separate the technique that has grown out of the scientific approach from the cultural role that the profession plays. Accounting is relevant to the growth of large impersonal institutions, the development of orderly government and taxation, the growth of a capital market; but it is also relevant to the greater efficiency of farming and small business, and to the protection of the newly literate, in danger of losing their assets and livelihood to the commercially fluent, in a period of rapid change. We can attempt to study how far the profession has been successful in adjusting to these responsibilities, in a different environment from that of the wealthy industrialized countries. In nearly all such countries a profession, with strong traditions of integrity and (in one form or another) independence, stands at the apex of a highly sophisticated structure of training and skills. This study has concentrated mainly on the profession itself; but because of the profession's influence on the organization of (and the training within) a system much wider than itself, it has been necessary to give some attention to this aspect of the profession's total role. It can be argued that in most poor countries this is where the profession could make its maximum contribution.

The engineering profession also stands at the apex of a huge system of training in technical and mechanical skills in all industrial countries; but it is the whole engineering profession which plays this role, and civil engineering is only one part of it. The main reason for the switch to civil engineering was the fact that the World Bank, which largely financed the study, has rather more involvement with the civil engineering profession than with that of mechanical engineering. In the negotiations it was also explained that the adaptation of civil engineering to fundamentally different conditions of availability of capital and skill was far less complicated by highly difficult technical problems than that of mechanical engineering. However, in the field we encountered a different problem, which increases the significance of this profession but at the same time adds to the difficulty of studying it. This is the extent of its involvement in patronage and the political process. For reasons discussed more fully in Chapter 7, most of this patronage is secret most of the time, in the sense that detail cannot be obtained; but anyone who investigates the
profession finds that the possibility of personal gain from public contracts influences decisions throughout the economy, and is far from being confined to a small, semi-criminal fringe. In these conditions, if standards of safety, maintenance, etc. are to be kept at reasonable levels it is necessary that professional training must be realistic and adapted to local conditions and professional commitment be strong. For reasons largely related to differential mobility, professional associations and professional training do not appear to achieve this. For similar reasons training of local professionals is not well adapted to helping them make the best use of their local advantages in small firms competing with international companies.

Agricultural extension is the least professional of the professions studied, but the one most involved with development of new skills among subsistence farmers, or farmers newly taking up farming for a market. Studying this profession alongside the other professions has, however, proved to be very useful. One thing in particular that this parallelism enables us to see is that, in so far as an international professional discipline exists, it tends to impose very similar distorting influences whether there is a local professional structure or not; but in agricultural extension linguistic barriers and other natural insulators do tend in some instances to mitigate these pressures.

Originally - as has been mentioned - the study had been planned to focus on the structure of the professions themselves and the effects of professional institutions in hampering the diffusion of knowledge relevant to economic development. There had been good reasons for the assumption that the role of professional associations was critical. In Singapore, when the initiator of the project was working in the University of Malaya there, the attempt to introduce local training for professions was constantly frustrated by opposition from professional bodies, in medicine, law, engineering, accountancy and other professions; and the heart of such opposition, expressed or implied, was that maintenance of international standards was essential, and that this would suffer if members of local populations were trained locally, without the cultural assimilation that could be achieved only by study in the United Kingdom or (failing that) in some other country that could be regarded as an acceptable substitute.
While the professors setting up the university naturally did not accept the view that training overseas was necessary to achieve professional commitment, they were impressed by the keenness of medical students, both in Singapore and in Kuala Lumpur, to maintain the recognition of their degree by the General Medical Council of the United Kingdom, even when the excitement of independence was at its height. Later, it was learned that a still more dramatic illustration of the prestige of the General Medical Council's recognition was a riot by students in the University of Mandalay when the Burmese Government proposed to establish a medical course, some twelve years after independence, which would not be recognized by the General Medical Council.

It was obvious that few of these doctors in Singapore, Malaysia or Burma would actually practise in the United Kingdom, yet clearly the demonstration that they were qualified to do so was a valuable weapon to the young doctors. Since overseas recognition could not count for very much with the local patients, the weapon was clearly intended to be used against their own government to secure the status of an adequate substitute for doctors recruited abroad.

This suggested very strongly that it was not mainly pressure from overseas that dictated that local students should take degrees as similar as possible to those in more developed countries. Rather, it seemed to be a pressure dictated by professional structure itself.

With hindsight, it seems that more might have been learnt from the actual experience of university teaching: it was soon found in Singapore that one of the best ways of making courses relevant was involvement of students in research activities at a much earlier stage than would have been acceptable in industrial countries at the time. The process began with the Singapore Social Survey (Singapore, Department of Social Welfare, 1947) when (as a result of World War II) Raffles College had relatively mature students available to help as interviewers for the survey, which was being conducted by the government in consultation with the college staff.

The benefit which both the government and the students derived from this led to frequent use of second-year students as interviewers and this gradually became a recognised part of the curriculum in the University of Malaya. It was also found that seminars, particularly on local topics, where students in different years undertook tasks appropriate to
their skills, proved popular and relatively productive.

It was never felt to be possible to give such work a very large part in the curriculum because of the involvement of the whole staff in the problem of recognition, which meant that students had to be mainly taught what was being taught elsewhere; but the staff were probably all aware that the recognition they wanted for their students was not merely certification that they were as good for local graduate work as the foreigners now doing it - which was probably all the students wanted - but recognition as people trained in a university equal to those overseas. For it was on this that their own academic reputation - in an all-too-imminent return to their own countries - would depend. Whether academic structure had required it or not, the quest for mobility, actual or implicit, was already a powerful influence on them as it would be later on their successors.

The initial emphasis on professional institutions had some influence on the choice of countries to be studied, as well as on the choice of professions. However, the main reasons for choosing Southeast Asia was convenience and economy in organizing the project from Canberra. Originally it was planned as a personal project involving field work in three countries - Malaysia, Thailand and the Philippines - in all of which the co-ordinator had done some previous work. Later it was extended, with finance from the World Bank, to cover six countries. In addition to the original three, work was to be done on Singapore, Taiwan and Indonesia, and country chapters to be produced on Thailand, the Philippines, Taiwan, Indonesia and Malaysia, with some related material on Malaysia from Singapore. The aim in extending the project was to secure greater variety both in economic structure and in the professional institutions inherited from the past.

Although only three country chapters were ultimately completed, some of the material collected in the other countries has been used, mainly in Chapter 7.

Southeast Asia was chosen, as mentioned above, mainly for reasons of economy in operation, and the design and organization of the project were influenced by this historical fact. It must, however, be acknowledged that the area had much greater justification in terms of the original plan of investigation than in terms of the broader theoretical approach which was adopted as a result of some preliminary results.
Southeast Asia contains several countries with very similar economies but very different professional structures, as a result of their different experiences during the period of colonial control. It was hoped that statistical indicators could be developed which would indicate clearly the impact of professional associations and of the governmental institutions used to control professions. In the event, it appeared that the statistics of membership, incomes and other measurements of professional structure were not comparable and that some of the relevant differences (e.g. between the Philippines and Taiwan in language, or between Thailand and Malaysia in educational structure) suggested that a descriptive survey of a group of countries with sharper contrasts in respect of size, GNP per head, language structure and perhaps proximity to a wealthy professional market might have illustrated better the effects of differential personal mobility, and the desire of individuals to maximize it, in imposing constraints on professional policy.

As a comparative study, therefore, this should be treated as a relatively small-scale and inexpensive pilot study illustrating some of the effects of differences of structure on the options available in delivering professional services. It is to be hoped that it may stimulate other studies, both more comprehensive and better able to bring out all the relevant differences.
Chapter 2

The role of professionals in the development in Southeast Asia

H. D. Evers and T. H. Silcock

Professionals as agents of modernization: their non-professional role

Hundreds of studies, both theoretical and empirical, attest a long-standing academic interest in professionals. The earlier literature emphasized two fundamental questions, the position of professionals in the class structure, and the uniqueness of professional occupations in industrial society (Johnson 1972:10). Recent studies, as indicated in the title of Wilbert E. Moore's 1970 summary, *The Professions, Roles and Rules*, have a narrower focus: e.g. professional ethics and socialization, relations with clients and peers, professional organizations, semi-professionals and the position of professionals in large-scale organizations are topics commonly discussed.

In discussing their promotion of development, we attend here first to their non-professional role, a role largely neglected because most studies specifically stress the exclusiveness of the vocation. This effectively removes 'extra-curricular activities' from the attention of the social scientist.

Though studies on the social background of parliamentarians and politicians reiterate that professionals are the pre-eminent occupational category, major studies of professionals hardly ever discuss their political role. This chapter therefore attends first to this neglected area of the power of professionals, its rise and decline, and professionals' changing role in development and modernization.1

1 Vollmer and Mills (1966:47) have expressed their concern by pointing out that 'we need more study - especially comparative study - of the relation of professionalization to society and social change'.

12
(a) Definition of professionalism and modernization.
Scores of authors have engaged in the hairsplitting activity
of creating a definition of the professional (Cogan, 1955).
Notwithstanding certain differences in emphasis, much agree-
ment has been reached on the basic defining traits of at
least the core, or 'classical', professions, like law,
medicine, religion and engineering. Wilbert E. Moore, for
instance, identifies the professional by the following
characteristics or traits (Moore, 1970:5-16): The profes-
sonal practices a full-time occupation, he is committed to
a calling, he is identified with his peers, often in
formalized organizations, he possesses useful knowledge and
skills as a result of exceptionally long specialized training
or education, he is rather committed to rules of competence,
conscientious performance and service and he enjoys autonomy
due to a high degree of technical specialization.

Talcott Parsons stresses the functionally specific
technical competence of professionals (Parsons, 1954:38) and
the primacy of the values of cognitive rationality (Parsons,
1968:539) in his definition. These definitions largely
overlap with definitions of 'modern man' given in studies
on modernization in developing societies. 'Modern man' has
faith in science and technology, believes in man's domination
of the environment (efficacy), plans his life and is punctual,
regular and orderly in organizing his affairs (Inkeles, 1966:
138-52). He is an individualist, reads the newspapers,
prefers to live in urban areas and makes his way up the
social ladder through his own achievement, starting off with
a good education (Kahl, 1968). Education is indeed the most
powerful factor in making man modern (Inkeles, 1969-70,
208-25); it is 'the key that unlocks the door to modern-
ization' (Coleman, 1965:3) as well as to a professional
career.

We have to conclude that the professional appears to be
society's most modern man, the very expression of modern-
ization. According to William Goode a developing 'industrial-
izing society is a professionalizing society' (Goode, 1960:
902). Neither capitalist nor proletariat but the professional
is seen as the major agent of social change and modernization.

2This paper is specifically concerned with these core pro-
fessions and not with the process of professionalization.
For a criticism of the attempt to use 'trait models' and the
functional approach to the study of professions, see
In Talcott Parsons' view 'the professional complex, though obviously still incomplete in its development, has already become the most important single component in the structure of modern societies. It has displaced first the "state", in the relatively early modern sense of that term, and, more recently, the "capitalistic" organization of the economy. The massive emergence of the professional complex, not the special status of capitalistic or socialistic modes of organization, is the crucial structural development in twentieth-century society.' (Parsons, 1968:545).

(b) Rise of the professional. Parsons' view contradicts the Marxist insistence on the revolutionary role of the industrial working class. While Marxists would stress the dialectics of class conflict and the emergence of new dominant classes in each historical stage of social development, Parsonsians and other Neo-evolutionists would emphasize the emergence and growth of functionally important social roles. The first occupational role to emerge in the process of social differentiation of preliterate society is the role of a 'professional' or a 'proto-professional' (Moore, 1970:7, 23-9). Starting from priests and curers, rainmakers and soothsayers, shamans and medicine men, the modern professional complex differentiates in its victorious march to pre-eminence. Usurping the trappings of a professional occupation has become a means of establishing the claim for upward group mobility, very much in line with the process of 'Sanskritization' in Indian society through which lower castes attempt to enhance their status.

This claim seems to be supported by the increasing number, and share in the work-force, of occupations elevated to the status of professions, the 'technical, professional and related workers' of the census takers.

(c) Contribution to development. From the argument so far we could draw the following conclusions:

In the development of societies professional roles emerged fairly early, are now widespread if not all-pervasive, and among the most differentiated of roles: modernization theorists would allot professionals high scores on their modernization scales. If then professionals are, in evolutionary terms, the most developed species, if they are the most modernized of men, the latest model in modern society, they should also be the spearhead of development, agents of
change (social, political and cultural), innovators (see Mary Hodgkin, 1972) and active modernizers.

In many respects they indeed are all these things, at certain times and in certain circumstances. In Southeast Asia they have played a revolutionary modernizing role, and some are still doing so. On the other hand as will be shown below, an increasing development of their most outstanding characteristic, their professional, functionally specific competence, reduces their effectiveness in inducing political change and modernization. The most modernized group of a society can thus assume a position far removed from what Parsons has called 'the most important single component in the structure of modern societies' (Parsons, 1968:545).

This issue is not just one of theoretical significance. The belief in the strategic importance of professionals for development has led to an emphasis on higher education and on the wholesale deployment of professional experts in Third World Countries. The results have often been rather disastrous. The following is then an attempt to analyze some of the issues connected with the role of professionals in the social and political development of Southeast Asian societies.

Free professionals in political development in Southeast Asia

(a) Professionals and parties. If we consider first the professionals' direct access to political power their position in terms of social structure seems weak. The working class in industrial society or the peasants in pre-industrial society have at least the power of large numbers. Professionals are few. Bureaucrats and the military have large organizations as ready-made instruments of power; professionals work alone or in small groups. Landlords and industrialists command wealth and resources; professionals have to rely on salaries or the contributions of clients. They have, as free professionals, little or no command over others and therefore, as professionals alone, do not qualify for inclusion in an upper class as defined by Dahrendorf (1959). The relatively important position professionals nevertheless achieved in the political life of early and late developing societies appears to be due to their capacity to operate through professional associations and, still more, through political parties. Whether political parties were indeed invented by professionals or not is immaterial...
(in fact the history of British parliamentary democracy shows that they were not). What is essential is that professionals have made enthusiastic use of political parties and have at crucial times in the development of modern society dominated their activities. In other words, political parties have at times become the organizational base of the power of professionals. We may even venture further and claim that, as professionals are essential in running competing political parties and they in turn are essential for the functioning of democratic political systems, the emergence of a sufficiently large group of professionals was an essential precondition for the establishment and maintenance of a multi-party democracy.3

But the political power of professionals is not merely a matter of their leadership but of their relative position versus other potential power elites. An early developed large government bureaucracy has not only the chance to rule a country and destroy all opposition but also to introduce an authoritarian political culture that, once established, is difficult to change. The sequence of the emergence of various groups is therefore of pre-eminent importance.

Professionals without a power structure of their own have an intrinsic interest in instituting and maintaining a multi-party system which they can manage as a system for the interaction of political interests. An army, a bureaucracy, a landed class can manage to rule alone, if necessary. Here our argument ties in with or supplements Barrington Moore's study on the social origins of dictatorship and democracy (Moore, 1966). Moore contends that after a revolutionary break with the past and the destruction of the traditional peasantry 'a vigorous and independent class of town dwellers has been an indispensable element in the growth of parliamentary democracy. No bourgeois, no democracy.' (Moore, 1966:418). The actual leaders and organizers of political life after the European bourgeois revolutions as well as the anticolonial struggle in colonial territories at a much later date were primarily professionals. They became, indeed, the major political activists of the bourgeois class

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3 This aspect of professional development has apparently induced T.H. Marshall to suggest, on the eve of World War II that the role of professions was to 'find for the sick and suffering democracies a peaceful solution of their problems' (Marshall, 1963:170, reprinted).
(Ben-David, 1963). To the conditions mentioned by Barrington Moore for the development of parliamentary democracy may thus be added the earlier emergence of a group of professionals than of these other occupational groups.

(b) Role in independence movements. In South and Southeast Asia we find professionals involved in struggles for national independence. Practically all anti-colonial nationalist (or bourgeois) revolutions were led by professionals: Rizal of the Philippines was a doctor, Sukarno of Indonesia an engineer, Gandhi of India a lawyer. The most significant exceptions are leaders of communist revolutions: neither Mao Tse-tung nor Ho Chi Minh was a professional. The most relevant reasons for the prominence of professionals in independence movements were probably the following:

(i) Professionals at that time were not numerous, and there were only a few rather weak professional associations. Professionals could direct their attention to national goals but hardly to those of their 'profession' or professional association.

(ii) The relatively low degree of professionalization also meant limited specialization. As has been argued elsewhere in greater detail (see Chapter 3, and also Evers and Regan, 1973) increasing specialization reduces the chance of involvement in social and political affairs.

(iii) Professionals were the most westernized members of the national bourgeoisie. They could thus assume a broker function but their status and loyalties differed from those of their professional colleagues and political masters. European professionals were well aware that in Europe their elite position depended on popular acceptance of their objective function, while in a colonial situation it depended on, and helped to reinforce, the position of an alien ruling group. Both European and locally-born professionals saw the requirements of their task as something determined by objective necessity; but because of their different roles in the transmission, the Europeans tended to overestimate, and the local professionals to underestimate, the difficulty of persuading a local population to accept as necessary the values, and the selection, training and discipline they implied. This led to political conflicts in which the local professionals helped to articulate nationalist sentiments in terms of objective rationality and non-discrimination.
(iv) Professionals who participated were recognized as a legitimate elite during the independence struggles, since, by and large, they were not—as local civil servants and often aristocrats were—directly tied in with the colonial administration.

A recent Japanese study of Indonesian political elites (Yasunaka, 1970) illustrates the importance of professionals and university graduates for 'national liberation' revolutions: during the independence war (1945-50) 84.3 per cent of the first Indonesian cabinet had a university education including 12.9 per cent who graduated from professional (e.g. medical or legal) schools. For comparison the German political elite in 1925 contained only 56 per cent university graduates (Zapf, 1965). Further examples could easily be added as professionals were prominent throughout the new nations of Asia and Africa in leading anti-colonial movements, forming political parties and setting up parliamentary democracies.

(c) Breakdown of democratic regimes. A decisive change, however, took place during the 1960s. In most countries the role of professionals declined, and parliamentary democracies broke down and were replaced by military dictatorships or authoritarian one-party systems. In Indonesia, for example, the percentage of university graduates in successive Indonesian cabinets declined from 84.3 per cent in 1945-50 to 70.4 per cent in 1950-57, and 66.1 per cent in 1957-64. By that time the fledgling parliamentary system had given way to the system of 'guided democracy'. In South Vietnam the military had replaced the landlord-professional elite by 1973; in the Philippines the active political scene in which professionals had played such an important role, had been put into the strait-jacket of Marcos' presidential dictatorship by 1972.

Why has the political modernizing role of professionals declined when their numbers have increased considerably throughout the world? The growing significance of the professional complex in the labour force of developing countries cannot be denied, but why has their change-producing and revolutionary role more or less disappeared?
Professional withdrawal from leadership

(a) Decline of the political role. There is overwhelming evidence that professionals have withdrawn, voluntarily or involuntarily, from active politics or at least have ceased to be political innovators working to change their countries' social and political systems. We can offer no one theoretically consistent explanation for this complex process, but only a number of tentative suggestions.

(i) In colonial society professionals constituted the most modernized section of the local population: most had received an overseas education in the 'mother country', and on return remained - unlike civil servants and army personnel - relatively independent of direct colonial control. These latter groups were even smaller in most countries, as all strategic higher positions were manned by expatriates. Phenomenal growth of bureaucracies and military establishments was, in the 1950s, considered essential for further social and political development, and bureaucrats and military officers generally overtook professionals in numbers and importance. Parliamentary democracy, however, probably had the best chance to survive in countries where professionals were relatively strong and had taken the lead in building strong political party organizations. The 'sequential patterns' of the growth of occupational groups is important: the first groups to develop could strengthen their position by creating both organizational strength and political culture.

(ii) The strategy of training professionals, as the key to development, had its maximum impact in the years after World War II. In deference to the new nationalism, 'politics' were studiously avoided. States 'decided for themselves' how leaders were chosen, and these leaders chose the goals: trained people were needed to achieve them more rationally. Formal schooling was emphasised, European or American type universities set up, and experts and professionals trained abroad. University education abroad and at home produced the 'late development effect' analysed by Ronald Dore (1973). Postgraduate and professional training, in Europe, North America and Australia, had become more professionalized, and professional tasks more 'functionally specific'. Until the late 1960s the student world view had become increasingly technical and, as Marcuse (1968) has put it, one-dimensional. Professionals thus trained for a specialized, complex capitalist economy returned, often to
frustration in the enclaves of development in their underdeveloped peasant societies, but were still oriented in their professional - and often their political and social - attitudes, to the countries of their higher education. Their social and cultural distance from the lives and problems of peasants was also probably greater than that of the older generation of politically active professionals with their more general, less specialized education.

(iii) Fewer professionals are now independent or 'free' professionals. In industrialized societies many are incorporated into large scale organizations by which they are disciplined or which they, in exceptional cases, even dominate but then not as professionals but as organization men. In developing countries professionals have become more and more incorporated in government bureaucracies. Thus, in both industrialized and less developed countries, professionals have, in the terminology of Terence Johnson (1972:65-74) merged into a system of 'corporate patronage' which makes them unfit for independent political action and amenable to the political aims of governments or corporations.4

(b) Technocratic ideology. The list of reasons for the decline of the political role of professionals could probably be expanded and combined into a more systematic theoretical framework. We have stressed the impact of increasing professionalization and specialization on the one hand and growing 'corporate patronage' on the other. Both combine to turn professionals into technocrats developing an 'ideology of positivistic thinking and pragmatism' (Habermas, 1971; Chan and Evers, 1973). Professionals as technocrats are removed from the political scene as independent actors, in line with their emphasis on 'the primacy of the values of cognitive rationality' (Parsons, 1968:539). Their modernizing role is confined to such tasks as can be fitted within the framework of technical rationality, removing the obstacles placed by ignorance and irrationality in the path of economic growth, but doing nothing to ensure increased participation. Their clients are ruling elites, all of which

4 In the USA and other industrialized countries the increased 'functionally specific competence' and the 'corporate patronage system' have produced a crisis of the medical profession. A discussion of this crisis is beyond the scope of this paper but is nevertheless relevant to our discussion here.
have indeed achieved power by encouraging expectations of major improvements in economic and social conditions of the people at large. But the professionals have themselves usually become 'servants of power' to paraphrase the title of a recent book (Baritz, 1960). They cannot influence the elites to seek the co-operation of the people or even to try to find out what their priorities are; and when the elites behave insensitively, selfishly or oppressively, professionals have lost the power, and often the will, to intervene.

Opinions will, of course, differ on the extent to which professionals should in politically independent states, continue to be involved in articulating national goals. This will partly depend on how far we consider technical rationality can go in eliminating poverty, ignorance, sickness and other obstacles to genuine freedom. Some will consider it unimportant that professionals cease to play a political role in modernization. But what of their professional function itself? We turn next to enquire how this has been affected by the change.

Impact of political change on professional training

In most of the third world towards the end of the colonial period, access of the local population to professions on equal terms with their colonial rulers was an important issue in the struggle for independence. European professionals had, on the whole, been relatively inefficient, but had made some adaptations, to delegate some part of their tasks and to increase their local efficiency as well as their income. They had also undertaken some study of local conditions, particularly in the larger centres of training.

One result of the tension over local access was that Europeans instead of attempting to defend the elite structure depreciated the qualifications available to locally trained professionals, so making identity of professional qualifications a political issue that distracted attention from the real professional needs. There was little local interest in professional functions, but much interest in preventing selection on any grounds that were not obviously measurable.

(a) Selection criteria. The selection criteria that have come to be used at different points on the way to professional status have been affected in two ways by this tension. They have been criteria recognised abroad; and, among these, they
have been the most clearly testable ones. This has made it difficult for the professional training bodies - even when they clearly wished to do so - to develop local traditions to ensure that the professions actually fulfilled, in the local situation, the function for which they had originally been designed.

Not only have the tests for admission to professional status become increasingly international, mechanical and irrelevant. The high incomes available abroad, the fact that local incomes have to be linked to these if professionals are to stay and do local jobs, and the lack of real professional obligation, have all turned professional training into something closely constrained by overseas criteria, and an object of almost universal aspiration by those who can reach the rapidly expanding secondary schools.

Overseas orientation of university curricula led to a similar orientation of requirements for entrance to the universities. Thus, the demand for entry on equal terms to professions often introduced secondary school syllabuses that were, if anything, less relevant to local conditions than those which prevailed before independence. Instead of changing the values, and adapting them to social innovation rather than to fulfilling the previous subordinate role, schools adopted the syllabuses of American, English or French secondary schools designed for entry to English or French universities.

(b) Competition. The size of the professions expanded but less rapidly than the size of the school systems which grew enormously after independence (Silcock, 1964; Chenery, 1971). This introduced a system of secondary education probably more competitive than any that existed even in intellectually elitist countries like England.

In richer countries the techniques of education, which (at least in intention) started with crude motives of fear and rivalry to generate strong impulses to professional and other achievement, had come under attack from the educational specialists. It had not, of course, been capitalism but the sheer fact of poverty and the limited resources available that had imposed these techniques on all teachers in earlier times; but Illich's picture of education (Illich, 1971) which seems extravagant to many readers in developed societies, accurately reflects the stress on irrelevant competition in many ex-colonies.
One of the most unfortunate effects of this competition is its impact on the more remote and rural secondary schools of the less developed world. These schools, except a few staffed by dedicated missionaries, have enormous difficulties in recruiting staff with even a secondary education. Yet the pressure of the competitive pursuit of university places often forces them to teach subjects, and use text-books, the chief relevance of which is that they give a few of the brightest students a remote chance of competing successfully with secondary schools, staffed by graduates, in the capital city.

The pressure of the professions, through the universities, on the secondary schools has many harmful effects, but the distortion of the fruits of literacy for the ablest children on the fringes of subsistence agriculture is perhaps one of the most tragic. The secondary students here are among the most gifted of the children from these poor sectors of society, and even relatively inadequate teachers could, with proper guidance, train them to be effective leaders in taking advantage of the possibilities of modern knowledge. Very few of them, in the present competitive educational system, have any chance of being more than disappointed junior employees of rural branches of companies, suspended by a chain of other people's aspirations from the remote outskirts of the modern world.

(c) Hierarchy and function. It is easier to describe this situation than to suggest policies to remedy it. It is obvious that in any small and poor country in the modern world relief of that poverty requires some people with detailed knowledge both of their own situation and of the relevant scientific knowledge now available; this knowledge is a product of universities, libraries, research institutes, training colleges and the minds and skills of millions of people in countries which have the resources to build the institutions and train the people. The transmission of this knowledge, so as to improve health, productivity and awareness of a wider environment is essential. No one really knows in detail, in relation to any one population, how this is to be done. It is clear, however, that the way such scientific knowledge has been obtained, preserved and transmitted in the past has been through institutions which foster reliable research and communication, and through various widely different technical systems linking such research to training and work. In poor countries such systems inevitably carry some degree of elitism. Those who have close contacts with
the wealthy and powerful countries of the modern world (whether capitalist or socialist) necessarily command much more of the power flowing from wealth and knowledge than their ordinary citizens on the fringe of subsistence. There are, however, a number of different possible ways of trying to foster (or indeed to prevent) economic and political change through promoting (or frustrating) the growth of such systems of transmission of knowledge. These are considered more fully in Chapter 7.

What needs to be explained here is that there are powerful factors, internal and external, impinging on the training and organization of such transmission systems (particularly the professions) which limit the options open to such countries. Internally they have difficulty in designing professional systems related to their country's own income and professional needs by the legacy from the colonial period, and to the demand of professionals and the parents of students that standards should be maintained. Such demands are very likely to be supported from abroad, so that valuable supplies of technical assistance may be at risk. Externally, almost all governments' options are constrained by the fact that overseas governments are usually unwilling - however sympathetic they may be - to interfere with the autonomy of training institutions to design their own entry conditions and syllabuses. Moreover, in present conditions, professions in wealthy countries usually protect their income not by immigration controls but by standards in examinations. These generate strong pressure on the training institutions of poorer countries.

Most of the countries covered in this study have, at one time or another, tried to keep local salaries for government-employed professionals low, so as to reduce the cost of providing both training and official professional services. This almost invariably leads to government employees spending a good deal of time in various forms of private practice. Moreover, the more relatively inexpensive local training produces a supply of locally-trained private professionals, the more pressure there is on training institutions to adapt their courses to be recognized as a basis for overseas specialist qualifications; and those who secure specialist qualifications first flood the developed enclaves in their own capitals and then generate a massive brain-drain abroad.
The role of professionals as operative employees

We have seen that efforts to train professionals inexpensively for local practice result not in extensive adaptation to local conditions but in pressure on training institutions to qualify professionals for further study abroad. While the aim of governments may be to secure cheaper professional services for their own people, they have not used the intense competition for access to professions as an instrument for influencing selection and training in ways that would adapt the professions more to local needs. Perhaps they have felt unable to do so; or perhaps, because of their own need to maintain control, they are more interested in a supply of professionals for public purposes, whether they employ these directly or through contractors. It is, however, worthwhile to investigate how far present conditions hamper the performance of professionals as employees of governments or large organizations in Southeast Asia.

(a) Employment of foreign professionals. The main professionals functioning as experts for large organizations are the engineers and the accountants though contract medicine is also a service to some of the large organizations. In the early days of the impact of the west on Southeast Asian countries, all the engineers and accountants came from Europe or the United States though a few of the doctors came from India. Engineers and accountants were necessary to enable many of the major public works and trading operations to be undertaken. The large-scale mining operations which produced tin in several countries of Southeast Asia in the earlier years of the twentieth century needed engineers who were recruited from abroad (Wong L.K., 1965, Chapter 4). The railways and highways also required engineering services. Small-scale trading operations needed few professionals, but in the twentieth century, trading operations grew very large and involved large-scale production of rubber, palm oil, hemp, tobacco and other products. Substantial capital was needed beyond the resources that any one individual could normally provide. Accountants were not merely employed by particular firms to manage their resources. They also built up auditing business in Southeast Asian countries, and many of them undertook a management role controlling planters and merchants financially in the interest of overseas shareholders (Puthucheary, 1960:28-44).

It was not long before local men and women began to be trained for these professional posts. Local firms now build
many of the large buildings, bridges and other public structures and many are employed as accountants for large Asian-owned banks and businesses, though these are usually not the very largest undertakings.

(b) Reasons for survival of European professionals. A high proportion of the engineers for the really large contracts such as dams, major highways or new railways or airports are still Europeans or Americans. Most of the accountants that audit the accounts of banks and major international firms are also still Americans or Europeans, or employed in firms that they control.

This is not because at the present time Asian engineers and accountants have yet to be trained to the level of expertise found in Europe or the United States. In the Philippines in particular, accountants are almost certainly trained to a much higher academic level than in any other country because of the intense competitiveness of the profession, the high qualifications demanded for entry to it, and the difficulty of the professional examinations (see Chapter 6).

Nor can we now explain this survival of foreign professional dominance in terms of foreign shareholders trusting individual Europeans more than local professionals. Individual Thais and Filipinos sign the accounts of even the largest international firms, and some of the most competent engineers working in Asia for big international companies are themselves Asian; yet in general if these accountants or engineers set up their own businesses they are no longer able to attract business from the largest undertakings.

The technical training of Southeast Asian graduates primarily in foreign countries has produced professionals equal and often superior to professionals from the West because they have been selected for intellectual ability and industriousness by a highly competitive process and have then been sent overseas to training institutions which equip them to work at a very high standard for international companies. Lack of professional success in the major fields of accounting and engineering is clearly due far more to defects in the local professional structure than to any possible defects of individuals.
Even the larger amounts of capital available to the great international companies are a consequence not a cause of differences in professional structures. It is true that foreign firms have a comparative advantage in undertakings where large aggregations of capital are necessary; but this is because in most Southeast Asian undertakings the premium for lenders' risk in addition to borrowers' risk would be much higher in large aggregations of local than of foreign capital. Effective capital markets relying on local accountants' and engineers' evaluations have not developed, mainly because the professions have not established the commitment and discipline, related to local conditions, which could win public confidence that reports authenticated by qualified professionals were reliable.

It may be that the cultural norms enabling these professions, in richer countries, to help aggregate large amounts of capital in impersonal institutions are not the most appropriate ones in some Southeast Asian countries. This is discussed in some of the country chapters and in Chapter 7. What is clear is that, where the structure of the profession is such that neither accountants nor engineers are in a position to refuse business which clearly transgresses the norms embodied in their training, the training itself merely breeds cynicism and aggravates the pressure to migrate to other countries.

There can be no doubt that the technical knowledge in which accountants and engineers are trained makes possible much more effective economic activity in Southeast Asia than could be undertaken without it. Even before World War II substantial industrial development took place in Hong Kong and Singapore using scientific knowledge acquired by Chinese who had studied in unrecognised universities in China and so could not obtain more lucrative positions in European firms or the Public Works Department. A considerable banking system developed in Thailand during World War II and later became a channel through which a great deal of capital was invested through consortia protected by Thai politicians.

Nevertheless the system of selection and training diverts many of the ablest and most disciplined minds into the service of international companies or even impels them to emigrate. The form of the instruction they receive is not able to give them detailed knowledge of their own market structure which would enable them to innovate and compete
successfully with larger and more technically up-to-date foreign organizations.

The professional role in supervision and regulation

The distortion of the technical role of the professional is matched by a similar distortion of his protective role. Engineers not only design buildings, bridges and roads, but are also employed to check that the designs are safe and relatively inexpensive to maintain when, without any check, they could be dangerous and constantly in need of repair. Similarly accountants not only devise effective financial control mechanisms, but also supervise them from a public point of view. Doctors not only ensure the health of the work force, but are employed to check malingered.

In all these spheres the governments have difficulty in achieving enough reliability to satisfy the public - which in general does not expect very high standards in this respect - that they are genuinely serving the national interest. In Malaysia the doctors whose certificates are recognised are arbitrarily limited by the government. In the Philippines government engineers display continued anxiety to present a clean image. In Thailand the accounting profession itself is unwilling to introduce a register of accountants for fear that they might be given unwelcome responsibilities.

If the professional is indeed the 'most modern of men' and if modernity is interpreted as taking a lead in setting up the conditions for a rationally and impartially organized society, then what has happened to the training and the discipline of professionals as a result of disparity between their international market value and their local earning power has seriously limited their modernity.

In many of the less-developed countries, the authority of the professional under the colonial regime depended on his employment by the colonial power. It was possible for a locally born and locally trained professional to enjoy this authority so long as he was part of a system which maintained its authority in other ways. Since the colonial system ended they have had to try to build their own influence. However the way in which this influence has depended on foreign contacts has largely prevented them from either adapting their training, structure and values to their own
situation or receiving acceptable status and income by acting in accordance with their professional norms.

The professional as adviser

With the professional as an employed technician increasingly diverted from the realities of the local market, reliance has in some instances come to be placed on the professional as an adviser to many separate businesses. In several of the countries of Southeast Asia and in other less-developed countries throughout the world, institutions such as productivity centres or management advisory consultants have been emerging, which attempt to spread some of the skills derived from scientific knowledge to businesses in other ways than through the professions found in western countries. Some of the United Nations agencies and some of the national aid agencies have experimented with finding or training individuals qualified to give advice to businesses on a small scale in matters that might improve their productivity. The present study has focused on only one branch of this movement, namely the whole apparatus of technical advice to agriculture. In agriculture the extension agent is not replacing any established profession, and it is reasonably clear that many of the techniques used in wealthier countries to enable their dwindling farming population to maintain its income by increased efficiency are inappropriate to the needs of the less-developed countries. Even in this area, however, there has been some tendency for the training to be influenced by inappropriate overseas models. Without a brain drain problem and without professional associations, and in a situation where much of the work cannot be done in international languages, the profession of agricultural extension is relatively insulated from most of the pressures that have made other professions less relevant to their own environment. Such distortion as has come about appears to be mainly confined to the effects, on the training process, of aspirations to professionalism.

Rise and decline of the professional?

(a) Growth and decline of relative numbers. In the process of modernization, traditional occupational groups steadily declined in Southeast Asia at least until the 1950s, as their modern functional equivalents increased in relative importance. There was a decrease in numbers of aristocrats and a rise in those of bureaucrats, a decrease
in religious specialists and a rise in teachers and secular professionals. In Thailand for instance the share of Buddhist monks dropped from 21 per 1,000 of population in 1911 to 5.7 in 1965, while the share of teachers rose from 1.1 per 1,000 of population in 1925 to 5.5 in 1965 (see Table 2.1). In Indonesia the percentage of cabinet ministers using aristocratic titles dropped from 30 per cent in 1945-57 to 9 per cent in 1957-64 (Yasunaka, 1970:116). In general, the importance of traditional titles was challenged by that of educational degrees.

There has, however, been a reversal in this general trend in some countries. In South Vietnam the number of traditional Vietnamese medical practitioners has gone up considerably (from 1,217 in 1951 to 3,049 in 1962 according to the Statistical Yearbook 1964-65), in Ceylon the Ayurvedic doctors have consolidated their ranks and become a major political force during the past fifteen years and in Java a process of revival of traditional practice seems to be taking place. It is difficult to judge from these figures whether these structural underpinnings of cultural renaissance movements are the beginnings of a new trend or rear-guard actions before the ultimate collapse of a traditional way of life.

(b) Change in professional role. In one sense it seems as if, since independence, the Parsonian role of the professional in Southeast Asian countries has returned. They have become more detached and 'rational', more like specimens of modern men introducing, by their work, processes of rationality and specialization from outside their own traditional, or semi-traditional society. Yet in another sense they have, by ceasing to participate, ceased to lead in modernization and even lost a good deal of effectiveness in achieving technical development.

One of the ambiguities of the professional role in less-developed countries arises from the relation of professionalism to authority and to popular participation. The professional, in his task, is introducing more rational, goal-oriented behaviour to societies, and thereby generating specialization and susceptibility to further change. Since the existing behaviour of less-developed societies is largely authoritarian, and the desires of the people at large are mainly influenced by this structure, the professional in his work is usually at first carrying out, and in the process modifying, the wishes of those in power, much as a teacher modifies the goals of his pupils by starting with more
Table 2.1

Occupational groups in Thailand, 1911-1965
(Per 1,000 population)

<table>
<thead>
<tr>
<th>Year</th>
<th>1,000 population</th>
<th>Non-agr. labour</th>
<th>Govt empl.</th>
<th>Buddhist monks</th>
<th>Teachers</th>
<th>Lecturers, professors</th>
<th>Univ. stud.</th>
<th>Physicians</th>
<th>Legal prof.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911</td>
<td>8,266</td>
<td></td>
<td>21.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1915</td>
<td>8,783</td>
<td></td>
<td>8.7</td>
<td></td>
<td></td>
<td></td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>9,511</td>
<td></td>
<td>8.8</td>
<td></td>
<td></td>
<td></td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1925</td>
<td>10,599</td>
<td></td>
<td>8.2</td>
<td></td>
<td>12.1</td>
<td></td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>11,918 (158)</td>
<td></td>
<td>6.6</td>
<td></td>
<td>11.5</td>
<td></td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1935</td>
<td>13,788 (120)</td>
<td></td>
<td>6.1</td>
<td></td>
<td>10.8</td>
<td>1.7</td>
<td>0.01</td>
<td>0.8</td>
<td>0.03</td>
</tr>
<tr>
<td>1940</td>
<td>15,331</td>
<td></td>
<td>7.3</td>
<td></td>
<td>8.9</td>
<td>3.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1945</td>
<td>16,737 (153)</td>
<td></td>
<td>6.4</td>
<td></td>
<td>4.0</td>
<td>0.01</td>
<td>1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td>19,635</td>
<td></td>
<td>9.0</td>
<td></td>
<td>4.2</td>
<td>0.03</td>
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<td>8.3</td>
<td></td>
<td>6.8</td>
<td>(4.8)</td>
<td></td>
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<td>5.5</td>
<td>0.12</td>
<td>(1.5)</td>
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</tbody>
</table>

Note: Figures in brackets are estimates.
Source: Statistical Yearbook of Thailand and other Government publications.
rational ways of achieving their existing goals.

The professional may be changing people's attitude to health because an employer wishes to protect his labour force from malaria or because a king wishes to control an epidemic of cholera in his capital. He can engage in investigation, experiment, training and treatment, that will improve public health and attitudes to health. He may, however, feel that his own people's wishes and difficulties are misunderstood and his own status is insufficient to let him do what his training led him to expect to do. He may then abandon his detached professional status and participate in leading a political party, and helping an independence movement to achieve self-government. This may achieve one or more aspects of modernization. It may sometimes cause large numbers of the people to participate and express their ideas, so making government more responsive; or it may make possible the extension of professional behaviour by official stimulus. Neither of these ways of increasing rationality and specialization really conforms to the Parsonian pattern of the activity of the detached professional.

The professional who remains relatively detached and specialized may have more scope under an independent government, but not necessarily so. He will be neither more nor less a servant of power than under a colonial regime; but his role in increasing specialization and rationality of behaviour has a chance of being more significant. Whatever the goals of the government, he should, in principle, have more chance of modifying them in carrying them out than he had when he was working with a foreign authority.

He may not, however, be involved in the government's goals, or the goals of any significant section of the local population. His sense of rationality and modernity may have become so much influenced by his training that subconsciously he wants less to modernize and rationalize his society than to escape from it into an enclave in some large city, or preferably abroad. In so far as he is compelled to work in his own society he is less concerned to change it than to adapt professional methods so that they will yield him an adequate income.

Of course, if the local government has been distorted by basing its power on overseas contacts, it too will be mainly concerned with maintaining its own position and income, and
the professions will tend to conform to these goals. The analysis here does not depend on the government operating in this way. The power that the professional serves may be merely his own power to remain a part of the international professional structure, whatever the government does.

We have seen that the decline in participation, far from turning the professional back into an efficient agent of rational behaviour within his own sphere, has in many ways tended to weaken his effectiveness, both as an initiator of new techniques and as a protector of the public against abuses of them. Not only is he expensive, but he is not encouraged to work in such a way as to benefit from his advantages of local knowledge and to reduce his participation in types of work in which he is handicapped.

In the face of high costs, low involvement and lack of adaptation of professionals to local needs, the influence of professionals as a mainspring of modernization seems to be diminishing. There may even be a reaction toward the traditional techniques.

There is, however, other evidence that dissatisfaction with professional roles, though it has not yet undermined the prestige of western medical drugs and procedures or spread to any other professions, has led to popular questioning of the claim of western-trained doctors to a unique legitimacy. In Malaysia there have recently been strong pressures to register doctors trained in Chinese and Ayurvedic medical traditions. In Thailand there is increased emphasis among medical students on Buddhist ethics in medicine, and also increasing interest in the whole system of community health care, including the traditional medical system.

So far we are witnessing something that goes much less far than a total rejection of modernization based on scientific knowledge. Reform of professional systems to give them substantially more local content could still probably recapture the initiative in most countries in the region.
Chapter 3

The social role of medical professionals
in Malaysia and Indonesia
H.D. Evers and D. Regan

Alternative views of the professional role

In many of the developing countries, the production of professionals in fast expanding universities has been deemed more important than agricultural production and the building of factories. Highly professionalized experts are a must in any foreign aid package and entrepreneurial talent is expected to emerge from professionalized managers with Harvard Business School degrees. If one defines modernization as the increasing acceptance and application of scientific knowledge (Alatas, 1973), then the professional does, indeed, head the list of top modernizers and innovators.

Chapter 2 has presented the case for professionals as spearhead groups of change and modernization. It has also suggested that another approach needs to be considered, and the empirical validity of each tested. According to this latter view, high-level training and successful socialization to professional norms may well yield modern incumbents of professional roles, but not necessarily more modernized societies. Because of the increasing functional specificity of their roles, professionals tend to operate in an atmosphere of seclusion from the changes being undergone by the wider society. Increasing specialization reduces the general efficacy of professionals by inhibiting communication between them and other social strata;¹ professionals tend to make

¹Merton (1947) argues along these lines when he suggests that the high level of functional specialization has imbued engineers with an 'incapacity for dealing with human affairs'. Ivan Illich's attack on formal education also contains arguments relevant to our discussion (Illich, 1971).
use of professional specialization and high technical competence for consolidating their own status and power rather than for social development and modernization. Professional resources such as modern knowledge and organizational capabilities are then employed not to disseminate innovations, but rather to monopolize them.

In this chapter we wish to shed light on the problem by discussing the findings of field research on the role of professionals in Malaysia and Indonesia, and the results of interview surveys on medical practitioners in two selected urban communities in these two countries. In this we are interested less in the peculiarities of the two urban areas and their doctors than in the possible modernizing role of professionals in developing countries.

**Professionals' leadership potential**

In order to gain clarity on these issues and to determine which of the two alternatives mentioned is the more likely, a study of professionals in small towns in developing countries appeared to be most appropriate.

(a) Doctors and other 'scientific' professionals. In a small town professionals will be the most modernized section of the population. Few alternative modernizing elites could have a direct impact on local development, and professionals would have several distinct advantages over any others. They enjoy a high social status and are therefore well placed to get their views accepted: as several studies have shown, doctors in particular rank very high. They are also highly 'visible', well known to - and in frequent contact with - the townspeople, through the services they render, and hence in a position to become familiar with local development problems throughout the community, especially since their professional position raises them above ethnic or other particularistic divisions in a plural society. They can thus easily give advice to both ordinary citizens and other elites to whom they have easy local access.

Close co-operation and ties with other local elites is even forced upon them by their own small number and by the scarcity of recreational and other facilities in small towns. Professionals, civil servants, military officers, journalists and businessmen are likely to meet in a local club, on the golf course, on the tennis courts or at receptions on
national and local holidays. Moreover, connections with the central elites in the distant capital cities can be activated by them to 'get things done' locally. They have probably attended the same educational institutions as higher government officials or military officers, with whom they might even be connected through kinship. These school or kinship ties facilitate informal access to the country's decision making centres.

Thus, professionals can perform informally and outside the government's established communication channels, an important 'broker function' between local and national levels of decision making and modernization: theoretically their modernization potential seems to be very high.

(b) Traditional doctors (bomohs). We also propose to look at the traditional counterpart of the modern medical professional, the traditional medical practitioner, known in Malay village society\(^2\) as the bomoh. Besides the village headman and religious authorities, he is a candidate for indigenous village leadership, since he combines professional status as the pre-eminent local authority on health and medicine with full integration into village social structure. This combination would seem to fit him for multiple roles, as confidant and advisor to peasants, and participant in community-based organizations. We thus enquire whether status and prestige in non-medical roles accrue to him by virtue of his acknowledged expertise in medicine.

We may realistically consider bomohs as possible candidates for leadership status: they are a living force with a potential constituency among the more than five million Malays who remain on the land. (This is not to discount their possible influence upon urban dwellers, particularly recent migrants, as well.) To regard them as merely 'traditionals' is to dismiss them as products of a past age. It would be hard to justify wishing them away, at least in the area where these data were collected: well over half the villagers there report that they would seek the bomoh's services for selected health emergencies (Regan, 1969b; for reliance upon the bomoh in another part of Malaysia, see Chen, 1969). We should therefore conclude that the traditional medical practitioner, like his modern counterpart, has considerable potential as community leader and channel of modernization.

\(^2\)Traditional doctors were interviewed for this study in Malaysia, not Indonesia.
Structural constraints on modern doctors

Villages and small towns in developing countries seem to provide an ideal setting for professionals to exert their modernizing faculties. Our study in two provincial towns in Malaysia and Indonesia suggests, however, that doctors, and perhaps other professionals, though highly modernized themselves, work within a framework of powerful structural constraints which hinder their possible involvement and thus the efficacy of their modernizing influence.

Why is the efficacy of professionals in general and doctors in particular low in development efforts and modernization? We will consider first the overall situation of professionals in small towns in the two developing societies which concern us here, and then move on to analyze more specifically data derived from interviews with doctors and other professionals in the two towns under study.

Medium sized towns in both Indonesia and Malaysia, including the ones in which fieldwork was done, tend to have all the characteristics mentioned in the previous section. But there are other features of the professional complex in developing societies, which strongly counteract the tendencies that make professionals' involvement likely.

(a) Social erosion. In many developing societies but particularly in Southeast Asia there are pronounced geographical, social, cultural and political differences between 'centre' and 'periphery'. The west coast of the Malayan peninsula in Malaysia and the island of Java in Indonesia both boast the national capitals, the highest population concentrations, other big cities, and the major educational facilities of their respective countries. The pull of the centre is particularly strong for those who have, or aspire to, high educational qualifications. Though one of the towns studied now has a provincial university, the centripetal effect, especially on professionals, is still very strong. Doctors wanting specialist training or other upward mobility for themselves or their children have to leave the town to go to a metropolitan city or abroad. Increasing individual modernity through education thus leads to migration and to a consistent drain on the intellectual resources of towns. As a study of migration in the Indonesian town shows (Evers, 1972b, Table 5) 60.6 per cent of the employed male out-migrants to the 'centre' (Java or to foreign countries) were students, 20.2 per cent were in relatively high-level
positions (employees including professionals) and 19.2 per cent were of low-status occupations (workers, small traders, etc.). Migrants interviewed in Java cited the desire for higher education as one of the main reasons for leaving the town (Nairn, 1973).

(b) 'Regional imbalance'. A complementary pattern emerges from a preliminary study of Malaysian elites originating from the town we have studied. They are severely under-represented in the total Malaysian elite, with only 0.6 per cent of it, whereas the ratio of the town and its surrounding population to the Malaysian total population is almost 4 per cent. Although there are very few persons with a high education out-migration is already increasing. All this recalls the familiar international 'brain drain' from under-developed to developed regions. The serious deficiency of doctors in West Malaysia becomes apparent when we look at the profession's distribution throughout the country. In 1969, 34.4 per cent of the 1,914 doctors were stationed in Kuala Lumpur and its satellite town of Petaling Jaya, another 36.1 per cent were in the other three major west coast cities of Penang, Ipoh and Johore Bahru. Only 2.2 per cent of the doctors stayed in rural areas. The situation in Indonesia appears to be similar though no exact figures are available to us.

(c) 'Turnover' of doctors. The medical practitioners in both small towns are primarily government employees. While in Indonesia there are very few private doctors (though government ones may maintain a private practice for two hours daily), in West Malaysia less than half the doctors are employed by the government (46 per cent in 1969), but the private practitioners are concentrated in the three largest West coast cities. Most small-town doctors therefore are there not of their own free will but by government decision (our two towns are considered hardship posts). Though the new medical faculty has brought a surplus of doctors to our Indonesian town, the pull of the centre is still strong. The tendency to gravitate away from both towns results in a rapid turnover of doctors who maintain pressure on their respective ministries to transfer them to more centrally located areas, preferably the capital city.

Absenteeism was also high: our efforts to interview

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3 These figures are taken from our unpublished study on the social characteristics of the Malaysian medical profession.
doctors in the Indonesian town were frustrated more often by their absence in Java on 'official business' or for 'further training' than by calls to attend to emergency cases. In general, doctors' impermanence reduced their chance to become involved, and make their modernizing potential felt, in local affairs.

Traditional doctors as professionals

We have seen that traditional doctors have a potential for leadership in development. They would not seem to be handicapped by the structural constraints considered above. But before we ask how far they are in fact leaders in public affairs, we must check whether they are actually professionals. Can such a traditional medical practitioner as the Malay bomoh really be described as a 'professional' in the light of the criteria of Wilbert Moore and others, considered in Chapter 2? Let us consider the criteria one by one.

(a) Full-time occupation. This may be a necessary condition, but Moore correctly observes that it is certainly 'not [a] sufficient condition for admission to higher ranks on the scale of professionalism' (Moore, 1970:5). It can separate professionals from amateurs, but not from other full-time workers. The satisfaction of this criterion seems to depend, in addition, upon economic considerations: i.e. whether or not the area has reached a critical economic level so as to provide a clientele for the professional.

The evidence that bomohs satisfy this criterion of professionalism is inconclusive, if not negative. There are those regarded as bomohs who are only part-time practitioners. One hardworking bone-setter, when asked whether he ordinarily did other kinds of work as well, replied that, in addition to his medical duties, he planted three and three-quarter acres of padi, grew tapioca, sold tobacco, and did carpentry work. Another said that being a bomoh was not his primary job; rather, he was a carpenter, and medicine for him was a seasonal occupation to be practised when the onset of the dry season brought the usual outbreak of measles; in general, his workload as a bomoh was light. Nevertheless, for the majority of bomohs we spoke to, medicine was a full-time occupation. One of these reported earnings of M$300/- month, a figure comparable to the salary of most secondary school teachers.
(b) Commitment to a calling and service orientation. We shall consider these criteria together. Their essence is that professional norms should be embodied in codes of ethics. Obviously, neither doctors nor bomohs always live by their codes; nevertheless, these codes persist, and may be expected to exert some influence over professional roles.

An indigenous code of ethics comes through quite strongly in the bomoh material: the well-known Hippocratic code of ethics may serve as a base for comparison. The Hippocratic oath contains twelve stipulations, some rather anachronistic for doctors and bomohs alike. One that is not irrelevant to present-day concerns stipulates:

I shall impart both written and oral instruction as well as practical instruction to both my own sons and those of my teacher, and to those students who have signed the agreement and sworn to abide by the physician's rule, but to no other person (Levine, 1971:57).

Indeed, bomohs highly value secrecy, for both practical and ethical reasons. With few exceptions, they carefully cultivate and jealously guard their medical individualism. When we asked each bomoh whether he ever treated patients jointly with another traditional practitioner, most replied negatively. The few instances of joint treatment are explained by the unusual skills and high status of two bomohs to whom other practitioners would bring problem patients. Practising bomohs rarely even discuss treatment techniques with each other, or with the general public. One even said that such discussions would be haram, or forbidden by religion.

Besides the norm of secrecy, another stipulation of the Hippocratic oath states: 'I shall not do surgery even on those suffering from (kidney) stones, but I shall yield to practitioners who specialize in this work' (Levine, 1971:58). The emphasis on specialization is a powerful theme which emerged from the interviews with bomohs. When would-be

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4Although it is true that occupational groups aspiring for greater status or other gains frequently use the 'code of ethics' argument to rationalize their claims, this is not the case here. No 'campaign' is being undertaken by Malay bomohs to augment their position.
patients enquire about illnesses beyond the range of a particular bomoh, he is likely to send them elsewhere, the way this specialist demonstrated: 'Now this illness of yours is not for me to treat ... because it is not a bone problem'. Bomohs seem to recognise that certain illnesses are within their sphere of competence, while some are best left to the expertise of others. They say they will refuse a case if they consider themselves insufficiently competent to handle it, and claim to be willing to refer patients to other bomohs or doctors.

Another section of the Hippocratic oath deals with preserving the confidentiality of the doctor-patient relationship. Bomohs rarely contravened this part of the oath in our talks with them. With very few exceptions, names of patients were left unmentioned. There was little or no gossip about patients and their illnesses. This reluctance to discuss clients meant that it required considerable probing to elicit informative replies about the social origins of patients. As the following excerpts show, bomohs often considered such questions somewhat irrelevant, or seeking answers which might violate a bomoh's code of ethics.

'What about the economic status of your patients?'
- 'I don't know about that. That's their business.'

'How many of your patients come from the town area?'
- 'I don't pay much attention to that. Wherever they live, they come, and I just receive them. I don't ask.'

'What is their ethnic group?' - 'That's not important. Whoever is sick, and feels like he wants to come, comes!'

This readiness to regard as irrelevant questions about patients' social backgrounds preserves the confidentiality of the bomoh-patient relationship; it also reflects a norm which commends the universalistic treatment of patients. In a sense, being ill is all that matters.\(^5\)

\(^5\) Still among bomohs as well as doctors, differential treatment is undoubtedly given to patients on the basis of the latter's social class or ethnic affiliations. This is probably as true for Malaysia as studies have shown it to be for the U.S.
This norm of universalism is central to the service orientation which is the third criterion of professionalism. In the interviews, over and over again bomohs gave evidence that to go anywhere, any time, and serve anyone who happened to be ill, was the behaviour expected of them. Typically, patients come to the practitioner's house for treatment but, depending on his patient's condition, the bomoh is also prepared to make house calls. They say they are willing to practise seven days a week if necessary. They may also be compelled to venture out on night calls. Fee schedules cannot be fixed, according to bomohs. Although custom tends to decree a reasonable payment — say, M$1 placed in some betel leaves —, no price is agreed upon before treatment commences. When we asked, 'What happens if you get nothing?' the bomoh answered in surprise, 'So? If he has nothing, what's he supposed to give?'

In general, then, on criteria (ii) of professionalism (commitment to a calling with a normative code, and a service orientation), bomohs seem to fare no worse than doctors.

(c) Formal organization. Bomohs identify themselves with their occupation, but lack any formal organization. Thus, the extent of identification with formal organizations represents a genuine difference between bomohs and doctors. However, the importance doctors attribute to their inclusion in a formal medical organization varies widely, and depends a great deal upon work settings. For those interviewed, membership in the Malaysian Medical Association (MMA) did not seem to be very significant: membership is voluntary, and some were not members. Furthermore, even as members of a medical team, although they met each other informally at coffee breaks and after duty hours, they could hardly be said to constitute a formal interest-group. Doctors almost never took any joint action. Even clinical meetings were held irregularly (always less than once a month). Thus, for the particular area being discussed, the lack of a formal bomohs' organization, though a genuine point of difference between them and doctors, failed to distinguish the professional activities of the two professions.

6i.e. The seventeen staff members of the town hospital. Five others were private practitioners, and one a public health officer.
(d) **Autonomy.** The real *sine qua non* of professionalism is that professionals themselves control access to the professions. Society grants experts the somewhat frightening power to administer their own system of qualifications and legislate their own activities. There is no formal organization of Malay *bomohs* to control admission to the circle of practitioners; yet the system is a tightly knit, closely controlled one. Most achieve the status of *bomoh* by hereditary right, or by a period of apprenticeship or study (Endicott, 1970; Robert, 1959), in which a 'master' *bomoh* agrees to divulge parts of his knowledge to selected disciples. Obviously there are no formal licensing procedures (although in 1972-73 Chinese physicians in Malaysia - *sinehs* - have demanded that the government recognise and license them). Although isolated individuals may simply declare themselves to be *bomohs*, generally an informal set of procedures among Malay peasants controls access to, and regulates the profession. When we asked doctors their opinion of *bomohs*, in particular whether they thought the government should curb their activities, most considered it a hopeless task. At least for the foreseeable future, the autonomy of the *bomoh* seems assured.

To sum up the discussion on traditional practitioners as professionals, while differences exist between them and modern doctors, several of the central criteria of a professional role may be equally characteristic of both groups.

Although better criteria eventually may allow the specification of hard and fast distinctions between the two groups, at present such distinctions seem unfounded, even if we refer, as Moore does, to a 'scale of professionalism'. Thus, pending such criteria and their application to the problem, it seems reasonable to accept *bomohs* as professionals. This recognises that the similarities in occupational role between *bomohs* and doctors outweigh the traditional-modern distinction often employed to differentiate them.

**Involvement of doctors in modernization**

Although in theory well suited to be modernizing agents in the two provincial towns in Malaysia and Indonesia, professionals in general, and doctors - the most highly professionalized - in particular, show little involvement in community affairs, or impact on the local community and tend to confine their modernizing activities to their professional
specialty. The process of professionalization, especially the long training, orients individuals towards the wider society rather than the local scene. Emphasis on the metropolitan centres of professional expertise makes them unlikely to stay long in a small town and those who remain may be inhibited in several ways in their efficacy as modernizing agents.

Although skilled professionals such as doctors are equipped to perform their duties efficiently, increasing professionalization tends to reduce the scope of their modernizing functions. Like other full-time practitioners of a calling with strict norms of conduct, professionals have only limited time and attention to give to the life of their town. Moreover professional autonomy gives experts the power to administer their own system of qualifications and legislate their own activities; if this is granted nationally to a profession, the local society can make few demands on its professionals for further activities, so long as these are not defined as part of the professional role. Finally, increasing specialization, as explained earlier, reduces the possibility of communication and tends to lower the efficacy of a professional's general activities. Paradoxically, then, the more successfully doctors adapt to modern professional standards, the less successful are they in diffusing modernization.

(a) Degrees of Involvement. The avenue to efficacy in modernization appears to be involvement in community affairs, or participation in the wider communal life beyond the workplace (Wilensky, 1961). In our study, the core issue is the vitality of professionals' social participation and the strength of their attachment to the community and its major institutions. Theoretically, acknowledged status as medical experts should facilitate participation in and even leadership of other parts of town life. Whether doctors do in fact exercise their potential as involved modernizers can be seen by examining the interview material, which we do below, after summarizing the various ways doctors might involve themselves.

There are several possibilities for professionals to express their participation in local affairs. The first level of involvement presumes a set of attitudes underlining the desirability of participation. Beyond the simple assertion that it is 'good to get involved', concerned professionals might be expected to know much about the town
and its problems. Thus, another measure of sincere involvement in town affairs seems to be ability to describe the local setting and articulate town problems. For doctors, another way to participate in a developing society might be to act as confidants. Since at work doctors are privy to their patients' personal medical problems, the intimacy of the practitioner-patient relationship might reasonably be expected to extend to discussion of other, non-medical matters, either with them or with others whom the doctor knows in the local community. Furthermore, these local networks of kinship and friendship would constitute one type of involvement on a 'pre-political' level. Though such local ties will not necessarily be used for change and modernization, if professionals have local friends and kin then at least they may have the chance to effect change through them. Most directly, professionals' involvement in local affairs may be expressed through participation in voluntary associations and through politics.

(b) Attitude to local affairs. We shall now try to explore these ways in which doctors in two developing countries could be involved. Doctors are part of a larger group of professionals, whose typical characteristics (Moore, 1970) distinguish them from other occupational groups in the society. In particular they share the common experience of a long and rigorous training. Characteristically, preparation for a medical career takes place in local cities or abroad, that is, in an 'artificial' western institutional framework of university and hospital, contrasting sharply with the realities of small-town life in developing countries. Little wonder that well-trained doctors express dissatisfaction with positions in provincial towns. Professional socialization links them to international standards of medical science, best embodied in urban and cosmopolitan centres of learning: to them, professional training is an education, not only for medical practice but for metropolitan urban life.

Hence those who arrive in a small town, usually by transfer, have already developed negative attitudes to living and working there; powerful centripetal tendencies constantly operate to drive them towards the centres of Malaysian and Indonesian society. In tending to denigrate small town existence, sophisticated doctors merely mirror the sentiments of others who know metropolitan life. For example, when one capital-city doctor mentioned to the hotel manager his imminent transfer to a provincial town, he was
asked: 'Why are they sending you there, what did you do?'

Government service doctors, in the Malaysian town we studied, had felt apprehension when they received news of their small-town posting. Placement in a relatively isolated small town brings up the spectre of occupational as well as cultural stagnation: the threat to one's career of being forgotten by those in the urban centres who control professional advancement. Characteristically, even those who found provincial society peaceful and attractive had second thoughts when they considered their careers and their children's education.

(c) Information on local affairs. For most doctors, malaise related to their work, lack of recreational and other facilities, and distance from relatives and friends meant dissatisfaction with local conditions without any consequent desire to change them, and a wish to detach themselves physically and emotionally from the local setting rather than get involved. Emotional detachment from the affairs of the town created something of an 'information gap' for doctors. Although in an ideal position to become familiar with local conditions, doctors showed relatively little knowledge about town affairs. As argued above, genuine involvement in the community presupposes ability to articulate local problems, even if their solutions are not readily forthcoming; one service that knowledgeable elites could perform is specification of local community needs. Yet only six out of twenty-three doctors could specify more than two community problems in the Malaysian town. Furthermore, they referred to many problems (e.g. the necessity to raise living standards) in too vague and general a manner to be specifically relevant to the local setting. Some of the comments came from recent national newspaper articles about the area, and other 'major problems' of the town were complaints about the lack of special facilities for professional groups.

Obviously, differences in willingness as well as ability to discuss problems are reflected here. The above generalizations might well be dismissed if overall impressions and other findings on doctors' efficacy in modernization did not reinforce them. Only two non-specialists out of sixteen, and one of the specialists, thought that they made or could possibly make a positive contribution to the town's non-medical development. Nine non-specialists in the
Malaysian town, as well as all but three specialists, defined their contribution solely in terms of the medical services they provide; five more non-specialists said they made no contribution to development at all.

In our interviews, doctors tended to measure progress in terms of economic development and industrialization, and hence placed little emphasis on their own role in other development. Also they all tended to minimize the influence of professionals on decision-making in a small town.

This discussion casts further doubt on the image of professionals as effective modernizers. Doctors' thoughts are focused upon the metropolitan centres rather than upon the local scene. Non-medical aspects of development are not considered to be their responsibility. Some might argue that their opportunities for involvement are limited and that the highly centralized political system makes it difficult to effect change at the local level. However, without at least a sense of efficacy and the will to get involved, even the available opportunities will remain unexplored.

(d) Structural aspects of involvement. In considering structural aspects of involvement, two forms need to be distinguished. The first concerns the ties a doctor could develop in the local community, which might create the basis for an active interest in local affairs; the second concerns participation in formal organizations.

Property, kinship and friendship connections can be regarded as 'pre-political' forms of local involvement. Close kinship relations, the community of interest between property owners, or the opportunity to give patronage to tenants, might create ready constituencies that a professional could mobilize for a variety of purposes. Access to local resources of land or people would considerably enhance his potential power in local affairs.

Though the two towns under discussion are in many ways quite different, as are the overall structures of the professional complex in Malaysia and Indonesia, the type and level of involvement of doctors show a surprising degree of similarity. The medical practitioners as a group

7 Of whom two supplied no information on this.
rank fairly low on several of the indicators of involvement discussed above (Table 3.1).

There is one major difference though. In the Malaysian town, 70 per cent of the doctors are not members of the two large ethnic groups, Malays and Chinese, whereas only 25 per cent of the doctors in the Indonesian town differ ethnically from the majority.

From these data it should be apparent that first-level involvement and social participation in the local community is low in both towns for a number of reasons: most of the doctors hail from other areas, have few local kinship connections, tend to interact mainly among themselves and therefore have only limited friendship ties with non-professionals in their town. There also appears to be little formal interaction with other government officials, businessmen, the aristocracy (in Malaysia) and the military (in Indonesia), and there is no participation in decision making networks or cliques, as analyzed and described by Skinner (1958:172) for the Chinese society in Bangkok.

Participation in formal organizations, voluntary or not, is another form of involvement. As has been argued earlier, professionals might have little power in terms of wealth or weapons, but could, through their high degree of education, connections with the wider world and organizational capabilities take an active part in social movements, modernization and development. The ability to form and lead organizations, including political parties, did, in fact, give them prominence in the early political life of both Indonesia and Malaysia (Evers, 1973). In Malaysia, at the national level several physicians still occupy prominent political positions.

Membership in associations is thus used here, as by other sociologists (see Wilensky, 1961) as an indication of social participation: is the doctor's participation in the community's associational life a natural extension of his occupational participation? Thus, doctors were asked to list all organizations (professional and otherwise) in which they were members, and to note whether they were holding or had held any offices in them. Our data show (see Table 3.2) that about half the doctors in each town were members of no organizations, or of only one. As this one organization is in all cases the national medical association, membership in which is compulsory in Indonesia, the degree of organizational
Table 3.1

**Indicators of local involvement: kinship, ethnicity and property**

<table>
<thead>
<tr>
<th>Doctor</th>
<th>Per cent doctors in</th>
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<tbody>
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<td></td>
<td>Indonesian</td>
<td>Malaysian</td>
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<tr>
<td></td>
<td>town (n = 56)</td>
<td>town (n = 23)</td>
<td></td>
</tr>
<tr>
<td>Born in town</td>
<td>16</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Wife born in town (if married)</td>
<td>18</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Of same ethnic group as majority of</td>
<td>75</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>population</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owns property in town</td>
<td>30</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Relation living in town:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>20</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Mother's brother</td>
<td>9</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Wife's father</td>
<td>21</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Source: Personal interviews, in the Malaysian town with all doctors, in the Indonesian town with a random sample of 56 out of 110.

Table 3.2

**Membership in organizations**

<table>
<thead>
<tr>
<th>Number of organizations joined</th>
<th>Per cent doctors in</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indonesian</td>
<td>Malaysian</td>
</tr>
<tr>
<td></td>
<td>town (n = 56)</td>
<td>town (n = 23)</td>
</tr>
<tr>
<td>0</td>
<td>5</td>
<td>22</td>
</tr>
<tr>
<td>1</td>
<td>43</td>
<td>22</td>
</tr>
<tr>
<td>2-4</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>5 and more</td>
<td>7</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: Personal interviews (see Table 3.1).
involvement is fairly low. This impression is further strengthened if we scrutinize the type of organizations in which doctors participate.

In Malaysia there were prominent among these organizations the specialist medical associations, automobile associations and the Rotary Club. Most of the organizations had no local activities; those which had them like religious bodies, sports and social clubs, political parties, school associations, etc. were generally shunned. The major exceptions were members of the Rotary Club that united local business, professional and civil servant elites and engaged in occasional benevolent activities, and two private practitioners who were active in other local organizations.

Involvement of bomohs in community affairs

For the bomoh we can ask similar questions about social participation. Is he attached to formal associations within the community? Is the bomoh in the centre of diverse social networks, or does he remain on the periphery? He commands an authoritative position in bomoh-patient relationships and in mediation between men and spirits. Does this grant him in addition a superior status in other relationships between human beings (see Endicott, 1970)?

(a) Structural and emotional ties. It is very clear from the interviews with Malay bomohs that they are attached to the communities in which they work and reside. Their primary identification is with the local community. Nearly always they are tied economically to the village. At the very least, all own, or their spouses own, the house and land where they live. For most, agricultural land or other business interests reinforce the economic tie to the community. Furthermore, almost all the bomohs were born in the village where we interviewed them, and most of their spouses too.

Beyond the ties of property and kin, bomohs liked their respective communities. Usually, the source of this affection seemed to be their sense of belonging. Most said they felt that the village was their own place, their home ground, the place where their kinsmen were. Although a few cited other, work-related reasons for liking their own village and wishing to remain, the affection for the local community was still there. Only one Malay bomoh, a highly successful one, acknowledged a vague desire to leave, but implied that the
demands of his practice tied him to the village.  

This nearly unanimous expression of attachment to the local village contrasts sharply with the stance doctors took in the nearby town (see above). Comparatively speaking, then, bomohs were much attached to the local community. What about their social role as participants in community life?

(b) Non-medical advice. For bomohs as for doctors, one form of social participation might be acting as confidant. To find out whether they did this, each bomoh was asked whether people ever came to him for advice on non-medical matters. One said that people did seek his advice on family matters and on problems of locating employment. Another said village officials consulted him whenever a local project was to be undertaken - whenever a road or roadside shelter was to be constructed, or a mosque improvement to be made. Another said people sometimes sought his counsel about marital difficulties. Most bomohs, however, said that individuals came to them only for specific, medical purposes. One even replied, 'No, I'm no good [at giving advice] about other things. I can't!'

(c) Articulating needs. Since the Malaysian government has impressed upon peasants, as well as upon other citizens, that the key to national progress is rural development, one service knowledgeable local elites could perform is the specification of community needs. The following local difficulties were mentioned once by the four bomohs who were able to specify problems: unemployment; poor interpersonal relations in the village; an inadequate irrigation system; the difficult life fishermen led; poor nutrition of farmers. Six bomohs either failed to grasp the question which asked them to specify any local problems they perceived, or replied that there were none. Although individuals may have been reluctant to disclose community difficulties, the rather low number of problems mentioned may also reflect the

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8 The latter problem was cited by a non-Malay practitioner from another state who wanted nothing more than to rejoin his family there.

9 For one bomoh, there was no opportunity to enquire about this issue.
generally favourable economic status of bomohs. While not ostentatiously wealthy, even by village standards, most bomohs were far from the bottom of the economic ladder. In general, bomohs were uncomfortable specifying problems. Yet it is precisely through articulating local needs that indigenous elites such as bomohs could participate effectively in community life.

(d) Membership in associations. One obvious method of social participation is through friendships. Although these bomohs were engaging conversationalists, their homes were by no means gathering places for the community. They have friends, who may even include the village headman or a mosque official. The overwhelming impression, however, is that an active bomoh is a busy man - too busy to sit around neighbours' porches or the local coffee shop. What about memberships in voluntary associations? Only four of this group, as far as we are aware, participated in organizations, with six affiliations between them. There was:

- (i) a member of a farmers' co-operative,
- (ii) a hospital-workers' union member, who was also
- (iii) a member of a government employees' co-operative,
- (iv) the head of a local branch of a political party,
- (v) a member of the executive committee of a youth club, who was also
- (vi) an officer of a funeral association.

Overall, the data on organizational affiliations - like those on other measures of social participation - suggest only marginal involvement in community affairs.

**Summary and conclusions**

The conclusion is that these bomohs are not generally involved in community affairs. They were not averse to

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10 In studies that touch on the social role of the traditional medico-religious practitioner in various societies, there seems to be considerable variation in the extent to which he involves himself in diverse community affairs. For example, see Gelfand, 1964, on Rhodesia, and Spiro, 1967, on Upper Burma.
medical innovations in public health and could be integrated into the national health care system as lower level health personnel. (One is already so integrated: unknown to the hospital administrators, he is in charge of the hospital mortuary.) Beyond the area of public health, however, the prognosis for bomohs' participation in other community efforts is not good. The paradox is that, far from being 'traditional', it is precisely the 'modern' way they construe their role, with the apparent emphasis on rule specificity and specialization, that hinders their involvement in community affairs.

In addition, a general reason for the very limited leadership for bomohs in community affairs is their ineffectiveness as 'cultural brokers' between the village and the wider society. Unlike doctors, or even village headmen, bomohs carry no weight at the national, or even regional, level. Unlike more westernized personnel, they possess few if any links to national or regional sources of power. Yet it is at these levels, beyond the boundaries of the village, that the crucial decisions regarding the future of the Malay peasant will be made. The bomoh's exclusion from these circles limits his involvement in community affairs and his influence, even upon villagers.

Our study finds that professionals - doctors and bomohs alike - show limited involvement in community affairs, minimal contributions to general social development and low efficacy in modernization outside their professional field. In fact, highly modernized training and the high individual modernity of professionals themselves appear to be the major obstacles. Relative over-professionalization has led to a three-fold process of differentiation: between specialized professional activity and general interaction, between the professional elite and the lower classes, and between the socio-political centre and the provincial periphery.

These findings cast some doubt on the widely accepted view that because 'a modernizing society is a professionalizing society' increased specialized training of professionals and increased deployment of experts would be a useful development strategy.
Chapter 4

Thailand: an indigenous professional structure?

T.H. Silcock

Background of the professional structure

Modern Thai professions were imported from the West; but it has made a difference that they were not imported during a colonial period. Training was not begun in a foreign language; Thai was used, but pragmatically, not as a protest against foreign influence. Thais could, and did, train in countries with several different languages; and until fairly recently most technical terms were coined in Thai, from its own Sanskrit roots.

The absence of a colonial period also enabled the relation between Buddhism and education to survive: Buddhist temples had transmitted much of the traditional Thai medical knowledge, and at first an attempt was made to base modern medical ethics on Buddhist ethical teaching.

This might have ensured the gradual development of a professional structure and ethic adapted to Thailand's economy and needs. However, outside pressures, which at first were quite involuntary, and later intended to help, prevented this from happening.

The need to keep up appearances was at first part of the diplomatic strategy. Laws were often enacted which conformed to Western norms, with no real hope or intention of enforcement. Professional structure has, in the main, followed the same pattern up to the present time. Doctors, accountants and engineers all nominally perform tasks which differ widely from what they actually do. Much of what they actually do makes the professions, on balance, more useful to the Thai society and economy; but because of what they nominally do, their actual tasks receive too little attention, either in improving their skills or in enforcing ethical standards.
(a) The professions and education. If the professions were confined to Thai society alone, they could certainly be adapted to Thai cultural values and economic realities. However, foreign pressures, through the education system and the Civil Service Commission, enforce instead a superficial conformity to foreign professional norms.

The educational structure of Thailand is intensely competitive. At least from about the third year of primary school the main aim of parents and teachers (and later of students also) is to succeed in reaching a higher rung on the educational ladder. The character of the teaching and the syllabus at each level is influenced far more by the requirements of those who will go further than by the needs of those for whom that level is terminal. This is not because Thai education is deliberately planned in this way by the civil servants responsible, but because overseas study has become the criterion of success, giving access to all the elite positions.

The expansion of primary education in the last fifty years has been dramatic. Five and a half million children were in elementary schools by 1970 - some 90 per cent of the children in the age groups corresponding to the initial years of schooling (Thailand, National Statistical Office, 1970-71, Tables 13, 51). It had not proved possible to expand secondary education correspondingly. Even in the last three years of the seven year elementary education the number in school was only about one tenth of that in the first four years. Staffing of secondary schools in remote areas is almost impossible, because the aim is to recruit graduates and train for university entrance. Universities, however, have become so oriented to overseas higher studies that rural teaching positions are professionally frustrating as well as a source of personal hardship.

About half the secondary students are in schools run by missionaries or other private groups: ideology, high fee income, freedom from civil service rules, or a combination of any of these may give them a better supply of secondary teachers. Though statistics are not available, general observation suggests that these schools do not weaken, and may even aggravate, the tendency for secondary education to be confined to Bangkok and the larger towns.

Thais have long known that secondary education was producing too many failed university entrants with relatively
little relevant training. They have tried to set up voc-

ational secondary schools, but the lower level ones have not

been popular with parents; only higher-level ones, leading

to a highly capital intensive technical college education,
or to direct opportunities for training by firms overseas,
have proved acceptable.

More recent efforts to educate for intermediate levels

have stressed general secondary education courses, and

comprehensive schools. In accordance with modern American

thinking, the aim has been to discourage competition, but

so far with very little success: the numbers attempting

university entrance classes continue to increase. So long

as overseas study commands so much status and income, and

such study depends so much on university degrees, competition

is likely to continue; it might be more efficient to accept

this fact and try to use it.

(b) The Civil Service Commission. The Thai Civil Service

Commission cannot be accused of aggravating these pressures

by paying high incomes to professionals: it has resisted

strong internal, and even external pressures, and kept

official government incomes low. It fully appreciates that

many civil servants will not be content with their salary

and that departments have to arrange supplements to make up

the expected income. The supplements officially recognized

are allowances, profits from official membership of state

industry boards, multiple jobs, especially in rural areas

(e.g. holding office in the province and the municipality)

and such fringe benefits as study leave on pay. The

Commission is also very well aware of irregular incomes, and

appears to be discriminating in its attitude to these. For

example, participation in business through family connections,

though barred by civil service discipline, appears not to be

actually illegal, and to be practised much less secretly in

Thailand than in most western countries.

The Commission's influence pervades the whole service,
enforcing uniform grades and rules for promotion based on

educational attainment.1 The structure, British in origin,

1 After a long campaign by American experts, the Commission

has now been converted to position classification rather

than personal rank, and introduced this into some departments;
since pay scales have not yet been adjusted, the effect has
so far been slight (see Barbour, 1964; Fisher, 1965 [a and
b]; McCrensky, 1969).
was modified after the 1932 revolution to introduce some traditional features based on Thai military practice (Thailand, Civil Service Commission, n.d.).

Table 4.1 shows the 1972 salary structure: classes overlap in pay, but are important for status and privileges. Rules determine which classes may be appointed to such positions as clerk, division chief or director-general, even in technical departments.

Table 4.1

<table>
<thead>
<tr>
<th>Class</th>
<th>Grade</th>
<th>Salary steps (Baht per month)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1</td>
<td>540 - 570 - 600 - 630 - 660</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>690 - 720 - 750 - 780 - 810</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>850 - 900 - 950 - 1,000 - 1,050</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>1,100 - 1,150 - 1,200 - 1,250 - 1,300</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>850 - 900 - 950 - 1,000 - 1,050</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1,100 - 1,150 - 1,200 - 1,250 - 1,300</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1,400 - 1,500 - 1,600 - 1,700 - 1,800</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1,300 - 1,400 - 1,500 - 1,600 - 1,700</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1,800 - 1,900 - 2,000 - 2,150 - 2,300</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2,450 - 2,600 - 2,750 - 2,900 - 3,050</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2,750 - 2,900 - 3,050 - 3,200 - 3,350</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3,500 - 3,650 - 3,800 - 3,950 - 4,100</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>4,250 - 4,400 - 4,600 - 4,800 - 5,000</td>
</tr>
<tr>
<td>Special</td>
<td>1</td>
<td>4,400 - 4,600 - 4,800 - 5,000 - 5,200</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5,400 - 5,700 - 6,000 - 6,300 - 6,600</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>7,000 - 7,400 - 7,800 - 8,200</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>8,600</td>
</tr>
</tbody>
</table>

Special examinations are held for transfer of civil servants between classes, except the special class. Many, however, enter the service in the third or second class, at points determined by their qualifications awarded by outside bodies, in accordance with a Civil Service Commission system of recognition. For other Asian universities the entry point is normally lower than for Thai universities because, for Asia, recognition is based on required years both in the course and in primary and secondary schools; and these are less in some Asian countries than in Thailand. Japanese universities are treated as equivalent to Thai. The Commission gives higher recognition — above Thai universities, except for doctorates — to the universities of North America, Australasia and Europe.

The Civil Service Commission's criteria probably reflect fairly closely the Thai elite's values. They feel strongly that Thailand must learn Western techniques and its leaders must be able to imitate Western technical achievements and gradually bring the rest of the country up to them, largely for the sake of recognition as an equal nation.

The same sense of national status and desire for recognition as an equal affect the behaviour of Thai professional associations. The Thai Medical Association, the Institute of Certified Accountants and, to a lesser extent, the Institute of Engineers, play active roles in international professional associations. Though, unlike many professions in less-developed countries, they operate in their own language, and experience some language barrier, they try to participate as much as they can, and to minimize the differences in professional practice between Thailand and Western countries.

The medical profession

(a) Historical background. Siriraj Medical School, the first in Thailand, was opened in 1889 after simultaneous epidemics of smallpox and cholera in Bangkok. Initially it taught Western and traditional medicine side by side (Bidyabhed, Luang B., 1958) and its course in medical ethics by Prince Pia Malakul was the basis of a text book *Janyaphaet* (The Doctor's Code) deriving a doctor's obligations from Buddhist ethics (Songkarand Neyomsen, 1972). The three-year medical course was expanded to five years in 1913 as the staff expanded. While Siriraj was developing Prince Damrong
Rajanuphap built up a Department of Health Care, chiefly concerned with hospitals, vaccination and distribution of approved drugs; in 1905 it began appointing, for each tambol (parish) one traditional doctor trained on the job to give prophylactic injections, record births and deaths, and administer approved modern drugs. In spite of continued medical opposition, these officially recognised doctors still survive.

Thai medicine changed radically after World War I as a result of the interest in public health of Prince Mahidol, father of the present king of Thailand, who personally took first a Certificate in Public Health and later a medical degree at Harvard. Convinced of the importance of western medical standards for raising the level of health in Thailand he arranged much higher salaries for doctors and used both his personal funds and public funds to send Thais abroad for medical study (Sud Saengwichien, pp.1-20 and A.G. Ellis, pp. 312-78 in Faculty of Medicine and Siriraj Hospital, 1965). The Rockefeller Foundation, which he had contacted initially through a hookworm eradication campaign, financed a wholesale expansion of medical training for Thailand. Doctors so trained could not earn adequate incomes in country practice and they were encouraged at first to enlarge their practices by training local assistants. The high cost of rural medical services also caused the government, during World War II, to establish a four-year training course for assistant doctors at Lopburi. But by the 1950s doctors trained to international standards were strong enough to secure the banning of all lower-level training; and in 1972 a Government announcement of a plan to amalgamate the Medical and Public Health Departments provoked a massive demonstration by doctors.

(b) Present structure: distribution. Adequate information about the profession's present structure is lacking because there is no effective policing of medical qualifications, whether traditional or modern. The Act for the Control of the Practice of the Art of Healing, 1946, and the Medical Profession Act, 1968, are both dead letters, so far as protection of the public is concerned.

Traditional doctors must, under the former Act, as amended up to 1968, have had three years certified training under a practitioner (Ministry of the Interior, 1968, Section 15(a); Ministry of the Interior, regulations, n.d., Chap. 1, Article 4), followed by an examination in a regional centre, on a syllabus approved by the Department of Public Health. They
must notify all changes of address to the district officer. Presumably, therefore, district officers know the number of traditional doctors, but no figures are published; it is probably appreciated that they would be meaningless. Traditional doctors do seek registration, which gives them protection and status with their patients, but many practise without it, and virtually all practise illegally some modern medicine, for which drug advertising has created a demand. The Department of Public Health, on request, gave the national total of traditional doctors for 1972 as 58,749. This represents a plausible ratio of one traditional doctor to approximately every six hundred of the population, but its apparent accuracy is clearly spurious. One not very satisfactory series of figures for this national total, from 1958 to 1966, appears in a medical manpower study of 1966 by the National Economic Development Board (NEDB Manpower Planning Division, 1967); it is presumably based on some records not normally available to research workers, but the method of collection is not described, and the series is not consistent with the above figure for 1972 nor with the 1960 census. The series begins at 27.3 thousand in 1938, rises irregularly to 34.3 in 1958 and then declines to 33.9 in 1959, where it remains almost unchanged to 1966. The 1960 census figure for medical workers not elsewhere classified, working as employers or on their own account of 4,331 (National Statistical Office, 1960) probably represents traditional or other unregistered medical practitioners, but clearly most of them practise part time and would be classified as farmers or in other occupations.

The figures for 'modern' doctors are no more consistent: registration is lifelong and nation-wide, so no one knows, except through ad hoc surveys, where doctors are; estimates vary from under four thousand to nearly six, and the detailed physician/population ratio figures are clearly unreliable. The first question is how many unqualified doctors profess to be qualified. Many certainly practise various parts of modern medicine illegally: they include not only traditional doctors but also 'injection doctors', who may have no qualification at all, and nurses and sanitarians who also often conduct clinics. Probably, however, they do not usually forge licences to practise. Doing this would both increase the risk that qualified doctors would inform against them and make defence more difficult; all those offering modern drugs and injections, including pharmacists, are called either 'market doctor' or 'modern doctor', and as such obtain an adequate flow of patients, though a medical
or pharmacist's licence raises the price.

Probably the best known series for licensed modern doctors is that published in the official Statistical Yearbook: this shows a total number for the whole kingdom rising from 3,402 in 1960 to 4,054 in 1964 and 5,329 in 1969.

These figures are calculated from a cumulated total of registrations with an estimate of deaths, based mainly on life tables. No allowance is made for those ceasing to practise, because of retirement, change of occupation or promotion to administrative rank (some three-quarters of doctors are government servants), or leaving the country.

The 1960 Census shows 2,330 physicians and surgeons. Thus 1,072 doctors enumerated in the Yearbook are omitted from the Census. The movement of doctors abroad was not recorded until the middle sixties. It is largely guesswork to estimate how many were abroad at this time, but there were probably no more than three or four hundred, mainly taking specialist training overseas.

This would indicate that more than six hundred qualified doctors had either left practice altogether or taken up administrative, teaching, or other work, under which they were listed for census purposes. Probably all but one or two hundred would be in medical administration, university teaching or semi-retired, and could for our purpose be included as licensed doctors.

Some further information can be derived by comparing with the 1960 census a Department of Health survey (Department of Public Health, 1959) of the distribution of doctors in 1959 (see Table 4.2).

This was conducted in the provinces and separate figures for Bangkok and Thonburi appear not to have been available; the whole kingdom total almost coincides with the Statistical Yearbook figure, which is based on registrations, and it was probably therefore an estimate made in the same way. The Bangkok-Thonburi survey figure is plainly too large; later figures are hardly consistent with a figure of nearly 2,500 as early as 1959; but the census figure for doctors in Bangkok-Thonburi may be too small: some doctors working there probably lived in the outer suburbs in adjacent provinces; and, as we have seen, several hundred qualified and practising Bangkok-Thonburi doctors were university
Table 4.2

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of doctors (1959 survey)</th>
<th>Number of doctors (1960 census)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangkok-Thonburi</td>
<td>2,46</td>
<td>1,553</td>
</tr>
<tr>
<td>Four adjacent provinces*</td>
<td>53</td>
<td>108**</td>
</tr>
<tr>
<td>Rest of Central Region</td>
<td>265</td>
<td>338**</td>
</tr>
<tr>
<td>North</td>
<td>165</td>
<td>202**</td>
</tr>
<tr>
<td>Northeast</td>
<td>157</td>
<td>126</td>
</tr>
<tr>
<td>South</td>
<td>165</td>
<td>243**</td>
</tr>
<tr>
<td>Total</td>
<td>3,272</td>
<td>2,570**</td>
</tr>
</tbody>
</table>

* Pathum Thani, Nonthaburi, Samut Prakan and Nakhon Pathom.
** These figures include about 240 dentists not separately shown.

Source: Department of Public Health, 'Number of Population and Physician/Population Ratio by region and province, inside and outside municipality areas, Thailand: 1959' (Mimeo, privately supplied); National Statistical Office 1960 Population Census: Whole Kingdom volume, Northeast Region volume, Changwad volumes, Tables 16 and 17.
teachers or medical administrators and may have been so recorded.

If the figures are studied by province the degree of consistency between the 1959 survey and the census becomes even less: in ten provinces out of the sixty-nine the census figure was double (or more) the survey figure; in five it was half or less. The approximate equality of the country figures - when allowance is made for the dentists included in the census figures - is deceptive. The survey figures are larger in areas with one small government hospital and one or more first-class health centres; doctors try to leave such areas and are often absent on temporary transfers, though recorded on the strength. In the prosperous areas with many private doctors - in the south and the rapidly growing area in the north-east of the central plain - the survey figures are less than those of the census. Here there may have been more than average growth during the year 1959-60; there may well be more dentists included in the census figure; and the survey probably under-records private practice.

The general picture that emerges is that, in 1959-60, there were probably between 2,900 and 3,000 qualified doctors practising, some 450 less than the official figure based on registrations less deaths. Perhaps two-thirds of those not practising were abroad and the rest in non-medical work in Thailand. Of those practising about two-thirds were in the capital and four adjacent provinces with about one-third in the other sixty-five provinces. Even there doctors were heavily concentrated in four areas: Songkhla (64) the centre of the mining and rubber-growing area in the south, Chonburi (53) the tourist and industrial centre in the southeast, Chiangmai (44) the northern capital and Ratburi (37) the most prosperous agricultural area in the country. (These figures include some dentists.) The other sixty provinces - four-fifths of the population - had only a little over six hundred doctors, or about one for every thirty thousand people.

How has the pattern changed in the last decade? Fully comparable figures are not available. Publication of the 1970 census has been seriously delayed; and in spite of the recent public interest in the 'brain drain' of doctors, the Statistical Yearbook figure is still based on cumulative registration less deaths. The latest Yearbook gives 5,322 doctors for 1969; and the 1972 figure, privately supplied by the Department of Health, is 5,980. These figures clearly
do not allow for a minimum of 1,500 Thai doctors now overseas.

Three other recent sources of information are the medical manpower survey for 1965 by the National Economic Development Board; another Department of Public Health survey (Department of Public Health, 1968) of the regional distribution of doctors in 1968; the annual Thai Medical Directory for 1972; and a large sample survey of doctors taken in 1971-72 by a Thammasat University graduate student (Dow Mongkolsamai, 1972). Miss Dow did not attempt to reconcile the different sets of figures; this is attempted below; but they are all clearly much lower than the Yearbook figures.

Table 4.3 shows the different surveys of the distribution of doctors from 1965 to 1972, including Miss Dow Mongkolsamai's count from the 1971 directory. Clearly the figures are neither reliable nor fully compatible and there is no information as to how the first two were collected. The 1965 survey seems rather more sophisticated than the 1968 one. It does refer to 'enquiries from hospitals all over the country' and to doctors who 'are actually there'. However, the greater awareness of brain drain problems in 1970 than in 1967 may have led to more care in the 1968 than in the 1965 figures to omit doctors absent for overseas study. It is noteworthy that the 1965 study accounts for the 300 registered doctors not practising in the following terms: 'they may have transferred to practise another profession abroad or ceased practising their profession'. Those merely absent for specialist study were probably counted.

The 1971 and 1972 directory counts were not made by the same method. Miss Mongkolsamai used the separate classified lists and checked individually for double counting. The 1972 count analysed the consolidated list, according to addresses given. The 1971 figure will be too large wherever the same name occurs undetected in two lists; with long lists not arranged in strict order such names are easy to miss - Miss Mongkolsamai found a 16 per cent overlap between hospitals and clinics in the directory, while the overlap in her sample check was 35 per cent. The 1972 figures will be too small where practising doctors are omitted from the general register. A check on most of the provinces showed one or two per province in institution lists but not in the register; some of these will be due to error, but some may be doctors seconded abroad for further study who are rightly omitted. Moreover, the Chiangmai University list includes many lecturers qualified in non-medical subjects, and the
### Table 4.3

Distribution of physicians and surgeons by region according to different surveys 1965 to 1972

<table>
<thead>
<tr>
<th>Region</th>
<th>Bangkok-Thonburi</th>
<th>Four adjacent provinces</th>
<th>Rest of Central Region</th>
<th>North</th>
<th>Northeast</th>
<th>South</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEDB Medical Manpower  Survey 1965</td>
<td>2,191</td>
<td>156</td>
<td>643</td>
<td>451</td>
<td>420</td>
<td>412</td>
<td>4,273</td>
</tr>
<tr>
<td>Dept of Public Health Survey 1968</td>
<td>2,095</td>
<td>193</td>
<td>530</td>
<td>517</td>
<td>258</td>
<td>327</td>
<td>3,920</td>
</tr>
<tr>
<td>Estimated 1972 position</td>
<td>2,400</td>
<td>160</td>
<td>420</td>
<td>400</td>
<td>260</td>
<td>260</td>
<td>3,900</td>
</tr>
</tbody>
</table>

**Notes:**
1. Pathumthani, Nonthaburi, Samut Prakan and Nakhon Pathom. All these provinces contain commuting areas for the Metropolis and doctors may be listed there who work in Bangkok.
2. Includes 28 doctors with address insufficiently identified, but apparently not in Bangkok.

**Sources:**
same may happen in Bangkok. Allowing for these differences the 1971 and 1972 figures are reasonably consistent.

Though we cannot treat the four sets of figures as fully comparable, the total number of doctors practising in Thailand probably declined, at least slightly, not only relative to population but absolutely, between 1965 and 1972, and the quite substantial increase in the number of rural doctors from 1960 to 1965 was apparently followed by a decline. The lowest row of the table is a roughly rounded-off estimate raising the 1972 count in regions where omissions seem most likely. The 1965 figure as given is probably too high - the true total figure, allowing for brain drain, may be a little under 4,000, with some 1,800 outside the greater metropolitan area, as compared with, say, 3,900 and 1,350 respectively in 1972.

This interpretation is consistent with information about the 'brain drain' of doctors from Thailand. Firm official figures are available only from 1965 to 1969 inclusive (NEDB Manpower Planning Division, 1972) and show a net outward migration of at least 1,178 doctors, almost exactly sufficient to offset the increase of registrations less deaths. Doctors reached their maximum in 1967. The net outflow probably continued, but the rate may have fallen, in 1970 and 1971, because foreign doctors' opportunities in the United States were more restricted. As the first graduates from the new Ramathibodhi Medical School expanded the 1971 output of new doctors, the 1972 total figure of doctors in Thailand may be a little above that for 1968.

The figures suggest that there was little or no brain drain between 1960 and 1965.

(c) Earnings and practice. To understand these developments, we must know something of the economic structure of the Thai medical profession. Medicine is expensive to enter, and highly competitive - the profession most preferred by wealthy, ambitious and able people (Udom Kerdpibule, 1970); a Western background - reading and speaking some English at home - and finance for six full years of study, are almost prerequisites. Most medical students seek government appointments, preferably in teaching hospitals. This is emphatically not because government salaries are attractive. Doctors, like all professionals, are paid salaries restricted within a rigid framework by the Civil Service Commission (Thailand, Civil Service Commission, 1972:55). They begin at
1,900 baht per month (roughly U.S.$95) for those with a Thai medical degree plus internship, or 2,000 baht per month if the degree is European, American or Australasian. In a private hospital or clinic a newly qualified assistant normally earns 6,000 baht, nearly half-way up the special-grade government scale; some private hospitals pay virtually new graduates 9,000 and drug companies even more. Obviously, therefore, government employment leads to private income opportunities at least twice as great as the salary.

Doctors' incomes are a closely guarded secret, mainly because of income tax from which, fairly recently, doctors ceased to be officially exempt. However, most doctors are willing to give information about the profession in general, which helps to build up an overall picture. If asked to name an average ratio between a government doctor's salary and his total income, most knowledgeable informants say about one to five. The minimum income most consider necessary is about 10,000 baht per month.

Additional income is earned from several sources, all well known—at least in outline—in Thailand. The main resource is to operate clinics, or even private hospitals, nominally outside office hours. Another is contract service to large firms, required, by labour legislation, to provide medical service to their workers. For a fee of 3,000-5,000 baht per month doctors, nominally outside office hours, will look after a firm's medical needs.

It is impossible to say precisely how much of the private medical practice is undertaken—in or outside government time—by those on government salaries. Just under 40 per cent of all government doctors listed in the 1972 directory are also listed under private clinics; this excludes government doctors working on contract for private firms, those working part-time in the clinics of others, and those practising from an unlisted home address. Even with these exclusions combined government and private doctors are nearly twice as numerous as private only.

The total amount spent in private clinics and hospitals

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2 An account of several of the practices of the medical profession in earning supplementary incomes, both in urban and in rural areas is given in Suwanni Sukhonthaa's famous novel *His Name was Kaan*, Bangkok Khlangvithaya Press, 1971 (in Thai).
can be roughly estimated from the Utilisation of Health Manpower Survey (Ministry of Health - Somboon Vacharotai and others, 1970). If we take the individuals surveyed in each region as representative and multiply the number of illnesses treated in clinics and private hospitals, and the total amount spent in clinics and private hospitals, by the ratio of the whole population to the sample, we can get a very rough idea of the economic shape of the profession's private sector. The sample was, in fact, almost certainly rather richer than the whole population (see pp. 7-8 of the survey). The upper half of Table 4.4 gives figures, calculated for regions and the whole kingdom, on number of treatments in private clinics and hospitals, and total expenditure there, and relates them to the estimates already given of numbers of doctors from the current medical directory, and also to adjusted numbers of those listed as engaged in private practice (whether or not they also hold government appointments). Private practices were counted at the same time as total doctors; where the total figure was subsequently adjusted to give the last line of Table 4.3, the figure for private practices was adjusted proportionally in this table. It must be emphasized that these figures give only a very rough indication of the situation in the whole country, and we know far too little about the sampling to attempt to give a quantified estimate of reliability.

The first point that needs to be made in interpreting Table 4.4 is that treatments and expenditures in the sample were recorded by households, not by where the treatment was given. The ratios between doctors and treatments or expenditures can be significantly falsified if there is any considerable movement between one region and another for treatment. Clearly, for all the most expensive treatments there will be considerable movement between the other regions and the metropolis, which contains most of the large hospitals and every teaching hospital but one. If the sample were representative, there would be five times as many treatments, and nearly four times as much spent, in private clinics and hospitals, outside the metropolis as in it, yet there are some 60 per cent more doctors, and 30 per cent more in private practice, in the metropolis than outside. Clearly a fairly substantial proportion of the treatments and a higher proportion of the expenditure (because it is on specialist services to wealthy patients) is likely to be recorded in the outer provinces but spent in the metropolis, because it represents patients from outside coming in for treatment.
<table>
<thead>
<tr>
<th>Table 4.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate of number of treatments and of expenditure, in private clinics and hospitals, total and per doctor, by regions, per month 1970</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Metropolitan</th>
<th>Other Central</th>
<th>North-east</th>
<th>South</th>
<th>North</th>
<th>Whole Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncorrected estimates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of treatments in private clinics and hospitals '000</td>
<td>181.0</td>
<td>287.6</td>
<td>220.5</td>
<td>187.2</td>
<td>45.4</td>
<td>350.4</td>
</tr>
<tr>
<td>Expenditure on private clinics and hospitals, baht mn</td>
<td>27.3</td>
<td>52.4</td>
<td>26.0</td>
<td>17.1</td>
<td>9.1</td>
<td>131.9</td>
</tr>
<tr>
<td>Number of treatments in private clinics and hospitals per doctor</td>
<td>75</td>
<td>496</td>
<td>848</td>
<td>720</td>
<td>411</td>
<td>267</td>
</tr>
<tr>
<td>Expenditure on private clinics and hospitals per doctor, baht '000</td>
<td>11.3</td>
<td>90.3</td>
<td>100.0</td>
<td>65.7</td>
<td>22.7</td>
<td>33.8</td>
</tr>
<tr>
<td>Number of treatments in private clinics and hospitals per doctor practising privately</td>
<td>161</td>
<td>1006</td>
<td>1670</td>
<td>1088</td>
<td>795</td>
<td>543</td>
</tr>
<tr>
<td>Expenditure on private clinics and hospitals per doctor practising privately, baht '000</td>
<td>24.4</td>
<td>183.2</td>
<td>197.0</td>
<td>99.4</td>
<td>44.0</td>
<td>68.9</td>
</tr>
<tr>
<td>Corrected estimates:*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of treatments in private clinics and hospitals '000</td>
<td>363</td>
<td>207</td>
<td>173</td>
<td>152</td>
<td>145</td>
<td>350</td>
</tr>
<tr>
<td>Expenditure on private clinics and hospitals, baht mn.</td>
<td>55.6</td>
<td>34.6</td>
<td>19.8</td>
<td>14.3</td>
<td>7.67</td>
<td>131.9</td>
</tr>
<tr>
<td>Number of treatments in private clinics and hospitals per doctor</td>
<td>130</td>
<td>357</td>
<td>665</td>
<td>585</td>
<td>362</td>
<td>267</td>
</tr>
<tr>
<td>Expenditure on private clinics and hospitals per doctor, baht '000</td>
<td>20.0</td>
<td>60.0</td>
<td>76.1</td>
<td>55.0</td>
<td>19.0</td>
<td>33.8</td>
</tr>
<tr>
<td>Number of treatments in private clinics and hospitals per doctor practising privately</td>
<td>324</td>
<td>724</td>
<td>1311</td>
<td>884</td>
<td>700</td>
<td>543</td>
</tr>
<tr>
<td>Expenditure on private clinics and hospitals per doctor practising privately, baht '000</td>
<td>50.0</td>
<td>121.0</td>
<td>150.0</td>
<td>83.1</td>
<td>36.7</td>
<td>68.9</td>
</tr>
</tbody>
</table>

* Half number of treatments and half expenditure of 'rich' persons in sample figures in Ministry of Health loc. cit. were applied to a proportion of the whole population in each region similar to that of 'rich' in the sample and the calculated number of treatments and amount of expenditure were transferred from that province to Bangkok, to allow for patients living in provinces and travelling to Bangkok for treatment (see text for explanation).

Sources: Ministry of Health, 'Draft Report on the Result of Survey of the Utilization of Manpower and Expenses Incurred in Medical Treatment of the People', Bangkok, 1970 (mimeo) Tables 7 and 11; National Statistical Office, **Statistical Yearbook of Thailand, 1970-71**, Bangkok, Table 12; estimates of numbers of doctors based on Table 4.3 above. For methods of estimation see accompanying text.
We should not infer from this that the number of treatments per doctor in the metropolis is likely to be near the national average. Those coming to Bangkok will be the wealthier ones, and the doctors to whom they come will be specialists or other doctors with a high reputation. Treatments will be longer and more expensive. We may assume, tentatively, that only those classified as rich in the survey will be going to Bangkok for treatment, and assume further that half the treatments of the rich and half the expenditures by them from the Central, South and Northeast regions, and a quarter of each from the North (in which there is a teaching hospital at Chiangmai) are by or for doctors in Bangkok.

The effect that these assumptions would have are set out in the lower half of Table 4.4. (Classification of treatments and expenditures by economic status may be found on p. 33 of the survey.) This shows just over 300 treatments a month per doctor in private clinics and hospitals in Bangkok - about a quarter of the number in the Northeast. The amount spent per doctor working in these clinics is about 50,000 baht per month.

Would this be adequate to prevent (as has happened) an outflow of doctors to other provinces? The corrected amount spent in clinics, etc. by the public per doctor in private practice would still be just over twice as high (107,000 baht) in the outer provinces, including the North, as in Bangkok. To explain the situation we must consider first the structure of clinical practice, next the situation in the North, and finally the nature of the brain drain.

Doctors in private clinics usually charge their uneducated patients only for drugs and actual services (e.g. minor surgery or injections). Traditional doctors did not charge for consultations, and only patients with some western education will pay for them. 'Modern' doctors must, therefore, sell expensive visibly modern, drugs. Many in all classes will pay a premium for drugs and injections from a modern doctor, particularly a government servant; but because drug companies also distribute through traditional doctors, an adequate income can be earned only by handling many patients, mainly on a symptomatic basis. More thorough treatment can (though not easily) be given to educated patients, who understand paying fees for consultation.

A provincial doctor must therefore spend a much larger proportion of his takings on drugs than a Bangkok one. His
average net earnings may well be rather higher; but he must not only endure harder living conditions but work much longer hours. On the other hand, since their supervisors are in the same situation, provincial doctors probably spend less time on their government jobs. Nevertheless, the non-metropolitan doctor has at best more practice in which there is some risk, less opportunity to use his scientific training and poorer facilities. Only where doctors are acutely scarce can he compensate for this by higher income.

Developments in the North give an indication of what happens when a region's supply of doctors becomes excessive. The establishment of the Chiengmai Medical School in 1958 began to bring many more doctors to Chiengmai as staff. As a result private clinics have become less profitable; a higher proportion of treatments takes place in government hospitals than elsewhere - doctors are where they are scheduled to be, not absent (nominally on call) in their clinics. However, almost all Chiengmai University's medical graduates have migrated abroad for specialist training. Faculty members report that virtually every graduate takes the American E.C.F.M.G. examination; and a survey of the ninety-three graduates of the years 1965 and 1966, made by a faculty member two or three years later, found ninety of them abroad.

Chiengmai University graduates were not necessarily more anxious than others to go abroad: a general brain drain study (NEDB Manpower Planning Division, 1972) showed more than the total number of new graduates emigrating in these years. The establishment of Chiengmai University, however, far from orienting its graduates to rural practice produced conditions which made the region unattractive to doctors. A university post can bring reputation, with possible transfer later to a lucrative university hospital in Bangkok; but the work these university teachers do to supplement their relatively meagre incomes destroys private practice as a career in the region.

In the other regions and in Bangkok an approximate equilibrium in the number of doctors appears to have been reached in the late sixties and early seventies; but as more and more new specialists return from overseas, specialist earnings in Bangkok seem to be falling; they cannot fall far without discouraging specialists from returning to Thailand at all. No other city in Thailand has room for any but the commonest specialization - no other city has a thirtieth of Bangkok's population or a sixtieth of its middle-class population (Caldwell, in Silcock, 1967).
To ensure improved rural medical conditions, the Government has imposed an obligation on all Thai students entering Thai medical courses after 1971 to serve the Government for three years after graduation. An earlier scheme — withdrawn after medical student protests — would have allowed exemption to fee-paying students.

(d) Maintenance of medical standards. Formally medical standards are set by three major institutions, though in practice the pressures come from elsewhere. The Committee of the Board of Physicians is the main controlling body that registers and disciplines doctors. The Board comprises all qualified doctors; in its name diplomas and degrees are issued and training institutions recognised; but its functions are exercised by the Minister of Public Health as its President Extraordinary. The Committee, which is not responsible to the Board, carries on such detailed administration as there is; the Board elects ten of its members, but the majority consists of civilian and military medical directors appointed ex officio. This Committee is supposed to draw up regulations relating to registration and professional practice, but has not yet (1972) done so, though it was established in 1968. Its chief activity, apart from drafting its own rules, has been to approve other medical qualifications and to establish fourteen separate Boards to award specialist medical qualifications in Thailand. Only nine cases have been investigated involving professional misconduct in over three years, and disciplinary action has been taken in only two. Nevertheless the doctors are widely described as very independent, and nurses and other professions have sought (so far unsuccessfully) similar constitutions.

The Thai Medical Association is the institution which represents the doctors (as distinct from controlling them). This is mainly a social club, with attenuated professional association functions. Generally speaking it avoids controversy and tries to influence policy unobtrusively: some of its officials promoted the Board of Physicians, but not in the Association's name; even in the 1972 protest against the proposal to amalgamate the Departments of Medical Services and Public Health, the Association took no official action. Its chief political gestures have been to throw out a bill to allow licensing of assistant doctors after five years' practice, and destroy the four-year-course medical school at Lopburi. It does not concern itself with medical ethics or training as its constitution requires, but has, for fifty-five years, run a monthly technical journal.
The medical faculties of the universities nominally help to maintain standards by designing the medical syllabuses; but a three-cornered structure influencing syllabuses makes departures from overseas models extremely difficult.

The National Education Council must approve all syllabus changes; and its chief concern is parity with overseas institutions in credits, course-work, etc. This parity in turn is based on the Civil Service Commission's elaborate system of evaluating degrees, for salaries in government service. Any wide departure from overseas standards would either bring in registration of lower-salaried doctors (based on a shorter course) or wreck the carefully worked-out parities among Asian degrees (lower level) and American, European and Australasian (higher level). The Civil Service Commission would protect its classifications - e.g. would oppose retraining and upgrading the functions of traditional doctors (as has been done with midwives) and putting them into the lower professional grades. It favours short-course assistant doctors and has been studying some overseas models; but training of assistant doctors would generate divisions in the profession and hence be opposed (at least tacitly by the Thai Medical Association) by senior doctors in the departments.

The original hypothesis of this research was that professional bodies, such as the Thai Medical Association, applied pressures to preserve medical standards. This proves to be an oversimplification. The Association is, indeed, relatively conservative, promoting cohesion among doctors. Senior doctors, who largely run the profession, are responsive to government wishes to improve rural health standards, and aware that this cannot be done by simply training more of the same kind of doctor. They are restrained from radical adaptation of training, partly by a built-in professional structure based on overseas models and partly by a desire to avoid disunity within the profession.

(e) Independence of the medical profession. How dominant are overseas training and other influences, even where these hamper the task of promoting health? How far has the profession retained - or returned to - a synthesis of international medical practices with local conditions?

Enquiries were made in the professional bodies, the training institutions and the National Library about the profession's training, ethics and publications.
Four medical schools train doctors in Thailand; syllabuses of three, situated in different parts of Bangkok, are coordinated within one university structure, Mahidol University. They differ little in their relation to international medicine and the local situation. All teach in Thai but use almost exclusively English texts (only two subjects use standard texts in Thai). In all, a high proportion of graduates take the American E.C.F.M.G. examinations for overseas specialist study. Students learn some popular terms for symptoms, and something of rural health conditions, in their public health courses; but no courses are oriented toward the needs of rural practice - the popular pathologies, the problems of pressure on their time, and the probabilities of prior treatment by traditional or unqualified doctors. American text-books and their teachers' American and European experience - few have any rural experience in Thailand - make American conditions seem normal, and work in the Thai countryside frustrating. In Siriraj there was still some research interest in traditional Thai medicine, but no teaching of it. The Bangkok school with most interest in public health conditions is Ramathibodi: the Rockefeller program there appears to have generated considerable student interest in improving the structure and changing the ideals of Thai medicine.

The Chiangmai Medical School is far from Bangkok and independent of Mahidol University. The curriculum gives considerably more emphasis to clinical experience with patients. It was founded specifically to train doctors more oriented towards practice outside Bangkok, and its senior staff have tried - they themselves admit with little success - to achieve this goal. Most of the junior staff are looking to careers elsewhere: their salaries are inadequate, and in overcrowded Chiangmai they can make little money. Handicapped by their remoteness from Bangkok, they are more than usually concerned to take specialist qualifications overseas or - if they have taken them - to do medical rather than public health research, when they have time for research at all. For this is the source of professional reputation both in Thailand and overseas.

The situation in the medical schools, however, is by no means static. Reform is discussed at all levels although the methods for achieving it are not clear. Three national conferences on Thai medical education have been held, in 1956, 1964 and 1971. These have focused attention on the aims of medical education, steadily shifting it away from
pure medical techniques to personality, character and commitment and from specialization to general medical skill. The Medical Students' Journal carries many articles emphasizing public health and better rural services. At least in the medical profession, unlike other Thai professions, there is widespread questioning.

Medical ethics and practices were, as we have seen, at first considerably adapted to Thai Buddhist culture. Changes since the 1920s have mainly been along three lines: formal assimilation to international practice, greater stress on political loyalty, and less detailed concern with the local task. The doctor is to be a moral paragon upholding an internationally legitimized regime rather than a respected and industrious agent of modernization (Jacobs, 1971, Chapter 2).

The code, issued in articles 25 and 26 of a ministerial regulation of 1942 (Ministry of the Interior, 1942), prohibits advertising, excessive drinking or drug addiction, employing or helping unlicensed healers, issuing false certificates or professional opinions, practising in public, refusing emergency help, divulging patients' secrets except by their permission or to conform to law or official duties, soliciting patients for remuneration, and guaranteeing misleading or secret drugs. This is an attenuated form of the international code, going back to the Hippocratic Oath, though with very inadequate protection of secrets or control of use of drugs. The oath which doctors take has been amended from the original 1928 version partly by substituting national loyalty and unspecified general morality for any specific obligation to their patients and the reputation of their profession, and by requiring them to practise their profession beneficially in accordance with what they have learnt at the university, instead of to work honestly and industriously to cure their patients and keep their secrets.

Literature available to Thai doctors was investigated by interviews and study of library material. Most Thai doctors interviewed kept up one or more subscriptions to foreign societies which included receipt of a journal. At present so many new graduates are going overseas that the situation is almost certainly changing, with foreign journals circulating more widely. A good deal of current medical literature, however, is available in Thai.
Table 4.5 shows, by type and frequency, the different medical journals, for 1970 or 1971, available in the Thai National Library in 1972. Closer scrutiny reveals the total as rather less impressive. The three 'learned society' publications are the Thai Medical Association Journal, a six-monthly surgical journal, and a specialist journal on diabetes which has either ceased publication or fallen far behind on the publication dates. Hospital and Department Journals appear - on a brief inspection - to be similar to most publications of Thai technical departments: namely one or two technical articles - mainly case studies - or translations, and a good deal of news and comment on activities in the organization. There are clearly too many journals for the good material produced, with too little opportunity for firm editorial policy.

(f) Analysis: differences from the international pattern. The training of 'modern' doctors in Thailand differs little from American and British practice, except that oral instruction is given in Thai, with English text-books and many English technical terms. The Government reluctantly tolerates the training of traditional doctors and opposes attempts to modernize the traditional system. Drug advertising has created strong demand for modern drugs and injections, virtually compelling traditional doctors to supply these illegally; they are (ineffectively) forbidden to do this, rather than trained in what they could practically do.

The British-American system is modified not in training but in practice. First the low income of the people of Thailand keeps average personal expenditure on health care low. Household expenditure surveys in 1962-63 (National Statistical Office, 1963, Table 3.0) showed total expenditure on health care per head for the whole kingdom of about five baht per month: roughly four and a half in the country and eight and a half in towns, including expenditure on medicine. The survey cited in Table 4.4 showed an expenditure per head per month of about ten baht - nine in the country, fourteen and a half in the towns, in 1970. Since national income per head at current prices increased nearly 70 per cent during this period, and we might expect both an upward trend (because of advertising, health education, etc.) and a higher percentage expenditure at higher incomes, these figures are roughly consistent.
Table 4.5

Number of journals on medical topics available in 1972 in the National Library of Thailand, for 1970 or 1971, by frequency and type

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Learned society publications*</th>
<th>Publications of Government or Service Departments</th>
<th>Public health journals</th>
<th>Hospital journals</th>
<th>Journals traditional medicine</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly</td>
<td>1</td>
<td>–</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Quarterly</td>
<td>–</td>
<td>2</td>
<td>–</td>
<td>1</td>
<td>–</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>17</td>
</tr>
</tbody>
</table>

* The Bulletin of the Thai Medical Council first appeared in 1972 and seems likely to become, in part, a learned journal, but is not included in these figures.

Source: List prepared by Thai National Library and examples supplied by its staff.
Low expenditure on health care requires either many patients per doctor or low incomes of doctors. We have no figures for medical incomes in 1963. Adaptation of medical practice to local conditions took the form of greater discrimination between rich and poor patients than in the West. Poor patients suffered delays and overcrowding in hospitals, or received hasty and fairly cheap diagnosis in clinics. Richer patients were diagnosed in clinics and charged fees.

Between 1963 and 1970 the chief developments were: many more specialists in Bangkok, and elsewhere rural hospitals, but no more doctors, since a number equal to the whole new output of doctors went to study or work abroad. Outside the main provincial capitals there was very little modern medical service, and yet in terms of incomes the provinces were already saturated and new doctors were seeking specialist posts - already becoming overcrowded - or moving abroad.

By 1972 various public health studies, the general policy of extending rural public services, and discussions after the third medical education conference, had all combined to make the government well aware of public health problems. Students and staff in the medical schools realised that Thailand needed more general doctors (and perhaps junior medical workers) rather than specialists; and widespread awareness of the emigration of Thai doctors produced legislation requiring three years of local service by doctors, as well as consideration of changes in the salary structure for professionally qualified public servants. These problems were not, however, being considered as a single economic problem.

Though in relation to their income, Thais spend a reasonable amount on health care, rural incomes are low and doctors - trained in Anglo-American methods and with the option to migrate - are expensive in relation to such incomes. We shall consider first the obstacles to meeting the need by government subsidy, and then other possible adaptations.

Let us suppose that the Government attempts, by expanding rural hospitals and building vastly more first-class health centres, to raise the number of doctors outside Bangkok to one per two thousand people - still only about half the Bangkok ratio.
We have seen that such doctors would flood rural private practice, forcing down earnings (as in Chiangmai) and that therefore salaries would have to be a very much higher proportion of total earnings. If private clinics became unviable, and if the present assumption remained that the mean monthly income of a doctor would have to be 10,000 baht (US$500) to keep him in Thailand, Government would have to raise medical salaries to about 100,000 baht a year, and turn one provincial hospital per year into a medical school, for the next decade at least. This would mean multiplying public health expenditure by about ten, from about six hundred million baht to about six billion.

Western observers and Thai doctors who think in terms of maintaining the present type of training could, no doubt, argue that—although this would be a major effort—neither financial nor manpower constraints make it impossible. Financially the Government might conceivably spend a quarter of the present budget, or a tenth of the gross national product, on health care; and conceivably, with some seven thousand students a year in the pre-university classes, putting medicine as their first preference, an intake into medical schools of four thousand would not exhaust the numbers of willing and qualified applicants. In practice, however, if political support were available for this much health expenditure on behalf of poor rural people, many other lines—educational, economic, etc.—would be similarly supported, and probably preferred to expanding health services so far: if so many of the most successful students were drawn into medicine, other needs for educated manpower would not be met; if medical salaries were raised to anything like this level, other, far more numerous civil servants' salaries would be forced to rise steeply also. It is not simply lack of political will that prevents training vastly more doctors in the present way. What alternative are available?

Could medical assistants again be trained and given only limited knowledge and authority? The Thai Medical Association chiefly opposed attempts by such assistants to secure, after some years of experience, recognition as doctors. A bigger gap in knowledge, with more drastically limited rights to practice, might have better chance of success.

Absorption of traditional midwives has been relatively successful, while relations between scientific and traditional doctors remain almost wholly hostile, except for limited
research interest in the scientific basis for some traditional cures. Normally the traditional doctors are anxious to secure supplementary training and to practise what they can of modern medicine. Training of traditional doctors to take over simple medical tasks might reduce doctors' routine work, and facilitate a referral system, but would require better training of scientific doctors in understanding traditional attitudes, and also radical adjustments both of practice and of law.

On the whole, senior doctors interviewed - even those most strongly favouring reform to promote better public health - did not favour training of assistant doctors. Greatly expanded training of sub-professionals, with increased delegation of routine tasks, was generally preferred. Two alternatives were suggested: upgrading the quality and greatly increasing the numbers of nurses, and expanding the numbers and functions of public health workers.

Several problems hinder the expansion of nursing to play an auxiliary medical role: nurses are - next after doctors - the profession suffering most heavily from a brain drain - in 1969 a net total of 496 nurses - more than that year's total output of nurses - left Thailand mainly for the USA (NEDB Manpower Planning Division, 1972); like doctors, nurses are induced to work in country areas mainly by good opportunities to earn supplementary income in clinics, etc. outside regular office hours; without these, government salaries cannot compete with private sector earnings; and increasing and upgrading the supply of nurses is likely to aggravate the brain drain long before it makes much impact on real demand for doctors.

Nurses can help to solve the problem only if many can be trained to increase greatly the number of patients each doctor can treat, and induced to stay contentedly in country areas at much lower salaries than doctors would need. Modern Thai medical training has not produced this kind of nurse. Every doctor tries to reproduce, as closely as he can, the conditions in which he was trained, overseas or in Bangkok. He needs nurses who can use expensive equipment in the most modern techniques, in Bangkok. Training of nurses is certainly not focused on saving a rural doctor's time by deep and intimate contact with the population. Like the doctor himself, the nurse has usually trained at least in part on foreign textbooks. Below her in the hierarchy are practical nurses and nurse aides. The WHO study of nursing
activities (M. Reid, 1969-70), showed (without adverse comment) graduate nurses spending about half their time on technical procedures and almost none on hygiene education and care of patients.

A shortage of qualified nurses, made up by recruiting practical nurses and nurses' aides without the formal nurses' qualifications, is a sign of imbalance; the skills required are too high in relation to the salary offered. For reasons already given no great increase in supply with present skill requirements is likely to be achieved by a moderate salary rise; increases in numbers would reduce supplementary earnings and the proportion going abroad would probably increase. If the problem were to be met by modifying the selection and training of practical nurses to make them a more effective bridge between doctor and patient this might, in principle, make a real contribution, but only if the doctors were trained to be both willing and able to expand greatly the number of patients treated in hospitals and health centres. There would clearly be difficulties: the doctor would have to be paid enough to make him willing to confine clinic work to the wealthiest patients; and he would have to be willing to work out systems which allowed limited discretion to relatively untrained nurses. However, operating through such nurses would involve less of a breach with medical tradition, and less change in the law, than using slightly retrained traditional doctors.

An alternative, or supplementary, method would be to train more sanitarians. This would not be done to expand personal health care; sanitarians do, indeed, run doubtfully legal health clinics, but they are less accustomed to working under detailed instructions from doctors and would be much less suitable instruments for increasing the range of a doctor's services. The object would be to improve prophylactic treatment and reduce the demand for health care. This would very probably improve rural health, but would probably eliminate relatively little of the need for medical services.

(g) Impact of overseas education and contacts. Many of the difficulties of providing better health care in Thailand are the unintended result of the overseas medical education of Thais or of their desire for it. Medicine is the most prestigious academic subject; medical graduates who pass the American ECFMG examination can easily earn enough overseas to qualify as specialists. The need to know in English the current overseas medical syllabus puts such pressure on
medical schools that even the deans and professors who want a more Thai orientation can do little to resist. Foreign textbooks are memorized in detail because they cannot be fully understood. A pattern of professional work is absorbed as normal, which can be imitated in part in Bangkok but is wholly unattainable elsewhere in Thailand.

The prestige of studying abroad even leads to such study being used as an inducement to work in provincial centres. Directors of provincial hospitals, to keep their staff, must send some abroad for improved qualifications. The individual sent may be lost, but unless some are sent, positions in provincial hospitals will not be attractive.

Medical degrees have come to be sought less as a licence to practise than as a basic qualification for taking an American examination for possible overseas study and practice. Virtually everyone concerned with medicine has now come to agree that Thailand needs general practitioners rather than additional specialists. Yet with existing standards it is just not possible to pay enough general practitioners at rates which will prevent them seeking specialized training abroad.

(h) Summary and conclusions. The distortions of the Thai medical system produced by close imitation of foreign models has not been a result of even semi-colonial external pressures; it has come about under Thai government leadership and within a structure which - from the beginning - has had the promotion of public health as the chief official concern.

By the end of World War II the fully-trained professional doctors were reasonably well organized and inflation had reduced their incomes. They successfully opposed the continued training of assistant doctors, and began setting up clinics where they could charge fees for the wealthy while increasing public interest in Western medicine created congestion in the hospitals.

As clinics became the main source of income even for government doctors and as the use of English continued to increase, doctors first found it profitable to take specialist qualifications abroad, for work in Bangkok, and then - as even the specialist field in Bangkok became overcrowded - to stay abroad. Meanwhile a series of conferences on medical education, emphasis on public health to combat use of unqualified practitioners, and a Rockefeller public health program,
all built up an awareness in Thailand of the need for more ordinary general practitioners and more and better rural health services.

Reform has, however, become very difficult because the profession itself largely controls and staffs the medical schools, and these are under internal and external pressure to train people for overseas practice: training in Thailand designed to solve local health problems in co-operation with traditional practitioners is rendered difficult by internationally imposed standards; for international specializations give an option to emigrate and so set a lower limit to earnings. Without international co-operation, a local orientation seems impracticable.

In some countries it is possible to treat the support of international standards and international contacts among professionals as an effort to preserve overseas influence. There is a grain of truth in the suggestion that both Britain and France have encouraged and supported international standards which help to preserve their way of life in former colonies. How small that grain is can be seen by treating Thailand as a control. In Thailand the whole system has emerged from Thai initiatives, adopted for the sake of improving public health in Thailand itself. We must look deeper for the explanation of the power of uniform and inappropriate standards.

Accountancy

(a) Origins and training. The absolute monarchy had taken over from Western countries the use of accounts to control public expenditure, but the private sector had no local accounting until 1939: businesses of any size were European and Chinese, and accounts were kept by Europeans and Chinese. The Accounts Law of 1939 was intended to increase Thai government control over Chinese business. Though the resultant training of Thai accountants in Chulalongkorn and Thammasat Universities was seen by the Thai professors as preparing an elite corps, which would help create a Thai capital market by producing accountants whose certification would be accepted as objective, this was never the aim of the Thai politicians. Heavily involved in patronage and corruption (see, e.g. Ingram, 1971:90-2) they were unenthusiastic about registering accountants. The Thai Institute of Accountants functioned mainly as an alumni
association of the university accounting faculties until 1962.

The faculties of accountancy regarded standards as depending on conformity to British or American practice. Students were encouraged to read (and even do exercises) in English. Though well aware of actual conditions under the Accounts Act, the faculties taught courses of ethics based on foreign textbooks, hoping ultimately to have their audits accepted by foreign companies. Even at present, references to the official Thai code are introduced mainly to emphasize the responsibility of management rather than the accountant under the Accounts Law.

(b) Present structure of the profession. Until 1962, when auditors were first registered, no one knew how many accountants there were. Limited information is available on graduate accountants from the Higher Education Reports (National Education Council, 1967-1971) and on registered auditors from the register (Department of Commercial Registration, 1970).

The total number, up to 1966, with bachelor's degrees in commerce and accountancy was estimated in the 1967 Higher Education Report as 7,694; there were also 554 bachelors in 'Economics and Business Administration'. Table 4.6 shows the numbers graduating up to 1970, the last year for which comprehensive figures were available. All four schools of accountancy have expanded in 1971 and 1972, and we may estimate 1,400 graduates for these two years. Since training began so recently, deaths would probably not exceed 1,000, since the beginning.

In 1965 one auditor in ten qualified overseas (Institute of Certified Public Accountants of Thailand, 1965); at lower levels the ratio would be lower, say one in twenty. Total accounting graduates now in Thailand might be estimated at a little over 11,000 by adding to 9,705 (Table 4.6) 500 foreign-trained and 500 economists plus 1,400 in 1971-72, and deducting 1,000 deaths.

Table 4.7 gives some analysis of registered auditors by sex and place of business. Auditors are required to notify changes of address but are often late in doing so. The register has some internal inconsistencies but is the best available source.
Table 4.6

Bachelors graduating in Accountancy* by year and university, up to 1971

<table>
<thead>
<tr>
<th></th>
<th>Chulalongkorn</th>
<th>Thammasat</th>
<th>Kasetsart</th>
<th>Chiangmai</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 1966</td>
<td>2,001</td>
<td>5,693</td>
<td>0</td>
<td>0</td>
<td>7,694</td>
</tr>
<tr>
<td>1967</td>
<td>132</td>
<td>199</td>
<td>0</td>
<td>0</td>
<td>331</td>
</tr>
<tr>
<td>1968</td>
<td>171</td>
<td>168</td>
<td>49</td>
<td>24</td>
<td>412</td>
</tr>
<tr>
<td>1969</td>
<td>206</td>
<td>331</td>
<td>6</td>
<td>42</td>
<td>585</td>
</tr>
<tr>
<td>1970</td>
<td>261</td>
<td>333</td>
<td>13</td>
<td>76</td>
<td>683</td>
</tr>
<tr>
<td>Total</td>
<td>2,771</td>
<td>6,724</td>
<td>68</td>
<td>142</td>
<td>9,705</td>
</tr>
</tbody>
</table>

* Including Commerce and Accountancy or Accountancy and Business Administration.
Unspecialized Business Administration and Accountancy course.


Table 4.7

Certified auditors by area and sex, 1972

<table>
<thead>
<tr>
<th></th>
<th>Metropolitan</th>
<th>Inner*</th>
<th>Central**</th>
<th>North</th>
<th>Northeast</th>
<th>South</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male No.</td>
<td>1,119</td>
<td>51</td>
<td>25</td>
<td>25</td>
<td>23</td>
<td>16</td>
<td>1,259</td>
</tr>
<tr>
<td>%</td>
<td>(53)</td>
<td>(50)</td>
<td>(69)</td>
<td>(62)</td>
<td>(70)</td>
<td>(50)</td>
<td>(54)</td>
</tr>
<tr>
<td>Female No.</td>
<td>985</td>
<td>50</td>
<td>11</td>
<td>15</td>
<td>10</td>
<td>16</td>
<td>1,087</td>
</tr>
<tr>
<td>%</td>
<td>(47)</td>
<td>(50)</td>
<td>(31)</td>
<td>(38)</td>
<td>(30)</td>
<td>(50)</td>
<td>(46)</td>
</tr>
<tr>
<td>Total</td>
<td>2,104</td>
<td>101</td>
<td>36</td>
<td>40</td>
<td>33</td>
<td>32</td>
<td>2,346</td>
</tr>
</tbody>
</table>

* Nonthaburi, Pathumthani, Samut Prakan and Nakhon Pathom.

** Remainder of Central Plain and Southeast.

Concentration of the accountants in Bangkok is overwhelming: nine certified auditors out of ten are in the Metropolitan area and a further 4-1/2 per cent in the inner provinces. The remaining 141 are concentrated in a few provincial capitals. Three cities, Chiangmai, Nakonrajsima and Haadyai (Songkhla), the commercial capitals of the North, Northeast and South respectively, absorb forty-five. The ratio in the Metropolitan area—about 1:1,500—compares with just under 1:2,000 in the whole of the United States. In all the rest of Thailand, there are less than a hundred registered auditors to serve some twenty-five million people.

Women have been an increasing proportion of new accounting graduates, reaching some two-thirds in the late sixties; judging by the certified accountants with the most recent registrations, women are becoming predominant at this level also: the proportion is approaching three-fifths. In commercial firms women accountants' salaries are about four-fifths those of men.

Types of work done by accountants vary enormously. At one extreme are firms which do almost exclusively auditing of limited company accounts and tax advice for firms that keep genuine records; at the other those which never audit and are not employed as salaried accountants but live by preparing accounts for many small businesses. Between these two are three other types of employment: salaried accountants operating to control expenditure and to conceal income for tax purposes; government accountants who are allowed (unless they are income tax officials) to operate private practices in their spare time, and nearly all do—the more honest ones keeping this work separate from their official duties; and firms whose main function is to help clients negotiate with government.

No breakdown even of certified accountants among these categories is available. Only about a dozen firms (half of them foreign-controlled) aim at international auditing standards and reputation; the registrar issues a list of auditing firms, not comprehensive, but presumably covering most of those who do much of it, which includes 121 firms. A note on the register, based on registers of limited companies and partnerships, states that 840 certified accountants have audited company accounts: plainly nearly two-thirds of the certified accountants have never done a legally required audit.
Of the 121 auditing firms listed, thirty-five indicate in their title that they are also lawyers; only sixty-six firms indicate any profession in their title, so perhaps some half or more of the firms just below the international class engage mainly in tax advice and other adversary work.

Accountants' starting salaries, outside government service, as supplied by the schools of accountancy average 1,400 baht per month for a woman, 1,800 for a man.

For earnings later in life the best source is a recent enquiry by Esso, which indicated average salaries in fifteen firms as shown in Table 4.8. Probably a reasonably efficient graduate accountant can expect a gross salary of 12,000 baht a month ten years from graduation. Some ten years ago the corresponding figure was about 4,000 baht.

Salaries have never, of course, been the main inducement to enter government service as an accountant. These conform to normal civil service scales, about one-third of the above figures.

The only evidence available on the earning of accountants in independent professional practice is on fees charged. Medium-sized firms handle all the accounts of small businesses for a monthly fee from 500 baht upward; the smallest accountants may charge as little as 100 baht, making their income by handling up to 100 accounts per month, with nearly all the work done by unqualified bookkeeping clerks. For serious audits fees range from about 60 baht per hour for the services of a new graduate to 500 for a senior partner.

(c) Machinery for maintenance of standards. After registration of certified auditors was introduced in 1962, the first attempt to raise standards was directed to the academic level of training.

Registration was to be limited to holders of an accountancy degree or equivalent; plus a period of work in auditing. The body to decide on adequacy of qualifications and on conditions of further work in auditing was the Commission for the Control of the Profession of Accounting, consisting of academic accountants, department heads and a minority of practising accountants, appointed by the Minister. The present register of certified accountants does not record their qualifications but the 1965 register did, and an analysis shows the initial standards enforced (Table 4.9).
Table 4.8

Average monthly salaries in leading Bangkok firms for graduate accounting positions

<table>
<thead>
<tr>
<th>Position and years experience required</th>
<th>Average* basic salary (baht)</th>
<th>Basic salary range (baht)</th>
<th>Average gross salary (baht)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>Senior Accounting Clerk (1)</td>
<td>3,515</td>
<td>1,500</td>
<td>5,800</td>
</tr>
<tr>
<td>Accounting Group Head (3-5)</td>
<td>4,750</td>
<td>2,275</td>
<td>10,250</td>
</tr>
<tr>
<td>Accounting Section Head (7-10)</td>
<td>9,333</td>
<td>4,800</td>
<td>14,742</td>
</tr>
</tbody>
</table>

* Weighted average based on number of employees reported in the position in each firm. Total employees 97, 126 and 34 respectively.

Source: Figures supplied by Esso (Thailand) Ltd through the help of Dr Prot Panitpakdi and Mr Vorakarn Punnahitananda, all of whom we thank for their assistance.

Table 4.9

Qualifications of certified accountants as listed in the register, 30th November 1965

<table>
<thead>
<tr>
<th>Foreign degrees or chartered acct</th>
<th>Foreign higher diplomas</th>
<th>Thai degrees</th>
<th>Thai higher diplomas</th>
<th>Thai diplomas and certificates</th>
<th>None listed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>62</td>
<td>3</td>
<td>655</td>
<td>177</td>
<td>78</td>
<td>1,098</td>
</tr>
<tr>
<td>%</td>
<td>6</td>
<td>–</td>
<td>60</td>
<td>16</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

Clearly the original intention to register only graduate accountants was not achieved; by 1962 many non-graduates had practised accountancy for years and for six months these were registered automatically. After that, formal graduate equivalence was required of new entrants but until 1968 no formal standards for practical auditing training were laid down. By then many auditors had been accepted almost automatically, whose work had been controlled by neither an academic nor a professional tradition, and whose practice had been subject to strong pressures toward haste, inadequate disclosure, and dependence; it was difficult to find enough firms in which practical work could be a real influence enforcing stricter standards.

A Code of Ethics, with regulations and power to discipline by withdrawing licences, was envisaged in the 1962 Act. The Certified Accountants were not anxious to improve standards and discipline. These could not be enforced on their uncertified competitors; and raising standards might lead to accountants being held responsible not merely for audits but for accounts prepared for clients under the Accounts Law: they would have to reach an accommodation with officials not only on their clients' behalf but on their own. In 1968, since accountants themselves had failed to act, the registration department draw up a code (nominally merely a code of existing practice, by which the Committee would not be bound). This was skilfully drafted, appearing to conform to international practice, but not actually requiring accountants to abandon the rather ritualistic practices used in drawing up accounts for small Chinese firms as a basis for negotiating taxes and bribes with local officials.

The problem is that accounting fulfils two functions. Auditing of public companies is useful at least to management; because of corruption in the control structure, disclosure of profits may be inadequate and some expenditures poorly defined, but improvement of standards might be worth while. Preparing accounts for small Chinese businesses is a Westernized ritual for dividing profits between the businessman, the official and the government. The accountant merely saves everyone some trouble, for a fee. The large amount of fictitious accounting clearly generates cynicism; but it also makes drafting of a code to improve auditing difficult.

Accounting journals listed in the National Library were checked. There were only two, both mainly in Thai: a Treasury journal dealing with accounting questions only
incidentally and the Accountants Journal, now in its twenty-fifth year, a professional journal circulating widely among accountants and well illustrating the profession's orientation and problems.

Its orientation towards accounting practice in the USA is very marked, with translations and summaries of decisions of the American Institute of Certified Public Accountants or its organs, and of articles on American accounting and auditing practice. Along with these are articles or transcripts of speeches on the profession in Thailand which—without covering the problems raised by deliberately fictitious accounts—often reflect discreetly the tensions between their institutions and the international standards of their profession. Finally it contains the usual news of the profession, with important legislation or court decisions.

(d) Analysis. Accounting depends on basic concepts that do not conform well to traditional (and still operative) Thai culture. Professional scrutiny, in terms of objective facts and agreed criteria, of the behaviour of those in authority, is an unfamiliar idea in a country with no history of parliaments controlling executives by finance and law, or of independent churches, courts or universities passing judgment on those in authority.3

A system of accounts was introduced by the absolute monarchy to prevent corruption and waste of the public revenue. A functional attitude of protecting the orderly collection and disbursement of public revenue for public purposes, originally introduced by Prince Viwat in the service of the king, was continued under Dr Puey in the form of a defense of the public interest against other pressures within the government (Silcock, 1967, Ch.8). Accordingly Viwat, and later Puey, used the international position of the Bank of Thailand as an agent of the International Monetary Fund and the World Bank to ensure that part of Thailand's surpluses went to build up reserves, while development projects were undertaken with loans under international supervision.

The first professors of accountancy were aristocrats who saw themselves as training an elite corps of accountants,

3Those in authority are seen as agents of good, until they fall from power (see N. Jacobs, 1971, Ch.2). 'When the tide falls we see the posts that supported the house.' Thai Proverb.
under government protection, who would introduce reliable verification of accounts and ultimately create the conditions for a capital market trading in shares of public companies. The dream of audits reliable enough to create a public share market survives in some of the leading accountants. But accountants were not being trained for that purpose. The aim was to tax and harass the prevailing Chinese businesses, and ultimately bring them under the control of Thais for the benefit of the Thai bureaucracy. Businesses were to prepare accounts in Thai, Thai accountants would be trained to do it for them, and the law would be used - as many others were - not so much to enforce compliance as to ensure payment for non-compliance.

It is doubtful whether the work of accountants under the Accounts Law renders any appreciable service to the Thai economy. Institutionalizing the corruption may save some time; but the process certainly does not encourage use of more scientific accounts.

The profession, however, has certainly made possible the development of a nationwide banking network and provided internal accounting techniques for substantial industries. The Thai accountant is at his best as an agent of the scientific revolution, working for an employer to develop a coherent and effective system of supervision. He is at his worst as a certifier: his small-scale business cannot afford, and does not wish, to pay for adequate verification; his auditing work, on medium-scale companies, would be inimical (if properly done) to the actual channels through which capital flows in Thailand, the wealthy cliques of skilled Chinese businessmen and Thais giving them protection; and the aspiration to international-auditing status generates training on irrelevant foreign texts, with ethical codes that merely foster cynicism.

It might well be an advantage to Thailand to concentrate on accounting techniques and develop them to meet real needs, that cannot now be met because of the accountants' largely fictitious legitimizing role. Small businesses could be genuinely helped by accountants studying and adapting their accounting systems; newly literate farmers could be taught the techniques of record-keeping, not (as at present) by underpaid and inadequately trained civil servants from the Department of Co-operative Audit - which can afford very few accountants - but by accountants no longer needed for setting up fictitious accounts.
At present a small group of accountants tries in vain to influence its colleagues towards reform. The majority continue to play their half-magical, half-moral role, sanctified by the rituals of the American Certified Public Accountant.

Civil engineering

(a) Origins and training. Civil engineering began with railways and irrigation both initiated under the absolute monarchy. Students had been sent abroad, and also trained in Chulalongkorn University. Technical standards were not high, but a professional attitude was inculcated. The destruction during World War II and the corruption and disorganization thereafter (Skinner, 1957, Ch.8c; Riggs, 1967: 251-4) made it necessary for the Bank of Thailand to secure international supervision of reconstruction. This prevented funds being diverted to private pockets but created a demand for English speaking Thai engineers with internationally recognized qualifications, to work mainly in liaison positions in foreign firms. Recognition and communication became more important than professional attitudes.

From the early fifties, Thais were being trained abroad, with aid funds. By 1961, two Thai engineers with foreign doctorates and eight with foreign masters' degrees (several from first-rate universities) were lecturers or special lecturers at Chulalongkorn University (Chulalongkorn University, 1961). University salaries did not attract such people, but a university appointment brought status and income opportunities either from foreign firms or from Thai contractors who worked with them. However, these tasks left the lecturers little time to do more than explain foreign texts in Thai, and encourage students to memorize them.

As secondary education spread beyond the aristocracy students came to enter universities with more and more competitive examination skills and less and less experience of using foreign languages. The result has been a more and more imitative pattern of professional training.

Training in engineering technology has followed a different path. Here the development of inappropriate technology has been based on a combination of aid programs furthering a national interest with a local aspiration for higher technology. The quality of the teaching in schools which taught technology was poor in the early post-war period. Thai educators were seeking to upgrade their technical teachers and the German
aid program found it advantageous to train young Thais in servicing and using German machinery. Through the influence mainly of the Thai-German technical school, excellence in technical education has come to be associated with advanced scientific training and capital intensive equipment rather than with adaptive ingenuity and innovativeness. The Thai-German institute, the Thonburi technical institute and the Nonthaburi Institute of Telecommunication have now been amalgamated into the King Mongkut's Institute of Technology, at a university level (National Education Council, 1971).

(b) Present structure of the profession. Engineers, like accountants, must register every five years; secondary data are not available, and the register itself must be used for analysis of the profession's geographic and functional structure. The latest available is for 1970.

Table 4.10 shows the horizontal and vertical distribution of engineers among different branches of the profession and different levels of professional status. In 1972 the registrar supplied figures for August 1971 for civil engineers only. These are shown in parentheses and are not included in the total. No further detail was given, however, and the analysis of civil engineers in Table 4.11 used the 1970 figures.

Civil engineers are about three-sevenths of all the engineers registered. The proportion of associates in the total gives an indication of the rate of growth: civil engineering lags behind industrial and communications engineering but leads the other three branches. The 1971 figures show considerable acceleration.

Virtually three-quarters of the civil engineers in Thailand registered their offices as government departments. An analysis was made of all addresses as registered.

Distribution of government civil engineers between units and between central and provincial is shown in Table 4.11. It must be borne in mind (particularly for Electricity or Telephone units) that only civil engineers, not electrical or mechanical, are included here.

The table almost certainly exaggerates the concentration of civil engineers in Bangkok. Only engineers working on relatively long provincial projects would transfer their address in the professional register. Nevertheless the
<table>
<thead>
<tr>
<th>Professional status</th>
<th>Civil (1972)</th>
<th>Mechanical</th>
<th>Electrical</th>
<th>Industrial</th>
<th>Mining</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fellows</td>
<td>397 (413)</td>
<td>318</td>
<td>181</td>
<td>20</td>
<td>90</td>
<td>87</td>
</tr>
<tr>
<td>Members*</td>
<td>692 (730)</td>
<td>267</td>
<td>259</td>
<td>60</td>
<td>90</td>
<td>65</td>
</tr>
<tr>
<td>Associates*</td>
<td>1,581 (1,962)</td>
<td>652</td>
<td>423</td>
<td>269</td>
<td>527</td>
<td>153</td>
</tr>
<tr>
<td>Total</td>
<td>2,670 (3,105)</td>
<td>1,237</td>
<td>863</td>
<td>349</td>
<td>707</td>
<td>305</td>
</tr>
</tbody>
</table>

* The register shows several associates marked with an asterisk indicating that they have qualified as members. In this table these have been transferred from the associate row to the member row.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Fellows</th>
<th>Members</th>
<th>Associates</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central*</td>
<td>Provincial</td>
<td>Central*</td>
<td>Provincial</td>
</tr>
<tr>
<td>Highways</td>
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<td>10</td>
<td>134</td>
<td>17</td>
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<tr>
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<td>27</td>
<td>9</td>
<td>23</td>
<td>3</td>
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<tr>
<td>Irrigation</td>
<td>25</td>
<td>2</td>
<td>63</td>
<td>18</td>
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<tr>
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<td>52</td>
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<td>Telephone</td>
<td>1</td>
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<td>6</td>
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</tr>
<tr>
<td>Municipalities**</td>
<td>43</td>
<td>0</td>
<td>51</td>
<td>4</td>
</tr>
<tr>
<td>Accelerated</td>
<td>**</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Rural de vel.</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Government enterprises</td>
<td>26</td>
<td>1</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Universities</td>
<td>22</td>
<td>0</td>
<td>28</td>
<td>7</td>
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<td>Armed Forces</td>
<td>28</td>
<td>0</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Other govt</td>
<td>46</td>
<td>4</td>
<td>62</td>
<td>4</td>
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<tr>
<td>Total Thai Govt</td>
<td>269</td>
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<td>58</td>
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<tr>
<td>US Govt, ECAFE, etc.*** 4</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>18</td>
</tr>
</tbody>
</table>

* Includes metropolitan and four inner provinces.
** Includes municipal water supply.
*** Thai personnel working for US forces, USAID, Mekong Committee. About half working for USAID to Laos.

Source: Section II Registered Professional Engineers. Count based on registered offices.
contrast of more than one in five associates in the provinces, and approximately one in ten fellows is no doubt significant. The proportion working for the government also increases with seniority, probably because, when the present fellows were young, Thais had few opportunities outside government service; the normal progress is not from experience in the private sector to a government post - indeed our interviews indicated that progress is usually the other way: private firms pay more but are reluctant to appoint inexperienced engineers.

Addresses in the private sector give too little definite information to justify tabulation; a study of them revealed that more than half the members, rather less than half the fellows and associates, worked for well-known international firms. Most of the Thai firms appeared (from their titles) to specialize in supplying construction materials.

Special features of civil engineering in Thailand include, first, a comparative lack of consultants, and a virtual absence of special pre-investment studies to provide a basis for deciding on investments, other than those required by the World Bank and other overseas agencies, which have mainly been undertaken by foreign consultants. Tendering procedures for government projects are formally satisfactory, but chief engineers and directors usually have no clear technical basis for decisions on technical points. This is sometimes suggested as the cause of much malpractice and corruption; but more probably the causation works the other way. Preliminary studies would be unlikely to raise either civil engineers' salaries or their professional discipline enough to eliminate substantial corruption, though they might improve the engineer's bargaining position.

A second feature was the brief attempt to introduce compulsory engineering service to the government, to overcome a shortage of civil engineers. As in medicine, students were required to pay 5,000 baht per year for their professional engineering course unless they entered into a contract to work for the government. The element of compulsion did not discourage students from applying; it had been offset by news of golden, though irregular, opportunities for engineers in the Accelerated Rural Development scheme. (Table 4.10 showed a 25 per cent increase in engineering associates between 1970 and August 1972.) In 1972 the number of contracted civil engineers exceeded the number of positions available, and the contracts were cancelled.
Earnings in the profession are not known. Government engineers earn the ordinary civil service scale, but this is not important, since few expect to live on their salaries for long. When the compulsory service scheme was proposed the private sector was said to be offering new engineers five or six times the government rate. This, however, was probably an overstatement, based on the 1968 Esso survey of thirteen firms which gave an average gross salary for junior engineers of 6,491 baht per month; 6,491 is indeed five times the government rate for 'new graduates'; but the weighted average of minimum salaries - a fairer parallel - was 3,844 baht, or about three times the government rate. The weighted average gross salary for a senior engineer, with three to six years' experience, in the same survey, was 8,791 baht - between five and six times the corresponding government salary. Personal interviews indicated that the private sector liked to recruit engineers who already had some experience in government service.

Supplementary payments, outside the regular salary system, are clearly an essential part of the whole structure of civil engineering; this is obvious to the most casual observation, but it has not been possible to get reliable detailed information. One cannot talk with any foreign teacher of engineering without learning that almost universal corruption is taken for granted; students, in discussing careers, will expect a supplementary salary from private contractors; one general manager of a government undertaking was described as exceptionally honest because he used the kick-backs from suppliers to pay bonuses for good work. Does the structure through which this money passes seriously affect the profession's usefulness?

Unsafe buildings, or bridges or dams that collapse, seem infrequent. Maintenance inadequacies are as often due to inefficient use as to swindling on irrigation cement or road materials. Much corruption takes place within understood conventions: paying part of the cost of a project to a senior official, in lieu of raising officials' salaries to an adequate level, allows politicians to exercise control through patronage. Generous field expenses and services to supervising engineers may simply eliminate delays and minor adjustments. Such semi-formal taxation may do little harm.

The main problems appear to arise from unreality. The contrast between what is legal and what happens is obviously much sharper than in medicine and accounting. The real
practices are hardly even covertly discussed in Thai, and no code to keep abuses within bounds exists; senior people's involvement in illegality also tends to undermine technical discipline.

This certainly contributes something to Thailand's maintenance problems. Less obviously it leads to evasion of competition by introducing unnecessary specifications that add the cost of useless gadgets (from which no one benefits) to the bribe itself, which at least benefits the Thai bureaucracy.

In response to the criticism which this situation has evoked, Thai contractors have formed their own semi-professional association to protect safety standards, while architects and engineers support the establishment of a national professional association to protect all professional standards against competition. Though neither of these developments shows much appreciation of the real problems, they are an indication of some questioning of the current situation.

(c) Machinery for maintenance of standards. Formal machinery for maintaining standards corresponds quite closely to that for medicine and accounting. There is a Thai Institute of Engineers (Under Royal Patronage) and also a Committee for the Control of the Profession of Engineering; engineering is taught in five Thai universities, and two institutes; and some Thais go overseas for higher training; entry to the universities is controlled by a common examination; the members of the faculty in the different universities have considerable autonomy in initiating changes in syllabus, but conform to overseas models because of the same two influences as in other professions: interactions between the Civil Service Commission and the National Education Council, to protect the general educational structure, and students' desire to be accepted for overseas graduate study which binds the teachers to foreign textbooks and methods. Certain features of the engineering profession, however, require special mention.

Its five universities and two institutes training engineers have widely different historical backgrounds, but the resulting difference of emphasis seems to be diminishing: Chulalongkorn, the oldest and largest, has gone much further than the others in encouraging undergraduate specializations, for example in transport or structural engineering, partly
because in Bangkok many engineers have specialist knowledge, and partly because (until recently) the Asian Institute of Technology was doing postgraduate work next door for students from all over Southeast Asia. Probably Chulalongkorn comes nearer to reproducing overseas courses than any of the other schools, but others are moving in the same direction.

Kasetsart University's engineering was originally irrigation engineering, but it now teaches ordinary civil engineering; the three provincial universities are all being rapidly assimilated to the same pattern. Khon Kaen and Chiangmai were meant to be rural and regional, Songkhla to emphasize industrial skills, but all have accepted with little resistance the drift to direct imitation of foreign patterns.

The Asian Institute of Technology (formerly the SEATO Graduate School) though situated in Bangkok, is a regional institute designed to discourage Southeast Asian engineers from taking irrelevant graduate training overseas, by offering locally courses of a similar standard. It has modified the syllabus but not attempted to change professional patterns: courses are given wholly in English and staff have time to undertake research on Asian engineering problems.4

Thai engineering journals listed in the National Library included eight titles, but most were in no sense technical journals, publishing only an occasional article involving research. Two had long ceased publication, two were semi-technical magazines of armed services, and two (the journals of the Mines and Highways Departments) were mainly concerned with news of development activity. The two technical publications were Chulalongkorn Engineering Faculty's thrice-yearly journal, and that of the Engineering Institute, published every two months.

4The Asian Institute of Technology may be contrasted with the other Asian Institute that also began in the campus of Chulalongkorn University, the UN Asian Institute for Economic Development and Planning. The latter, though it has also published some good research papers and attracted distinguished scholars, has kept clear of awarding higher degrees, and concentrated on short, specialized courses. It has made a useful contribution by adapting to the task in hand.
(d) **Analysis.** The professional engineer in Thailand is faced with problems of both professional structure and factor supplies, yet the system of training and professional disciplines has been unable to adapt adequately to deal with either situation.

**Professional structure** differs from the international pattern primarily because supply of capital equipment from abroad is an important source of patronage in the Thai political system. Much of this is illegal but protected, and this limits the engineer's power of action because he is underpaid within the legal system and makes much of his income outside it. He still, however, has professional responsibilities, since he alone has the technical knowledge to see the implications for safety, efficiency, and maintenance costs, of what is done, and—though the decisions may not be his—to see that decisions are taken with knowledge of the consequences.

The engineer involved in these negotiations must be familiar with international conditions and able to communicate closely both with foreign technical experts and with his superiors. If his skills are adequate he will certainly be mobile and expensive. Yet for rural work on roads, irrigation channels, water-works, etc. many engineers are needed, with high capacity to adapt and strong professional commitment; and if these are too expensive the work will not be done. If rural engineers are to be paid enough to enforce a thorough training and strict professional discipline, and yet relatively inexpensive, they must be selected from a group that has limited mobility and hence limited options.

This suggests either a different class of 'rural engineers', trained on a syllabus wholly adapted to Thailand and wholly based on Thai language material, or a different pattern of promotion, with training for the associate grade wholly Thai in character, and a further course of training for membership, or fellowship, that would take several years and be highly competitive.

**Professional commitment** at either level would not need to imply that the engineer prevented a double system of payment—to the national budget and to the political boss—but that in some way he himself was not involved and was free to give technical advice. In this, as in other professions, the patronage structure has to be institutionalized.
Basic professional training and discipline, to deal with this situation, is something that Thailand needs to devise. The same training and discipline might suffice whether Thais are being trained for rural or international responsibilities. However, in the technical field, much more complex training is needed for dealing with international firms.

All Thai engineers need training in adapting basic engineering principles to the special conditions of Thailand; but the adaptability needed in taking the Thai side in technical negotiations requires far more knowledge of the international system.

Factor supplies are different in Thailand (as in all less-developed countries) from those of the industrial world. However, because of aid, and competition among industrial countries, the required adaptation is rarely one of simple substitution of labour for capital. The object of an aid program, for instance, may be to provide free, or cheaply, some capital-intensive equipment; the object of the supplier may be to sell, at market rates or higher, spare parts or complementary equipment. It requires knowledge, and a capacity to innovate, to secure the advantage of the aid in a labour-intensive way.

For those working in a local context, what is mainly needed is to adapt the basic principles of engineering to conditions of different factor prices. For those handling aid supplies the innovation requires more detailed knowledge of capital-intensive methods themselves.

In spite of the presence of the Asian Institute of Technology, Thais seem relatively less interested in innovating new technologies for Thai conditions than engineers in other Southeast Asian countries. The prevailing concepts, notably in the Board for the Promotion of Industry and the Applied Science Research Corporation, tend to be 'modern industrial practice' or 'the highest international standards'. This preference for imitative technology probably stems from failure to tackle problems of professional structure. The professionals handling international questions need to be well paid to afford to distinguish the Thai interest from that of the foreign supplies (McCrensky, n.d.). This can happen only if they are few and if the bulk of the profession can be trained in other ways.
Agricultural extension

The professions considered so far are important to Thailand's growth, but the organization of its agriculture is critical. Thai agriculture has received foreign technical assistance which has generated beneficial social change, healthy questioning and attitudes often better adapted to generating change than its traditional ones. Agricultural extension is not a close-knit international profession, like medicine, generating selection criteria and a monopoly structure damaging to the less-developed countries. Yet it has features analogous to those in the international professions which could be very dangerous to Thailand's development program.

(a) Historical background. The Thai agricultural extension system grew up in relative isolation during World War II, beginning with lower-level pre-war agricultural schools and a pioneer higher-level agricultural school just before the war and building up, from these and from schools attached to research stations, to Kasetsart University (the University of Agriculture) in 1945. By 1952 some 200 agricultural extension workers, mainly trained in pre-university courses were working throughout the country under a Division of Agricultural Extension. Thailand signed a technical assistance agreement with the USA and American experts began investigating how to improve Thai agricultural productivity. The main instrument chosen was upgrading of Kasetsart's standards, and aid contracts for this were negotiated. Unfortunately the low technical standards of the existing extension officers (inevitable in the circumstances) and the lack of American expertise in Thai language diverted attention from the considerable possibilities in the existing system.

Visiting Americans assisted several Kasetsart departments and, with their assistants, produced a good deal of useful research, some of it in Thai. Even in courses developed in English this research interest led - while the Americans were there - to some emphasis on Thai problems. However, Thai teachers returning from the USA felt the usual pressures to assimilate courses to American ones; they were less well paid and needed time to supplement their incomes, and their example had begun to stimulate further student demand to qualify for overseas study. The upgrading of Kasetsart has proved a mixed blessing, for while its formal standards have been raised its orientation to agriculture has diminished.
Fortunately, the sheer number of extension officers required, the absence of a plantation-agriculture sector in which an overseas-trained elite could concentrate, and the obvious importance of communication with farmers, have prevented some of the worst effects of integration of agricultural extension into an international profession. Its structure and work have subsequently been influenced by Taiwan, the Netherlands and Australia, as well as the USA (Thailand, Chinese Agricultural Technical Mission to Thailand, 1971, 1972; Nedeco, 1971; Australia, Department of Foreign Affairs, 1971) with many experiments, public and private, in generating extension activity. The resulting system, though untidy and often wasteful, has left open many possibilities for choice.

(b) Present structure: extension agencies. Agricultural extension is not a well-organized profession: people with widely different training are employed by several different public and private agencies as extension workers, on different principles of organization.

There are two nationwide public agencies, the Department of Agricultural Extension, with sixteen regional research and training centres, a small group, with specialists, in each province, and at least one official in each district; and the Livestock Department with a veterinary officer in each province, nine regional extension centres and twelve breeding stations. The former also has strategic reserves not only for major pest control but to use for special policy objectives. Official policy in the Ministry of Agriculture - to which both these Departments belong - is to employ graduates as the responsible extension officers, allowing specialization only beyond this level. But the chief provincial and district extension officers are responsible directly to the governor and district officer respectively, with only technical guidance from their department; nearly all the district, and many of the provincial extension officers in the Department of Agricultural Extension and almost all extension officers in the Livestock Department are non-graduates. All officers at provincial and district level are heavily involved in administrative, non-technical tasks.

The Land Development Department operates through some fifteen to twenty mobile teams, each with five or six members trained for specific tasks, and usually only one graduate. It develops different areas in turn, following a reasonably flexible overall national plan. The Community Development Department also attempts development sequentially, a few
provinces at a time (selected apparently on security grounds) and in each a few villages selected partly on geographical and economic grounds, partly as inducement and demonstration. Its scope is much wider than agriculture, and relatively few of its workers are trained in agricultural extension: few, even of its field supervisors, are graduates. The Social Welfare Department has a few agricultural specialists in small mobile teams for work by helicopter visits to hill-tribe villages. The Royal Irrigation Department has extension workers organizing irrigation co-operatives: few of these are graduates; they work in selected areas according to the irrigation pattern. From some of the above departments extension workers are seconded to various demonstration projects, the King's projects for hill tribes and for land settlement (Department of Land Development, n.d.), land development projects by Australia and Holland, a Taiwanese co-operative production project and others. These are meant to test out ideas for wider implementation.

The private sector is also a large employer of agricultural extension workers. The Thai Rural Reconstruction Movement is a private foundation employing virtually only graduates, though not all agricultural graduates: like the Community Development Department, its aim is many-sided development. It is highly concentrated, one worker per village, with every worker having also a special field of expertise which he uses for surrounding villages also. This foundation is limited to Chainat province, but there are other, smaller, foundations in other regions. One large company runs a single model village, largely as public relations. Other employers of extension workers are banks, companies selling agricultural chemicals and processors of agricultural products. One bank has an agricultural credit department in every fourth branch, employing mainly agriculture graduates on agricultural credit expansion. One agricultural chemicals producer uses its agents all over the country to give development courses to retailers. The government's tobacco monopoly and several private food canners employ extension workers mainly to achieve production practices that lead to a reliable product: a good many of these are also agriculture graduates.

Most of the government departments that employ non-graduates in extension work are doing so in a spirit of making-do with what is available. The government's submission to the World Bank on the development of Kasetsart University postulates that all those who take responsibility in agricultural extension should be graduates (Royal Thai Government,
1970). This policy probably inhibits proper long-run *ad hoc* training schemes, designed to use available non-graduate labour as needed.

The problem of training enough graduates appears, at first sight, a relatively short-term one. The third five-year Economic and Social Development Plan anticipates that the four universities producing agricultural graduates will produce within the period a surplus of some two thousand of them over the demand. It is rather a question of what these graduates will be trained to do and will seek to do. This will be considered in the next section.

(c) Numbers and earnings. There is no register from which to estimate the number of extension workers, of any one grade, or the total working in Thailand. Different manpower estimates in agriculture have, however, been made.

Requirements for high-level agricultural manpower are often compared with total output from university faculties of agriculture. This is of little value for high-level agricultural manpower as a whole, and virtually useless for agricultural extension; many even of the senior extension workers are not graduates, but trained in Maejo and other agricultural colleges. Table 4.12 gives the numbers of university graduates in agriculture trained each year up to 1970.

Four agricultural colleges, Maejo, Ayutthaya, Surin and Tung Song and an agricultural teachers' training college at Bangphra near Bangkok all produce technicians at an 'intermediate' level almost equivalent to two years of university study. The annual output is increasing rapidly, reaching 104 secondary teachers of agriculture and 340 agricultural technicians in 1971. Lower still were higher vocational agriculture courses in twenty-one agricultural schools, scattered through all four regions. In 1971, 1,729 students satisfactorily completed these courses, but departments are now attempting to divert students to the colleges.

Only two of the major employers could supply figures that indicated employment of agricultural extension workers. Table 4.13 gives figures for the Department of Agricultural Extension, showing a classification by position and grade. Grade at entry depends on the level of training received. In 1971 a survey of level of training in the Department showed thirty-three with Master's Degrees, 229 with Bachelor's
Table 4.12

Annual output of graduates in Agriculture to 1970, by sex and university

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<td>Kasetsart</td>
<td>2,397 136 58</td>
<td>272</td>
<td>146</td>
<td>131</td>
<td>91</td>
<td>154</td>
<td>71</td>
<td>226</td>
<td>77</td>
<td>919</td>
<td>443</td>
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<td>106 47</td>
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<tr>
<td>Chiangmai</td>
<td>5 1 11 5 33</td>
<td>33 14 108</td>
<td>25 133</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>**Total</td>
<td>2,397 136 58</td>
<td>298</td>
<td>161</td>
<td>178</td>
<td>104</td>
<td>212</td>
<td>78</td>
<td>309</td>
<td>114</td>
<td>1,133</td>
<td>515</td>
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</table>

* Includes graduates in Forestry, Fisheries and Veterinary Science. Distribution by sex not available. In subsequent years only Faculties of Agriculture are included.

** 1966-70 only.


Comparable figures for graduates from overseas universities are not available.
Table 4.13
Grade and position of professional officers in the Department of Agricultural Extension 1971

<table>
<thead>
<tr>
<th>Positions*</th>
<th>Special grade</th>
<th>First grade</th>
<th>Second grade</th>
<th>Third grade</th>
<th>Fourth grade</th>
<th>Total</th>
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<tr>
<td>1. Administrative officers</td>
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<td>13</td>
<td>69</td>
<td>177</td>
<td>330</td>
<td>591</td>
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<td>2. Regional extension officers</td>
<td>-</td>
<td>1</td>
<td>33</td>
<td>84</td>
<td>13</td>
<td>131</td>
</tr>
<tr>
<td>3. Pest control unit officers</td>
<td>-</td>
<td>-</td>
<td>19</td>
<td>56</td>
<td>148</td>
<td>223</td>
</tr>
<tr>
<td>4. Provincial extension officers</td>
<td>22</td>
<td>139</td>
<td>124</td>
<td>114</td>
<td>399</td>
<td></td>
</tr>
<tr>
<td>5. District extension officers</td>
<td>-</td>
<td>13</td>
<td>229</td>
<td>655</td>
<td>897</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>36</td>
<td>273</td>
<td>670</td>
<td>1,260</td>
<td>2,241</td>
</tr>
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</table>

* Officers in categories 1, 2 and 3 are responsible to Headquarters. The others, though receiving technical guidance from Headquarters, are responsible to the Provincial Governors and District Officers respectively.

Source: Mimeo material supplied in Department of Agricultural Extension. (Material may be faulty: entries assumed correct and inaccurate totals corrected in lines 1, 4 and 5.)
Degrees, seventy with Intermediate and Technical Diplomas in Agriculture, 1264 with completed secondary vocational school and vocational education and 262 special students with agricultural certificates of the Ministry of Agriculture.

The Department of Community Development showed figures for its field staff as follows: provincial officer sixty-nine, second grade supervisor twenty-seven, district officer 177, third grade supervisor ninety-six, third and fourth grade officers 2,044. Only about a quarter of field staff were concerned with agriculture and less than half of the lowest class were third grade (with any secondary or tertiary education). The total number of agricultural extension staff was probably between 250 and 300, most of them non-graduates.

One of the chief facts that emerges from these tables is the comparative irrelevance of the number of agricultural graduates to the problem of providing agricultural extension. Less than one in ten of Thailand's agricultural graduates is engaged in extension work to farmers in the two main departments which provide it; and less than one extension worker in ten is an agriculture graduate. Difficulties in providing adequate agricultural extension work to Thai farmers are not due to an overall shortage of agriculture graduates.

Nor is it due to their absorption into other government extension work; the other Departments use few graduates in extension: less than twenty in Land Development and probably no more in Irrigation extension. Social Welfare's teams are few: if they were all graduates it could make little difference.

What of the private sector? The leading bank in the field has over 120 agricultural credit workers, mainly graduates; four others were reported to be involved but much less so. We may estimate 200 agricultural graduates employed by banks in extension-type work. There are more large companies than banks engaged in some extension, but none on a genuinely national scale. Probably only the larger ones would employ graduates in extension. However, the forecast (Royal Thai Government, 1970) of about one private sector graduate to every four public ones in agricultural extension seems far too small: they are probably nearly equal.
Probably about half the agriculture graduates are working outside agriculture altogether. We cannot assume (as is often done in manpower forecasts) that students take agriculture degrees for a career in agricultural occupations: many have regarded agriculture as a soft option for a moderate student to enter and to pass, and the chance to qualify for further study abroad is relatively good, as a bait for working in an unpopular province.

Three pieces of evidence are relevant here. First, Kasetsart University is clearly trying to outgrow its orientation to agriculture. Both the Engineering and Economics Departments have moved towards more general treatment of their subjects as have some science departments. This suggests that many Kasetsart students are merely seeking a bachelor's degree.

Next, the incentive to work in the Ministry of Agriculture must include whatever can be expected in addition to salary, and this is unlikely to be adequate to retain any graduate with much ambition. This Ministry carries little weight and has usually been allotted to a junior member of any new coup group, because there are few government industries, major capital works or other sources of income for loyal subordinates.  

Finally, we may consider developments in higher agricultural vocational schools: because good students were not attracted to them, regarding them as blind alleys, limited numbers of their students were allowed to sit for university entrance. This led to such concentration on the core academic subjects that the remaining students became largely useless in practical agricultural work. Yet opportunities for graduates within the Ministry of Agriculture itself are not markedly superior: the service has expanded nearly tenfold in two decades, and non-graduate officials have reached at least the second class. The distorting pressure to enter a university is most rationally explained by superior opportunities for either overseas study or employment elsewhere, in the private or public sector.

Graduates in the agricultural extension service are paid on ordinary civil service scales; in other professions these are not adequate to attract graduates without opportunities

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5 The situation is, however, changing with the growth of agri-business and speculation in rural real estate.
for supplementary income. There are some official supplements and some unofficial ones, but these are likely to fall as numbers rise, giving those with degrees or other marketable qualifications a strong economic inducement to leave the service.

The chief non-monetary incentive for young extension officers is government housing, for which their claim is strong, since the main basis is posting to another area. Such housing is usually much better than could be rented on a government salary, but the benefit is often unreal, since housing is often unavailable, and rapid expansion of the service would make this more likely.

Salaries may also be supplemented by per diem and lodging allowances for up to fifteen days a month in the field. Farmers frequently complained of having to entertain officials on their visit, so much of the payment (thirty-eight baht per day and night) is likely to be a genuine supplement. However, these supplements are paid only if budget is available in the month.

Only rarely could a third grade officer, on a salary of 1,250 baht, raise his regular income by these supplementary payments to 1,750 baht; and increased numbers in the field would reduce both entertainment by farmers and supplementary budgets. This gives very little inducement for a graduate to endure poor health and education services, lack of modern amenities and often inaccessibility. He would commonly seek other supplements such as agencies and commissions from merchants, but the opportunities are unpromising.

Extension workers in the private sector are better paid, but not usually by so much as in other professional occupations: an extension officer in a bank will draw a little over 2,000 baht - bonuses may raise this to nearly 3,000. The Thai Rural Reconstruction Movement pays 2,400 baht without bonuses, but encourages its workers to take on agencies for fertiliser, etc. which are technically illegal for government officials.

(d) Field training and standards. Though there have been mistakes in preliminary training, foreign influence in the field has been more helpful. Here the focus has been on farmers' organizations, on generating a desire for new knowledge and for change. This has not been compatible with Thai elitism and has caused some distress among both farmers
and the bureaucracy, but on balance has almost certainly done more good than harm. The farmers, confused at the multiplicity of sources of advice, still expect leadership but now often have to choose between authorities; the bureaucracy, worried that it may be losing the channels through which it could promote the changes it wants, finds farmers expecting and even demanding knowledge, and not merely accepting authority, and feels rather less sure that it has the needed knowledge.

Foreign recommendations and selection criteria, however, promote an ideal type of agricultural extension officer. Professionally he works with and for farmers, encourages them to know, express, and organize themselves to satisfy their own needs, and to use him as a resource either of relevant knowledge or of access to those who are discovering it. But to do this he must have a degree, which certifies that he has taken course work up to the masters' level, and can keep abreast of the latest international research. Foreign advisors may not say so, or even individually think so, but their actions teach it: for many specialized activities they recommend overseas training, and those selected are graduates with this kind of degree.

Agricultural extension is - among the four professions here studied - the one where foreign selection criteria are obviously most harmful. The up-to-dateness of the methods and the deep and detailed knowledge of foreign languages are here quite obviously less important than the capacity to apply some basic scientific techniques to finding out in detail about the relevant conditions affecting Thai farming. Unless overseas training can be reserved for those who know they have this capacity, and can teach new methods, in Thai, to others, good agricultural extension will be made too expensive to give real help to Thai farmers.

To illustrate what is happening in the 'upgrading' of agricultural extension, we discuss three separate plans, in two of which the World Bank has been involved (Fuhs and Vingerhoets, 1972).

The Loan for Improvement of Vocational Education (LIVE) scheme was in origin three-sided, USAID and the Thai Government co-operating with the World Bank to provide buildings, equipment and a team of experts from California State Polytechnic College, to raise the standards of Bangphra and ten agricultural vocational schools. It had, except in
Bangphra, achieved little by 1972, mainly because of difficulties of attracting good staff. More than a hundred teachers from agricultural schools have been trained overseas, and the LIVE program is continuing this policy; already the Working Group on Rural Manpower has condemned the scheme as capital-intensive and inadequately provided with school farms. It was suggested that equal effort should be devoted to the non-project schools and some LIVE buildings be diverted to shorter-run projects.

The Kasetsart development scheme is more recent and has not yet run into similar difficulties. Different departments forecasted their demand for high-level manpower, without any serious attempts to demonstrate that the graduates produced would be willing to work in extension. By 1970, however, Kasetsart was already showing a marked trend away from agriculture. There is no reason to believe that graduates trained in the Kamphaengsaen extension will be more oriented to agriculture than those in Chiangmai or Khon Kaen.

The Working Group on Rural Manpower faced the problem of actually training, immediately, adequate people to transform Thai agriculture. Its admirable report draws attention to the real inadequacies of present extension staff and the training needed to ensure the required transformations. It stresses detailed knowledge of Thai farming conditions and interaction with work in Thai research stations, specially commending the co-operation at Kalasin between the agricultural school and the research station. Yet in the long run it envisages even district extension officers as graduates of Thai universities.

This is not only financially unrealistic, ignoring the effect of expansion (as discussed above) on the only practical inducements to graduates to work in rural conditions; it is unrealistic also in its attitude to Thai universities, subject as they are to pressures to train on overseas syllabuses, cut adaptation to a minimum and use almost exclusively English-language texts. Its short-run recommendation was a practical plan to retrain agricultural extension officers, most of whom are not graduates - first in a general course at a research station, Tha Phra in Khon Kaen province, and then in a practical irrigation-farming course at Muey Si Ton irrigation research station.

Along with this is a proposal for special courses and arrangements to enable farmers' sons to become extension
assistants. Perhaps the inducements in this scheme need reconsideration. For those employed full-time on promoting particular products or irrigation, a salary is suggested; those remaining on their farms and introducing new methods, on a part-time basis, are to be given their training only. It seems desirable to offer an inducement to the farm as a unit, for parting with one of its key workers — perhaps free credit for any approved pioneer projects. This device has been used in other countries (see, e.g. Chapter 5); there would be some difficulty in Thailand because departmental structures are inflexible and credit is not within the sphere of the Department of Agricultural Extension; but contract arrangements with commercial banks might be arranged, beginning perhaps in Accelerated Rural Development areas where such banks are already co-operating in Government development plans.

Even this short-run project was running into difficulties and delays in 1972, but the course at Tha Phra was being carried out with a good deal of success.

Local training material, at all levels, should be able to be produced in Thai, if adequate inducements to write it can be given to Thai agriculture graduates. A fair range of semi-technical journals in agriculture is published, and Kasetsart University has produced several research papers in Thai — though most of them have been produced in English. The National Library carries current — or nearly current — numbers of nine Thai journals listed as agricultural. Four of them are special journals of technical news about particular divisions or crops: rubber (mainly replanting), tobacco, garden crops and agricultural economics; two are departmental publications mainly about overseas developments in rice and in other crops, two are semi-technical journals of agricultural teaching institutions, Kasetsart University and Maejo College, and one is a technical quarterly in agricultural science. Eight other, broadly agricultural, journals are listed, but have probably lapsed.

(e) Analysis. Thailand is under urgent pressure to transform its agriculture, and it cannot rely on introducing new mechanical equipment to change people's work habits. A labour-intensive agriculture is needed, with productivity rising because of improved techniques and skills. This is not the way in which change is taking place at present. Mechanization with large tractors is tending to increase the size of farms; available land is being rapidly used up also
by population expansion, and new ways must be found to absorb labour, some by more labour-intensive industry, but much by more labour-intensive techniques on the land. This makes the development of agricultural research and extension critical.

Foreign advisers have introduced a wide variety of agricultural ideas to Thailand, and stimulated much discussion, but in the interests of 'high quality', most have relied for training on the Thai universities. No doubt they expected an interest in fostering local research. The advisers' field of interest was extension, not universities; Thai universities, however, are under almost unendurable pressure to aim at high fluency in English, acquaintance with text-books based on recent international research, and interest in the newest techniques - the standards by which overseas universities accept or reject students for advanced courses.

This problem can be tackled at two levels. We may ask what agricultural policy and the extension service can do (mainly outside the universities) assuming that universities continue primarily to participate in an international university community rather than to be stimulated by the needs of Thai society. Or we may ask how the international community could, if it wished, alleviate these pressures. Here we consider only the agricultural policy; the international aspects are considered in Chapter 7.

How should the Thai agricultural sector use a university system excessively dependent on recent foreign texts, based on research oriented to wealthier countries? How should it respond to the enormous pressure for foreign degreee?

First, it must be recognized that salary differences do not adequately measure differences in cost between graduates and non-graduates. A large and increasing part of a graduate's training adapts him to an international labour market, raising his market value there. This value determines the inducements needed if graduates are to be attracted and retained; if graduates are used, more funds will be needed for housing and other incidentals to retain them in their positions, and permission for overseas study may well be a necessary inducement; this may generate even stronger pressure to adopt irrelevant new techniques. While graduates, therefore, can no doubt be used, it is important not to use a high proportion of all graduates produced, and so allow them to impose, on the whole agricultural service, the criteria that university
selection has imposed on them.

The short-run scheme of retraining non-graduates and giving practical training to farmers' sons as extension assistants should, therefore, be regarded as something of longer term significance; planning may be disorganized and morale suffer if it is not considered likely to last throughout the careers of most of those now working in it. Some examples may illustrate this.

Planned relations between extension staff and research workers are at present based on the assumption that in future both will be graduates, with parallel tasks, serving farmers. In Thailand this assumption is clearly not generating adequate contact; no feeling of equality exists - the research worker's status is much higher. This should be accepted, but not allowed to create the illusion that the research worker should know the answers. A process should be worked out, by which he discovers both relevant facts and new problems through the extension agent's contacts with farmers. The present special training courses bring the research workers and extension workers together, and use some of the research workers' knowledge in giving courses, but lack training in the actual techniques of using one another's services professionally.

Courses for graduates entering the profession are at present planned as mainly supplementary academic courses to remedy deficiencies in the university programs. Much more professional content will be needed and should be planned on a permanent basis. Graduates will inevitably have gone through a course preparatory for further study overseas. Reorientation to understanding the constraints and the demands of the Thai environment are needed, though once this is accomplished several of their skills will be useful.

Knowledge of English is one skill that needs reorientation. Up to graduation their aim is capacity to think and express themselves in English. In the extension service their knowledge of English should be judged exclusively by their capacity to convey in Thai, lucidly and clearly, the meaning of any technical work that they read in English.

For any extension work this skill must clearly be cultivated; it would be a good test, and good orientation, to set English passages dealing with quite technical agricultural topics for translation into language a Thai farmer could
understand. Graduates should be extensively used to prepare extension material, based on information available in English.

This suggests criteria for sending extension workers for further study overseas. Aid administrators and Thai officials alike should have always in mind the inducement aspect of any award of overseas training: the behaviour of hundreds of people will be affected, directly or indirectly, by the criteria for choice of overseas trainees; aid pays with prestige and greatly increased income those who exhibit these criteria; it buys what it pays for. Naturally those selected must be able to profit from the training; but it is important that they should be selected both for kinds of behaviour that need encouragement and for qualities that will lead them to use their training for Thailand. At present those chosen may well be simply those with the highest marks in English and in pre-requisite courses; and this fact will profoundly affect the whole education system.

The changes outlined above could be made in agricultural extension, even within the existing pattern of the universities, mainly because it is not a powerfully organized profession which itself defends—in its own interest—conformity to received international standards. Other professions have less freedom of action.

Summary and conclusions

This study of the four selected professions in Thailand began with the hypothesis that Thai professions had become more inappropriate to their tasks because professional associations based their power on conformity to international standards and the support of an international professional community. It seemed probable that these associations used their control of entry to the professions to enforce both standards and disciplines that conformed to international requirements, and hence overemphasized qualities relevant in rich but not in poor countries and neglected other more relevant qualities.

Investigation of the facts does not wholly support this hypothesis. Conformity to irrelevant imported patterns does, indeed, make the professions less able to meet Thailand's needs than they could have been. The impact of foreign professions as organized groups is significant and professionals do rely much more on the prestige of conforming to an outside
model than on any local hope or fear. This situation does not, however, appear to be caused by Thai professional associations imposing selection and discipline to defend irrelevant standards.

Thai professional associations tend to be relatively passive about this: they do support maintenance of international standards, or rather, training based on them - for they are certainly not active in enforcing professional discipline. Moreover, even the maintenance of training which conforms to western models results from interaction of the National Education Council and the Civil Service Commission rather than from active concern by professional bodies. Most professional associations would oppose any open attack on their standards, mainly because it would threaten such recognition as they have; but there are differences between professions here. The Thai Medical Association would probably oppose shorter training or more recognition of traditional medicine. The Institute of Certified Accountants, however, though publicly conforming to international procedures, does not want stricter standards enforced.

Professional associations' behaviour suggests a concern for international recognition and potential international mobility. Thai members may not wish to go abroad or even use mobility directly as a bargaining counter. They clearly see their earning capacity as influenced by their substitutability for professionals in wealthier countries: for many leading professionals, overseas training has made this attitude almost second nature, though actual practice in Thai conditions has weakened their adherence to the discipline.

Adaptations tend to be made reluctantly: more hasty and cursory performance may be enforced by the need for income, but tends to make professionals feel frustrated. Other adaptations, necessary for adequate performance in Thai conditions but bringing no personal advantage, tend not to be made: for example, most Thai medical students would see the need for more concern with public health and less with new techniques, but might not maintain this enthusiasm after they graduate. Similarly it is difficult to adopt ethical standards in accounting that would differentiate the profession from foreign models but make for a more enforceable discipline.

These are relatively subtle effects of the professions' international orientation: much more obvious are its effects
on the structure of each profession - their inability to accept different levels of professional status that would make possible more service to a relatively poor population: the impossibility of training, for example, engineers competent only within the limits of rural roads and minor irrigation channels, but fully responsible and committed at that level.

How could Thai universities begin weakening the emphasis on qualifications for overseas study?

First, a change is needed in the attitude to English language skills. Fluency is a snare in professional work unless an international language is also the local language. Accurate reading and translation skills are needed, and lack of these can easily be masked by fluency. Acquisition of fluency early tends to produce an English-educated person, who is a doctor or accountant as part of his experience of western culture, instead of a doctor or accountant who can use English to further his profession. The objection to the former is not a nationalist one. It can be firmly upheld by those who believe that mankind must ultimately have one language and one government. The object of aid is to overcome the poverty of poor nations, which is one major obstacle to the global village. The whole of this chapter has shown that professionals, trained in the techniques of countries wealthier than their own, are being trained for export, not for remedying the ignorance and poverty of their own section of the depressed people of the world.

Instead of fluency in English, the ordinary student, in professional subjects, should be taught reading and translation skills; those who qualified in terms of professional subject matter should be offered, as a normal part of any overseas study, an adequate period of full-time language training. It is essential to break the influence of competition merely in fluency as the criterion of all professional progress.

Another instrument of reform would be generous financing of locally oriented research and preparation of local undergraduate texts and popular studies. Payment for research into local problems should be so high that university staff undertaking it would not need to spend time on income-earning activities. Some of this is already done, but payment is at rates related to ordinary government salaries rather than to consultancy and other work (notably work of
international significance paid for by foundations) that staff need to do to make up their living expenses.

If locally-oriented research could be made popular and rewarded with promotion, survey work and other research assistance by under-graduates might be used as a teaching tool.

The aim would be to use not foreign language books, which are scarce, but facts and ignorance, which are abundant, as instruments to teach that knowledge is mainly a quest, and that when it is pursued methodically it yields by-products in improving the quality of life.

These changes would be only a step towards changing professional structure. They would, however, produce a group with enough orientation toward winning and transmitting information in Thailand to help to transform the professions. In Thailand, which has good - though insufficiently wide-spread - secondary education in an indigenous language with its own scientific vocabulary, determined pressure towards locally oriented professions would have a chance of success - such as was achieved earlier in Japan - even without strong international support: but first the strong pressure to send more and more professionals for advanced training overseas must be broken.

Without overseas support this change could never be easy. The bonds of the international professional market are hard to break. The main reason for writing this book is to arouse international interest in changes, discussed in Chapter 7, which might make such a break less difficult for all those of the less-developed countries which wished to make it.
Chapter 5

Taiwan: flexible and mixed disciplines

Jen-jen Liu

To the main characteristics of the professions in less
developed countries - their western origin, the relatively
high incomes of their practitioners and their concentration
in urban areas - several more characteristics may be added
in Taiwan. The structure, laws and regulations of present
day professions are largely mixtures of Japanese and
American practices; certain of the Western type professions
have local counterparts; all are male-dominated, and in
almost all there are some 'underground' professionals.

Background to professional structure in Taiwan

(a) Historical origins. The traditional Chinese pro-
fessions corresponding to Medicine, Accounting and Archit-
ecture were based on individual apprenticeship and related
to Buddhist and Taoist religious practices. Except for
medicine they did not survive the Japanese colonial period
(1895-1945). The Japanese introduced training on Western
lines for sub-professional positions beginning with agric-
ultural middle schools but did not encourage professional
training of the local population. Most of the students and
faculty of the one university (Taihoku Imperial University -
now National Taiwan University) were Japanese. Japanese
professionals practised throughout the country.

Taiwan was returned to China in 1945 and nearly all Japanese
were repatriated. Because of acute shortage of professionals
in China itself a few Japanese professionals were invited to
return, but many professional posts were filled by inadequately
trained Taiwanese. With the advance of the communists in China
many professionals and sub-professionals, especially those
trained in American systems, migrated to Taiwan. English became
the professional language, and English texts began to be pir-
ated on a large scale in Taiwan. The cheapness of these texts
made the writing of Chinese text-books (formerly a source of income to scholars) no longer profitable. Moreover use of English texts began to stimulate a 'brain drain', particularly to the USA. In the period 1956-1969 over 23,000 students went abroad for further study and a survey in 1968 showed that well over half of those abroad were in the USA.

(b) Training of professionals. Professionals in Taiwan today are trained in colleges and universities. The number of students per 100,000 population in Taiwan increased from eighty-seven around 1950 to about 1200 by 1970;\(^1\) while the number of institutions increased during the period at an average annual rate of 12.8 per cent, and the average number of students per school almost twice as fast, the number of teachers per student fell by about a half. Between 1959 and 1970, for example, the teacher/student ratio declined from about 1:10 to about 1:20.

In 1955, engineering was the largest field of study with nearly 25 per cent of total enrolments, agricultural fourth largest, with about 11 per cent of total enrolments, and medicine the second smallest with only about 4 per cent. By 1968, engineering had fallen to second place and, although it had grown by seven times, accounted for only about 20 per cent of total enrolments; agriculture had increased fivefold but its proportion of total enrolments had dropped to only about 7 per cent, while medicine with about 10 per cent of total enrolments had risen from smallest but one to third largest. Students abroad showed roughly the same pattern: of the 2,056 students who went abroad in 1970, about 25 per cent were studying in engineering, about 4 per cent in medicine, and about 7 per cent in agriculture. Less than 10 per cent of the number of students reported as going abroad over the 18 year period had returned to Taiwan by 1970.

(c) Stock of professionals. The proportions of professional, technical and related workers to the total labour force aged fifteen and over is shown in Table 5.1. The number of professionals and sub-professionals grew more rapidly than the population. In 1956 there were about 93

\(^1\) Today Taiwan has about the same ratio of tertiary students to total population as Japan or Israel. In Southeast Asia only the Philippines has anything like the same ratio; the rest of the countries in this study have ratios of one-quarter to one-tenth that of Taiwan (UNESCO, 1970, Tables 1-1, 4-1).
professional, technical and related workers to every 10,000 population; by 1970 there were 130. Such a development is consistent with Taiwan's rapid economic growth during that decade. As might be expected, the concentration is much higher in Taipei (7.7 per cent of the labour force) and in other municipalities (5.6 per cent) than in non-urban areas (2.9 per cent).

(d) Government authority over professions. The Ministry of Education is the principal authority in charge of training for professions. Examinations which control entry to the professions are the responsibility of the Ministry of Civil Service of the Examination Yuan while the Ministry of Interior and the Ministry of Economic Affairs regulate and administer all the professions. The basic laws regulating professional activity are set by the Legislative Yuan while infractions of the regulations are dealt with by the Judicial Yuan and the Ministry of Justice or the Executive Yuan.

At local government level, the Department of Education is responsible for training sub-professionals while the Department of Reconstruction controls the registration of all professions and sub-professions except medical ones, regulated by the Department of Health. The police also assist in making regulations effective. Because the training, qualifying examinations, regulatory power and administration power each belong to different government authorities, co-operation and co-ordination are particularly important. As we shall see, many difficulties and problems in our four professions may be attributed to lack of such co-operation and co-ordination.

The professional associations in Taiwan act as a bridge between the government and the professionals, informing their members of government policy and regulations, and passing their members' opinions to the government; the former role is the more important, however. The associations may also act as a club and centre for professional discussion and communication, but seminars and similar professional activities seldom occur. They also promote and protect their members' interests, establishing, for example, medical programs in government employees' and labourers' medical insurance programs, pushing through regulations on endorsement of the financial statements of public companies by chartered accountants, and restricting to construction association members the right to tender for public works programs. Finally, they collect information and statistics on the relevant profession for the government.
Table 5.1
Stock of professional, technical and related workers, 1956-1970

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</thead>
<tbody>
<tr>
<td>Total population (000)</td>
<td>9,390.4</td>
<td>10,792.2</td>
<td>12,628.3</td>
<td>13,650.4</td>
<td>14,675.9</td>
</tr>
<tr>
<td>Labour force 15 and over (000)</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>4,336.6</td>
<td>5,053.1</td>
</tr>
<tr>
<td>Total professional*</td>
<td>87,178</td>
<td>114,917</td>
<td>151,032</td>
<td>167,497</td>
<td>191,040</td>
</tr>
<tr>
<td>Professional as % of population</td>
<td>0.9</td>
<td>1.1</td>
<td>1.2</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Professional as % of labour force</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>3.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Medical (incl. herbalists) as % of total professional</td>
<td>11.7</td>
<td>10.8</td>
<td>8.6</td>
<td>7.4</td>
<td>8.1</td>
</tr>
<tr>
<td>Medical (excl. herbalists) as % of total professional</td>
<td>9.8</td>
<td>9.3</td>
<td>7.6</td>
<td>6.5</td>
<td>6.4</td>
</tr>
</tbody>
</table>

* Described as 'Professionals' until 1966; thereafter as 'Professional, technical and related workers'.

(e) The 'underground' professions are perhaps more important in Taiwan than in any other country included in this study. Except in the agricultural profession, 'underground' or unqualified, unlicensed professionals compete with the licensed qualified practitioners, giving a bad name to the entire profession since laymen cannot distinguish between them. While the government authorities can detect and locate underground practitioners, they are hampered by lack of budget and staff, and punishments are too light to be effective deterrents. These weaknesses may reflect lack of determination by the government to stamp out these operators: law-makers, councilmen and high ranking officers often themselves request the police to release arrested practitioners, sometimes using political pressures and bribery.

(f) Examinations. Finally, something needs to be said about Taiwan's unique professional examination system. The Examination Yuan, appointed by the President, is in charge of examinations, and of recruiting and promoting civil servants; there are thus two Ministries, the Ministry of Examinations and the Ministry of Civil Service. The examinations Ministry conducts examinations each year at higher and ordinary level for professional and technical licences and for the civil service. These higher examinations are very difficult and the pass rate is very low (Table 5.2); they include such subjects as Chinese history and language. One who passes the higher written examinations may be admitted to the Civil Service at a minimum level of 'Recommended Appointment'. (There are three levels of entry: Designated - about 40 per cent of total; Recommended - about 50 per cent; and Presidential Appointment - 10 per cent.) Those who take the high written examination do not need to take the civil service examination in addition, as they are considered already sufficiently qualified for civil service posts. The higher written examination for the civil service covers other subjects than those for the professions, as seen from Table 5.2.

A much more important and much the more common way of entering the professions is through the examination by credential or by credential plus interview. Relatively few pass on credentials only.

In addition to these two main types of examinations, a third, special, examination may be held from time to time for those who lack academic qualifications but possess wide practical experience; this is relevant for herbalists,
engineers and accountants, and other non-professionals.

Table 5.2

<table>
<thead>
<tr>
<th>Written examinations, passes, 1950-1971</th>
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<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Reporting</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>High Professional</td>
</tr>
<tr>
<td>Physicians</td>
</tr>
<tr>
<td>Pharmacists</td>
</tr>
<tr>
<td>Dentists</td>
</tr>
<tr>
<td>Nurses</td>
</tr>
<tr>
<td>Medical technicians</td>
</tr>
<tr>
<td>Lawyers</td>
</tr>
<tr>
<td>Architects</td>
</tr>
<tr>
<td>Accountants</td>
</tr>
<tr>
<td>Civil Service</td>
</tr>
<tr>
<td>Civil engineers</td>
</tr>
<tr>
<td>Architects</td>
</tr>
<tr>
<td>Agricultural officers</td>
</tr>
</tbody>
</table>


Once a candidate has passed the examination held by the Ministry, a diploma of qualification is issued. With this and his academic records, he can then register at the Department of Reconstruction of any city or hsien government, on payment of certain fees. Medical practitioners must also register as members of their local professional association. A professional entering the civil service, however, does not need such registration.

Although examinations are important, many other factors govern the kind of jobs professionals get. In both the public and the private sectors letters of recommendation
from influential people are usually more effective than certificates in finding jobs, and personal relationships more important than professional or technical competence in promotion. Understandably, more time and money are spent on cultivating such relationships than on collecting professional journals.

(g) Professional magazines are still rare, and the ones which do exist suffer many difficulties from lack of finance and low circulation (Table 5.3). Advanced professional books in Chinese are almost non-existent. A vicious circle is created: because the market is so small, it is not profitable to write and publish professional reports and journals; and because such journals are so few and so poor in quality, professionals seldom buy them.

(h) Women in the professions. One final feature of the Taiwan professional scene is the extent to which it is male-dominated. This can be shown from statistics in the UNESCO Statistical Yearbook (1970) of enrolments in Taiwan's universities which show the percentage of female students rising only gradually from 15 per cent in 1955 to 34 per cent in 1968, with the percentages of females more or less stable in professional subjects, around 30 per cent in medicine, 18 per cent in agriculture and 2 per cent in engineering. The membership lists of practising professionals show about 10 per cent each of physicians and dentists as female, with pharmacists 38 per cent and architects only 3 per cent.

The medical profession

'If one cannot become a premier, one should become a good doctor' runs a traditional proverb. Because of the strong preference for medicine as one's occupation and the shortage of training facilities after World War II, private funds were invested in new medical, pharmaceutical and nursing schools to meet the demand.

(a) Training of medical and paramedical personnel. Enrolment in medical schools in Taiwan increased from 712 in 1955 to over 20,000 in 1970, an average annual rate of increase of 25 per cent; although medicine still accounted for only 10 per cent of total enrolments, this was over double its 1955 share of 4 per cent. Another indication of the increase in medical personnel is that in 1947 there were
0.5 registered physicians and dentists for every 10,000 population; by 1972, there were 8.8.

Table 5.3
Classification of magazines published in Taiwan end of 1970

<table>
<thead>
<tr>
<th>Classification</th>
<th>Taipei City</th>
<th>Taiwan Province</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicine and Sanitation</td>
<td>37</td>
<td>13</td>
<td>50</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>44</td>
<td>3</td>
<td>47</td>
</tr>
<tr>
<td>Agriculture and Pasture</td>
<td>22</td>
<td>15</td>
<td>37</td>
</tr>
<tr>
<td>Industry and Commerce</td>
<td>107</td>
<td>55</td>
<td>162</td>
</tr>
<tr>
<td>Economics</td>
<td>75</td>
<td>15</td>
<td>90</td>
</tr>
<tr>
<td>Other</td>
<td>676</td>
<td>342</td>
<td>1,018</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>961</strong></td>
<td><strong>443</strong></td>
<td><strong>1,404</strong></td>
</tr>
</tbody>
</table>


Entrance to medical schools is by a Joint Entrance Examination taken after successful completion of an accredited senior middle school or its equivalent. Doctors are trained in six Colleges of Medicine. At present there are six schools in the National Taiwan University College of Medicine: the School of Medicine (established at the end of World War II); the School of Pharmacy (1953); the School of Dentistry (1955); the School of Medical Technology (1956); the School of Nursing (1956), and the School of Rehabilitation Medicine (1970), and eight further post-graduate institutes: Biochemistry, Microbiology, Pathology, Pharmacology, Physiology, Public Health, Anatomy and Pharmaceutical Science. Five colleges provide dental training in a six-year course graduating about 300 students per year. In addition, there are seventeen vocational medical schools, thirteen to train nurses, and two each to train pharmacists and medical technicians. The School of Medicine offers a seven-year course (two years pre-medical, four years medical and one year rotating internship), the School of Dentistry a six-year course (including two years premedical), leading to the
Bachelor of Medicine and Bachelor of Medicine in Dentistry respectively. The nurses and pharmacists have four-year courses.

There are also private medical colleges in Taipei, Kaohsiung and Taichung all established 1956-1960 and a private Chinese College of Medicine, teaching herbal as well as Western medicine in Taichung. A public National Defence College of Medicine is also in Taipei. Nurses are trained in thirteen nursing schools, mainly private, and in addition there are two schools each for pharmacists and medical technicians.

Tuition and fees vary from school to school, higher in the private, lower in the public schools. In the College of Medicine of National Taiwan University in 1970, costs for medical students (exclusive of the internship year) amounted to NT$2,650 per semester; in the private schools, fees may be three to five times higher than this. Expressed at the current rate of exchange in 1970, the lower rate amounted to about US$66.25 - Taiwan's per capita income in 1970 was estimated at US$329.

After graduation from these colleges, students can take the Qualifying Examination for Doctors, given three times each year. After passing this, they are given a certificate allowing them to apply for a licence to practise from their local public health authority. To practise they must join a local medical association, but to work in a public hospital, they need not: most doctors who work only in public hospitals are not members.

(b) Numbers of medical professionals. The figures on the number of medical professionals differ somewhat according to the source. An official estimate from the National Health Administration shows over 11,000 registered physicians but the same source shows just over 50 per cent of these actually engaged in service (Table 5.4). Other tables in this section show somewhat lower figures, for several reasons. First, the lower estimates are taken from the professional associations' handbooks which, as we have seen, are almost sure to underestimate total numbers because doctors working in public hospitals need not belong to professional associations. Second, figures from the Bureau of Accounts and Statistics count as doctors not only those in public hospitals but others not registered with the professional associations: some retired doctors and even some
Table 5.4  

Medical and paramedical personnel

<table>
<thead>
<tr>
<th></th>
<th>Registered</th>
<th>Engaged in service 1972</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1947</td>
<td>1972</td>
</tr>
<tr>
<td>Physicians</td>
<td>359</td>
<td>11,386</td>
</tr>
<tr>
<td>Dentists</td>
<td>*</td>
<td>1,744</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>21</td>
<td>4,079</td>
</tr>
<tr>
<td>Nurses</td>
<td>451</td>
<td>9,407</td>
</tr>
<tr>
<td>Midwives</td>
<td>14</td>
<td>7,273</td>
</tr>
<tr>
<td>Dispensers and others</td>
<td>5***</td>
<td>575***</td>
</tr>
<tr>
<td>Herb physicians</td>
<td>n.a.</td>
<td>2,765</td>
</tr>
</tbody>
</table>

* Included with physicians.
** 'Other health personnel'; may include dispensers.
*** Dispensers only.
# Health centres and health stations, no breakdown by public/private.

Source: National Health Administration.
'underground doctors' practising illegally by using credentials of real doctors (see Section g). Probably around 5,000-6,000 physicians are in practice in Taiwan today.

Figures for dentists, pharmacists and nurses may also vary for similar reasons. Among dentists also, there may be some 'underground' or unqualified practitioners: one estimate has put their number as high as 1,700 compared to the approximate 800 legally qualified dentists. It is even more difficult to determine the numbers of nurses and midwives working. Many who are registered may not be practising - e.g. married women at home; and some unqualified nurse assistants may be included in Table 5.4.2

Just under one-fourth of the doctors in practice around 1970 and over half the dentists had foreign training.

An interesting feature of Taiwan's medical profession is the high proportion of those over fifty-five years old. The handbooks of the professional associations show the proportion as 46 per cent but these may include some retired or even dead doctors not yet eliminated from the register, and exclude many younger doctors who are not yet members because they are still getting experience in public practice and saving to set up in private practice. However the brain drain affects mainly younger doctors and this could explain the unusual age structure.

(c) Public-private distribution. About one-fifth of doctors employed in 1972 were in public service, and the rest in private practice. Dentists and pharmacists and all other medical personnel except nurses also seem to follow this pattern.

Many of the doctors working in public hospitals also work in private ones (a few may be counted twice). It is a common practice for the largest public hospitals to hire part-time physicians who are qualified to practise privately and have their own clinics. This has many advantages. First, the salary a public hospital can offer is restricted by the government budget and by government regulations. Only if a government salary is offered for part-time work can it compete with opportunities for good doctors in the private market. Part-time work enables public hospitals to

2Some professionals and sub-professionals may also be abroad or have changed their occupation.
hire first-rate physicians. Second, contracts are annual, which gives the full-time public hospital doctors an opportunity to learn from the many and constantly changing private physicians. Actually, when full-time physicians think they have learned enough, they generally leave to open private clinics themselves. The turnover in the public hospitals is thus very much higher than in the private hospitals. In this way, the public hospitals act as on-the-job training institutes.

Another advantage of the part-time system is that it enables private doctors to extend their contacts among the masses, their potential patients. They also learn how to use the most up-to-date methods of treatment and equipment which they may subsequently purchase for their own private practices.

Even though there is a legal barrier to the employment of part-time physicians in public hospitals, it is an open secret that because of these advantages, most public hospitals have such physicians.

(d) Earnings. For all the professions except nursing, earnings are higher in the private than in the public sector (Table 5.5). The order of earnings is generally consistent with the length of training, except for dentists. The lower salaries of nurses in the private sector reflect the lower average quality: while public hospitals have to employ registered qualified nurses, private hospitals and clinics and private doctors may take school leavers from the lower middle school, give them three months on-the-job training and employ these 'nurses' at a considerably lower salary. For the other professionals, lower public sector earnings do not reflect lower average quality, but may well reflect part-time status. Also, public employees often have some income in kind, perhaps housing, food allowances or fuel allowances, usually related to family size and hence especially attractive for large families. The system is different for different public institutions or for the same institutions at different times; rank, family size, and seniority are important in theory, but in practice the rules are poorly observed and complaints are frequent.

Gift income is also important, especially for surgeons or obstetricians who usually receive a gift of NT$500-2,000 from the parents for the birth of a son, or half that—or less—for a daughter in public hospitals. Gifts to surgeons
vary with the kind of disease. As such gift income is beyond the reach of the tax collector, it is often preferred to other kinds of income.

A third important source of income for doctors is from sales of medicine or commissions from drugstores or drug manufacturers for specifying particular brands in prescriptions.

Although no figures are given for herb doctors in Table 5.5 their incomes are believed to be about half those of the western-type doctors.

<table>
<thead>
<tr>
<th>Table 5.5</th>
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</thead>
<tbody>
<tr>
<td><strong>Average monthly earnings of medical professionals - 1972</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Professionals</td>
</tr>
<tr>
<td>Physicians</td>
</tr>
<tr>
<td>Dentists</td>
</tr>
<tr>
<td>Pharmacists</td>
</tr>
<tr>
<td>Senior nurses</td>
</tr>
<tr>
<td>Sub-professionals</td>
</tr>
<tr>
<td>Nurses</td>
</tr>
<tr>
<td>Midwives</td>
</tr>
<tr>
<td>Dispenser</td>
</tr>
<tr>
<td>Dental assistants</td>
</tr>
<tr>
<td>Tooth-fitting technicians</td>
</tr>
</tbody>
</table>

* NT$40.00 = US$1.00

Source: Interviews with Medical Professionals.

A senior doctor in a public hospital pointed out that the average salary in that hospital was NT$7,000, the top salary NT$10,000; he compared this to a reported salary for Taiwan doctors in the United States of US$700, net of food, housing and transport, four times the possible net income of a public sector doctor in Taiwan.
(e) Brain drain. Since the income of medical professionals at the main destinations - the United States and Canada - are as much as ten times as high as in Taiwan, economic motives alone are usually strong enough to overcome any obstacles. As long as the big income gap is not narrowed and there is no change in the government's emigration policy, the brain drain will continue.

The brain drain at its most dramatic can perhaps be seen in the number of medical graduates of National Taiwan University who have gone abroad (Table 5-6). This table shows those who have gone to Canada and the USA only. Not very many are believed to have gone to other countries. Graduates of other universities have probably a lower rate of emigration.

Nurses too have been recruited in substantial numbers - though we do not know exactly how many - over the past few years, especially to West Germany and Japan. One effect of this recruitment was that in the late 1960s, several new training schools were opened to meet the demand. Now that this recruitment has dropped off, there appears to be an excess of supply of nurses.

This brain drain affects both practising professionals and students. Often a student completing a course tries to go abroad immediately, but has to work for some time to gather funds or experience or to prepare for further examinations. Almost all the medical personnel we visited, especially the younger ones, desired overseas training. Those without it have simply not yet overcome all the obstacles. The possibility of getting overseas training is one reason why many new graduates stay in public hospitals or church-financed and operated hospitals. Examinations, not distance or travelling expenses, are the main obstacles: overseas training or experience can give one a highly paid job either overseas or in Taiwan, and becomes the objective of a college student from his first day as a freshman.

(f) Control: the professional associations and the government. The medical professional associations play an important role in codes, discipline, legislation and standards. They exist at only two levels: local and provincial. The provincial associations are made up of local associations, not individual members. By law, any medical practitioner must first become a member of his local professional association before he can open a clinic. Anyone
convicted of a crime or violating regulations of the association, or renting or selling his name or licence to an unqualified practitioner may be either warned or dismissed, according to the severity of the infringement, by a two-thirds vote of the association's board of directors. Serving military physicians are not accepted as members. The provincial association states that members must be of Chinese nationality, but this requirement is not found in the local associations. Under the provincial association there are three committees: the Medical Affairs Committee to help members against outside pressures; the Medical Disputes Assessment Committee to give professional assessment to medical disputes; and the Public Health Policy Committee to advise health authorities on medical policy.

Table 5.6

<table>
<thead>
<tr>
<th>Years of graduation</th>
<th>College total</th>
<th>School of Medicine</th>
<th>School of Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948-55</td>
<td>3.02</td>
<td>3.03</td>
<td>- *</td>
</tr>
<tr>
<td>1956-60</td>
<td>17.00</td>
<td>17.08</td>
<td>10.63</td>
</tr>
<tr>
<td>1961-66</td>
<td>31.30</td>
<td>38.10</td>
<td>22.83</td>
</tr>
<tr>
<td>1967-70</td>
<td>13.90</td>
<td>17.89</td>
<td>9.37</td>
</tr>
<tr>
<td>Total production of graduates</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1948-1970</td>
<td></td>
<td></td>
<td>2,987</td>
</tr>
</tbody>
</table>

* 1957 is the first year the School of Pharmacy graduated students.

Source: Alumni Association of College of Medicine NTU.

Fees of NT$1,300 for practitioners and NT$875 for non-practitioners were set at the local level for Taipei city in 1970. In addition each local practitioner had to pay NT$120 and each non-practitioner NT$96 to the provincial association.
Sub-professionals have also formed such associations: dental assistants formed one and successfully put pressure on the Government to legalize their position and regulate entry by examinations, in spite of opposition by the dentists' associations; nurses' associations have been less successful in opposing the employment of unqualified nurses such as the maids/nurses who have only three months training; the midwives' association has opposed - so far unsuccessfully - the method of taxation, based on an arbitrarily set sum, asking instead for one based on the numbers of births attended.

(g) 'Underground' practitioners. One of the professional associations' chief problems in their relations with government is that of 'underground' or illegal practitioners.

The present law for medical personnel, passed in September 1943, has long been condemned as being mainly responsible for the ever-increasing number of 'underground' medical doctors, estimated in January 1973 at more than 10,000, as compared to only about 6,000 legally qualified doctors. The law not only cannot exterminate these underground doctors, but actually protects them. Article 26 says that 'A physician opening a private clinic without a Diploma for Medical Doctors or without membership in the local medical association will be fined NT$1,500 by the health authorities'. It has proved impossible to apply this to underground doctors since they are not physicians, and no other law forbids a non-physician opening a private clinic. Furthermore, a medical doctor will be punished according to the 'fault due to business practice' article if his carelessness causes death or injury to a patient. However, an underground doctor in the same circumstances will be punished only one third as severely, according to the 'common fault' article, since he is not 'practising a business'.

Underground practitioners are of various types: retired military doctors, usually with some practical field training and some medical knowledge, but not properly qualified, have received relatively sympathetic treatment from the government; those who retired before 1949, with a military rank of at least captain, automatically received licences to operate private clinics, without taking any professional examination; as a reward for military service, they could, through on-the-job training, open private clinics and become regular doctors. There is also a 'market' in which licences are bought or hired. Sellers are some of the licensed military doctors, doctors in public hospitals prevented by inexperience
or lack of capital from opening clinics, and doctors practising abroad; buyers are military doctors retired since 1949, failed medical students, and doctors' assistants who have picked up some skills and wish to open clinics. The buyer will be registered as a practising doctor in the name of the seller: there will be double counting in the statistics if the seller is practising, and is counted within an institution. The monthly rental for licences varies according to circumstances but is reported to be around NT$2,000-4,000, with 'sale' very much higher.

Some underground doctors practise without any credentials, prescribing over the counter in drugstores, or moving their clinics from place to place to escape detection.

The professional associations oppose these underground doctors strongly for ethical reasons and also because they compete with qualified doctors, charging their patients much less and often taking patients away from legally qualified doctors. Since the professional associations cannot punish offenders themselves, they have pressed the government to control these practices.

Finally in June 1967 a new law governing the medical professions was passed by the Legislative Yuan. Mainly because of pressure from the military authorities, this new law was, for years, not put into effect by the Executive Yuan. According to Article 28 of this law, 'Any practitioner not having a legal qualification as a medical doctor will incur one to three years in prison and a fine of NT$6,000-15,000 and all drugs and medical equipment will be confiscated'. If the patient is killed or injured, the practitioner will be punished twice as severely as the 'common fault' punishment, and will have to pay compensation.

The delay in enforcing this law aroused the anger of all regular medical professionals. In late 1972 all the medical professional associations endorsed a half-page protest advertisement in the daily newspapers. The Executive Yuan was then forced to deal with the problem of the retired military doctors and in September 1972 the Legislative Yuan passed another regulation granting military doctors operating illegally a three-year grace period to pass a special, relatively easy, examination or assistance in changing to another occupation. The new health law was ultimately executed in 1973 and several prosecutions under it have occurred.
Some special local features. A special characteristic of the medical profession in Taiwan is the degree of competition between professionals and sub-professionals: dentists on the one hand and dental assistants and tooth-modelling technicians on the other, pharmacists and pharmacist assistants (dispensers), qualified nurses and unqualified nurses or maid-nurses. Imitations of drugs are also manufactured illegally.

The most severe case is between dentists and dental assistants. According to the Taiwan Dentists' Association, there are only slightly more than 800 legal dental clinics in Taiwan, but more than 1,700 dental assistants practising as dentists illegally. Originally many of these were trained by dentists during the Japanese occupation to make and fit gold and silver teeth. The Ministry of Civil Service Examinations gives ordinary professional examinations to dental assistants, which means they have a restricted legal status: under regulations introduced after pressure from the Dentists' Association, dental assistants are permitted only to fit teeth, and tooth modelling technicians to make them. However, many dental assistants still operate full dental clinics; their competition has reduced qualified dentists' earnings to levels that hardly compensate for six years training in college and some have migrated to other countries, especially Japan, to practise.

Any drug manufacturer or drugstore must by law employ a pharmacist. Manufacturers can afford this but for many small drugstores, making less than NT$10,000 a month, it is a hardship to employ one at NT$5,000 a month: most drugstores - except the few largest ones - either employ a pharmacist in name, renting or buying a certificate as described above for doctors, or take on a pharmacist's assistant, or a dispenser. About half the 2,000 qualified pharmacists are employed outside drugstores, and enforcing the law would reduce the number of western-style drugstores to less than half the present number. The pharmacists argue that drugstores are too numerous by world standards; but present training plans will - according to the National Health Administration - produce 12,000 pharmacists in the next five years.

Some of these could help staff the rapidly expanding drug industry, producing locally many internationally known drugs. This industry, however, is also threatened by many illegal imitations of branded drugs, often with little or no medical content.
The herbal doctors are recognized by an examination in two divisions - internal medicine and herb surgery given by the Examination Yuan. A characteristic feature of this profession is its secret prescriptions passed on, usually, only to the doctors' sons. An article in a thirty-year old law on medicine provides for bonuses to encourage the revelation of these secret prescriptions to the health authorities, but these bonuses are insufficient and have achieved little. Most herb doctors today are elderly men, with elderly patients: few young men now learn herb medicine. Herb doctors have no effective professional organization and their protests against lack of recognition - for example, in official insurance schemes - make little impression on the medical authorities.

(i) Summary. The principal characteristics of Taiwan medicine are the decline of traditional Chinese medicine and rise of Western-type training and patterns of practice, with a brain drain to countries with higher medical incomes; the concentration of professionals in the private sector and urban areas, and the prevalence of underground practitioners and imitation drugs.

Market forces tend to concentrate medical service in towns and doctor vacancies in rural public health stimulate resort to underground practice. A two-tier system of medical examinations with the lower layer confined to rural areas might make it possible to control and employ the knowledge and skill of relatively untrained former army doctors and other underground practitioners. This could be supplemented by requiring government doctors in towns to work in rotation in district centres and those in district centres to circulate by mobile clinics to rural areas.

Municipal hospitals run on present practices, using part-time staff who also work in private practice, are able to make a profit and should be extended by further investment; but most efforts to counter the flow to the cities, the private sector, and overseas, encounter severe financial problems and difficulties of control.

Accounting

(a) Background. When people are sick they know the alternatives are health, and illness or death, and they consult a physician; when they are in trouble with the law
the alternatives are freedom and imprisonment or a fine, so they consult a lawyer. Accountants, however, do not enjoy such a strong position. Up to World War II, qualified accountants were very few — perhaps no more than thirty. People did not understand or recognize their functions; nor did the government require their services. No one could make a living entirely by his business as an accountant, but had to have some other source of income. It was only around 1957 that the government organized accounting as a profession.

After Taiwan was ceded to Japan, the Western bookkeeping system was introduced and the old Chinese system gradually lost its popularity and disappeared. Accounts in the old system were presented in a form (Chung Zeng) rather like a modern journal with a double line dividing each page, the upper part being for receipts and the lower for payments, both filled in in chronological order. No distinction was made between account debited and account credited, though separate accounts called inflow and outflow accounts were maintained for each major trade partner in the same form as for the general accounts. The balances were written together at the end of each accounting period to give a general picture of the firm's financial state. The four major items in these accounts were previous balance, total receipts and total payments for the current period, and current balance, very much like a statement of income and expenditure.

(b) Structure of the profession. It was only during the 1950s when the securities market was established and private firms' stocks traded that accountants' functions became familiar to businessmen and the general public. Accounts of all firms whose shares were traded had to be checked by qualified accountants before the government authority could pass them. World Bank accounting and securities experts were then invited to Taiwan to help improve the securities market and channel savings from the public into productive investment fields. This strengthened the Taiwan Professional Accountants' Association's request that the government should authorize accountants to sign tax statements and bank loans.

Even now Taiwan has not many qualified accountants. They are heavily concentrated in Taipei city. Only about one quarter of them are originally from Taiwan, the rest from mainland China.
Because the accountant's position is somewhat anomalous and many are still allowed to perform his work, those employed as accountants greatly outnumber those professionally trained as such: the personnel departments of Taiwan provincial government and the Taipei City government report 5,431 'accountants' working in public service or teaching in 1970. Very few of those had passed a professional examination for accountants.

Accountants and auditors are trained in twenty-two of the ninety-two institutes of higher education. According to the Ministry of Education figures, the number of graduates with majors in Accounting in 1970 (from all universities and colleges) was 777; the number of new graduates each year has grown at an average annual rate of about 6 per cent since 1950, which implies an output something in the neighbourhood of 9,000 accountants over the past twenty years.

In addition to the professional association, there are two institutes for accountants, the China Institute of Accountants and the Taipei Institute of Accountants. The Taipei Institute comprises some seventy branches with a total membership of about 600. The CIA is much smaller and comprises mainly the older academic accountants. In Taipei City alone, 235 registered accountants belong to the TIA. These two associations are mutually exclusive: members of one cannot belong to the other.

Very few accountants emigrate, though a few go abroad for advanced study. No figures or even estimates are available: the local professional examination is very difficult, and once a person has passed it, he can open a private office, and his income will be comparable to that of a physician.

As for other characteristics of accountants, we have data only from the Taipei City Association. Of their 235 members, only 10 per cent are under thirty-five years of age, 36 per cent between thirty-five and fifty-five, and 52 per cent over fifty-five. Only six of the 235 were female, and only twenty-three have passed the Ministry's high level examinations. About 8 per cent of the total have had foreign training, but there are no foreign members of either Association: some overseas Chinese have qualified as accountants in Taiwan, but these have retained Chinese nationality.
and there are no arrangements with foreign countries for mutual recognition of qualifications.

(c) Professional activities. Most accounting firms have three types of members: the accountant himself, the assistant accountants who do all the business and professional work, and brokers or salesmen whose job is to find customers. Although the government does not recognize foreign accountants' firms, they work in Taiwan through local accountants' agencies, which they require to meet international standards, employing graduate accountants instead of the assistants trained in vocational schools that most agencies dealing with local firms employ. These few agencies handle most of the business of foreign firms. Usually it takes one to two years for a newly established firm to make a profit. Most private accountants at present have more business than they can handle. Most firms employ about ten assistants; the largest has eighty.

In general an accountant is not supposed to act as a cashier or purchasing agent, nor should a government accountant open a private office as an accountant or lawyer, nor do additional part-time work in the public or private sector.

The main types of work undertaken by accountants are preparation of tax statements, confirmation of capital issues and financial statements, and registration of firms. Only the first three are by law limited to qualified accountants. All the other types of accounting business can also be done by others such as businessmen, lawyers or unqualified accountants.

Tax consultancy has not yet become an important task for accountants: because of pressure from the professional associations, the government now allows accountants to prepare the year-end statement that private firms present to the appropriate government authority. Almost all the 235 Taipei firms are now qualified to prepare income tax statements for private firms. Very few firms, however, employ accountants to do this: they prefer the tax officials themselves to do it. In 1970 only about 170 out of some 25,000 firms asked accountants to do this for them.

(d) Government accounting. The government accounting system in Taiwan is called the United Accounting System. The highest government authority is the Directorate-General of Budgets, Accounts and Statistics of the Executive Yuan.
Four rather independent systems of financial administration, accounting, auditing, and cashing, with separate personnel, are involved in every item of receipts and expenses, to improve efficiency and check waste, corruption and other illegal behaviour. A system of centralized control of payments was recently established.

To check corruption and secure independence of action, public accountants of all levels can be appointed, discharged, promoted, etc. only by superior accountants: the unit director can give directions and orders and report his opinion about his unit's accountants to a superior accountant in a higher unit, but has no power himself to promote, appoint or discharge them.

(e) Accounting legislation and regulations. The Company Law of 1920 requires the Board of Directors of a limited company to prepare, thirty days before the shareholders' annual meeting at the end of the year, a business statement, balance sheet, list of properties, and statement of profit and loss with suggestions on its distribution. These statements must comply with the regulations issued by the Ministry of Economic Affairs. If statements are found to be false, the responsible person will be fined up to NT$12,000. All statements must be checked and issued to the shareholders by a qualified accountant.

Rules on the responsibility of auditors and accountants were published in January 1972 by the Accountants' Association for its members. These are summarized in the next two paragraphs.

Auditors should do their auditing honestly, independently, and without interference. They should report whether the statements they examined conform to the principles of accounting, can be considered thoroughly consistent, and show the real financial situation of the unit.

An accountant should not compete with other accountants by unfair means. He should not violate laws and regulations or contracts with his customers. He should not reveal the secrets of his customers to others. His statement should avoid any predictions on the future development of the firm. He should not advertise his professional techniques or business in newspapers, magazines or by other means, nor promote his business by giving commissions. His charge must be consistent with the criteria of the Accountants' Association. He should
not be employed as an employee of the firm for which he is asked to make the accounting. If he establishes a branch office, he must be in charge of that office and should not assign his assistant or other people to take the responsibility. He should not employ directly or indirectly assistants or other accountants without the latter's consent.

(f) Earnings. An accountant with an office in Taipei usually can make NT$7,000 to NT$14,000 per month. If he is employed by another accountant, he will still make at least NT$5,000 per month. An assistant accountant can make from NT$2,000 to NT$4,000 depending on his experience and professional knowledge: the National Taiwan University's Accounting Department restricts its graduates to posts starting at NT$3,000 per month as a minimum.

A public sector accountant usually gets from NT$1,500 to NT$5,000, depending on rank, position and seniority, together with allowances and income in kind.

In a small enterprise an accountant may well do other jobs also. Accountants have many opportunities to make extra money illegally, especially when they combine accounting with other jobs, such as purchasing, for the same firm. This is made especially easy since most payments are still made in cash, not by cheque. Very stringent conditions must be met — including, usually, a large deposit — before a person can open a cheque account.

(g) Influence of the professional institutes. The two Institutes are quite distinct in character and membership. The CIA is considered more academic and conservative; in general it also represents the older group.

The TIA is considered more as a practical businessmen's group. Members are mainly current accounting workers (only some of them qualified accountants) in business firms, mainly from insurance companies, trust companies, private commercial banks, and large firms.

Taipei Institute was established on 8 September 1968. It has closer ties with government taxation authorities than the CIA though it receives no government subsidy. Some of its current activities are given below.

(i) It conducts three-month accounting classes (of thirty or forty pupils per class) and also special classes,
lasting from a few days to a week, usually taught by officers of the relevant tax institutions, to explain some new tax regulation or practice introduced by the tax authorities.

(ii) It holds training classes for accounting major graduates from vocational business schools. Mastering actual business practices, not taught in their school classes, usually requires at least three months.

(iii) It has published since 1972 an academic magazine called *Accountant Monthly* with a circulation of about two thousand. (In addition there are twenty-two other accounting magazines published in Taiwan by banks, government and other bodies.)

The Institute plans to expand its influence by recruiting student-members, who will pay one-third of the regular members' annual fee of NT$100.

Accountancy as a profession is still a rather new idea to most people of Taiwan. Even now many other people also do what, in Western countries, only an accountant is permitted to. In many fields the division between a lawyer's business and an accountant's is not clear: for example both are permitted to register patent rights and investments for their customers. The accountant's field of business is now becoming broader. Many new items of business have been added owing to the efforts of their associations and to the development of industry and commerce. There is some pressure toward professionalism to restrict amateur accounting workers and remedy imperfection or vagueness in laws and regulations; the government, however, has been reluctant to give greater authority to the accountants.

(h) Some possible adjustments. The most crucial thing is to revise the current laws. False accounts exist everywhere. However, firms cannot correct them, even if they wished to, without heavy fines for past mistakes. The accountants suggest allowing old false accounts to be corrected without a fine, so that new accounts could record a firm's true situation, and the tax-collectors could not exact bribes. However, the tax authorities have so far ignored this suggestion. The accountants also suggest that the tax rates should be reduced - these rates were set very high with a prospect that only one-third could be collected. Thus, when the businessmen report their true statements, their tax burden would not be increased. This suggestion too has been ignored. So long as these laws and regulations are
not revised, it is hard for accountants not to present false accounts for their customers if they want to survive in the severe competition.

(i) Foreign orientation and influence. English is used less frequently in accountancy than in medicine and civil engineering. Both Chinese and English textbooks are used: the curriculum duplicates American practice. Accountants from America, Japan and Hong Kong often visit Taiwan, but local accountants rarely visit other countries - at most, only Japan, South Korea and Hong Kong.

Very few return with overseas training in accountancy, and these mainly from the United States and the Philippines; they are usually employed by those few accountants' offices whose major business is with the foreign-investment companies. Such firms - much larger than those in domestic business - present all accounts and statements in English, and follow American forms, rules, codes and related laws and regulations. Their practices have had some demonstration effect. Returnee accountants have been active in pushing the government to revise codes and laws, to adopt more American practices, and to add new items of business for accountants. Visiting foreign accountants have also criticized the present accounting system and made suggestions, some of which the government has adopted, such as that a public company should pay an accountant to audit its accounts and statements, and that income tax could be imposed according to a statement authorized by an accountant. Thus, this profession is expected to become more Americanized in the future.

The civil engineering profession

(a) Organization. The organization of the engineering profession differs from that of the other professions in our study. Although architects have their own professional association and examinations, civil (and hydraulic) engineers do not; the Ministry of Civil Service does not regard civil engineers as 'professionals' or conduct any professional examination for them, though they take a government technical qualification. But according to the Architects' Regulation of 1957, civil engineering graduates, as well as architecture graduates, could take the Ministry's professional examination for architects. In 1971 the regulation was changed and now graduates with a BSc degree in civil engineering must also
have five years' relevant experience before they take the architects' professional examination.

Instead of an association of professionals as in the medical or accounting fields, in civil engineering there are associations of construction firms, discussed in more detail below.

Many new engineering skills have been introduced into Taiwan in the past twenty years, often through major reservoir construction or irrigation projects involving foreign firms. Other such projects were in transportation infrastructure, airfields, harbours, roads and bridges such as the East-West Highway, the Kung Kwang Airfield, the Taipei sub-highway, the expansion of Kaohsiung and Keelung harbours, and the construction of international hotels, public buildings, and public and private housing. Construction equipment was substituted for labour and simple equipment, and new construction materials for traditional ones.

(b) Professionals and sub-professionals. Training of civil engineers and architects is undertaken in forty of Taiwan's universities and colleges. They comprise ten universities (of which three are private), twenty-three Junior Colleges of Technology and three Junior Colleges of Technical Skills; the remainder are other private institutions. Of all these, National Taiwan University School of Engineering is the most important, and its curriculum is used as a model for other colleges. The course lasts four years, with divisions for architecture, civil engineering and hydraulic engineering. There are two kinds of classes, Class A for native students and Class B for overseas Chinese with generally lower academic and language levels. Since the mid-1950s College of Engineering enrolments have been about one-quarter of the NTU total, and for the past few years about 100 engineering students a year have graduated, or a total of about 1,700 since 1947. Probably some 80 per cent of these graduates go abroad, mainly to the United States. The Department Head at the National Taiwan University considers this kind of brain drain not too bad, since it helps the remaining graduates find jobs more easily.

The curriculum and teaching are highly oriented toward the United States and English language textbooks are more frequently used than Chinese ones. A thesis is required for the BSc diploma and good theses and other papers are published by the Department in both Chinese and English.
A journal is published which contains papers from teachers and from senior students.

Other professional journals are published by the Chinese Institute of Engineers and by other universities and colleges, but of the forty-seven different magazines that could be found in the field of civil engineering in 1970, less than 10 per cent would rank as professional journals. Besides these journals, the Chinese Institute of Engineers publishes annually the best essays offered in the nine specializations of engineering. In the early 1960s, fifteen to twenty such essays were often listed in civil engineering each year but recently there have been no more than five each year.

Since the civil engineers do not have any professional association in their own name, we have no very clear idea of how many civil engineers there are in Taiwan. There are at least 600, because, by law, each of the Class A construction firms (discussed below) must employ at least one civil engineer and in 1970 there were just over 600 such firms.

Sub-professionals in engineering are of two types: medium level products of the industrial occupational schools, and lower level construction workers, skilled and unskilled, usually primary-school trained. The two main types of skilled workers in the construction industry are carpenters and masons. In recent years, however, so much construction equipment has simplified the work of both crafts that the division between them has tended to diminish: flexibility among skills or specializations has benefited both construction firms and workers, since a worker's labour can be more fully utilized, and a man-day will mean more in terms of efficiency. As the gap in skill between the skilled and non-skilled workers has been narrowed, so has that between their wage rates. This tendency is expected to continue since the shortage of labour is more severe among unskilled than among skilled construction workers, especially in the area of Taipei, where general wage rates are relatively high.

Salaries of civil engineers range from NT$7,000 to NT$15,000 a month, about eight times the wage of an unskilled construction worker, four times that of a skilled carpenter or mason, and about twice that of an assistant engineer. Public sector civil engineering workers earn less than their private counterparts, but receive more income in kind, such as housing, food, and medical and other insurance. Their
incomes, even including these, are still smaller than private sector ones. Yet public sector engineers usually have some (illegal) part-time jobs outside, and also many opportunities for income from corruption.

According to statistics of an experienced builder, when a Taipei resident asks permission to build a house, he has to go through a minimum of twenty-five hurdles in the bureaucracy of the city government, which will take him at least thirty days. However, those who receive their building permit within thirty days are those persons who know the rules of the game and buy the facility. Those who faithfully follow the prescribed processes inevitably run up against red tape sixty or ninety days long. The unit responsible for the granting of building permits is the most bureaucratic in the city government. And it is an open secret what short cuts building contractors turn to ... (China Post, 22 January 1973).

When no bribe is offered, an official can point out something that needs correction every time the applicant comes, and can safely attribute the delay to the applicant's mistakes in filling in forms. The forms become ever more complicated for this reason.

(c) Growth of the engineering industry. The need for people with engineering skills has increased as a result of heavy investment in construction. However, much construction has been undertaken by those without engineering qualifications. Many cheap, temporary buildings were erected during the rapid immigration of mainland Chinese after 1948. These proved uneconomic, with high costs of maintenance; and, as investment both in housing and in other construction expanded, higher standards were demanded though without any formal change in professional structure.

New skills were learnt, partly to meet demands from mainland investors and from aid agencies for the use of construction materials not previously common in Taiwan. In particular reinforced concrete construction was replacing the use of brick, rising from 4 per cent to 41 per cent of all buildings between 1956 and 1970.

Similar changes were needed for new hydraulic projects. Before 1945 Taiwan had only eight reservoirs, only one using
cement, the rest earth. Sixteen more have been built since then, seven from concrete, mostly to meet irrigation and power needs.

Demand for new skills did not, however, lead to any change in the status of civil engineering as a profession. Control continued to be exercised only through the requirement that certain types of construction firm should employ a qualified civil engineer.

(d) Classes and associations. Construction firms are divided into four classes in Taiwan, A, B, C and D, according to the registered capital of the firm, the highest being the A firms. Table 5.7 gives the numbers of these firms in 1962 and in 1972.

Two kinds of tax are imposed on these firms, a business tax assessed according to registered capital, independent of sales, and a sales tax. It is not easy for the tax authorities to check whether the actual capital is consistent with the registered capital (in many cases, it is probably less). Therefore the government tries to reduce tax evasion by regulating the maximum construction contracts for each class of firm. Class A firms may take public construction contracts without any ceiling; Class B up to NT$1.2 million, Class C up to NT$600,000 and Class D up to NT$90,000 only. Only members of the Taiwan Constructors' Association may tender for public works and buildings.

This system is supported by the unrestricted Class A firms and in general by the Class B firms. The Class C firms do not like it but still endorse it under strong pressure both from the government and from other firms. The Class D firms are totally opposed and have asked for the elimination of the system. In 1968 many seceded and formed their own association, the Civil Contractors' Association, which by 1971 had eighty-six members in the Taipei branch. Most D class firms do not need to belong to the Taiwan Constructors' Association, as their work, apart from sub-contracting, is limited by the financial ceiling to repair and maintenance. This explains their decline in numbers in Table 5.7; there are not actually so few small firms, but they do not belong to the Taiwan Constructors' Association. A Class D firm can be promoted to Class C when its yearly turnover reaches NT$0.8 million. Over the past few years only one or two firms have been promoted. (The level of business turnover at which promotion is to be made is subject
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<td>1972</td>
<td>176</td>
<td>63</td>
<td>70</td>
<td>393</td>
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<td>Other cities*</td>
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<td>1962</td>
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<td>1972</td>
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<td>64</td>
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<td>Other areas</td>
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<td>1962</td>
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<td>1972</td>
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<tr>
<td>1972</td>
<td>622</td>
<td>314</td>
<td>3,078</td>
<td>852</td>
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</table>

* Keelung, Taichung, Tainan, Kaohsiung.

** Data for 3 cities only.

*** Data for 8 hsien only.

Source: Taiwan Constructors' Association.
to adjustment by the public authority.)

The government's main aim in these restrictions was increased business tax revenues, although it claimed to be protecting the consumers of construction works. But this procedure has caused many difficulties and hampered sound development of the construction industry. For example, Class A firms can exploit Class C and D firms by using their powerful positions to get very large contracts and then subcontracting out the actual work to C and D firms. Thus even the biggest construction may not be well done. While Class A firms are required to employ at least one qualified civil engineer and Class B firms at least one assistant engineer to ensure competent work, C and D firms have no such requirements.

There is also another kind of firm, sometimes called an 'empty' firm. These firms are registered at local government offices, but are set up only to bid for construction tenders. Bidders collude to raise the bid price above some level, agreeing that the winner of the bid will distribute 10 per cent of his profit among the others. When one of these 'empty' firms wins a bid, by corruption, threats or other illegal tactics, it will transfer the contract to other construction firms at a price of 10 to 15 per cent of the total value of construction.

In addition to private construction firms, there are two giant engineering agencies, the Chung Hwa Engineering Agency (a public limited company) and the Veterans' Engineering Agency (a government subsidiary). The former is a member of the Constructors' Association while the latter is not. These two giants possess the most up to date equipment and employ the best engineers. They have now even turned to overseas operations with many construction contracts throughout Southeast Asia.

(e) Procedures. When a construction firm has been awarded a contract, it will contract a construction team leader. These leaders usually work in a small office space often shared with others; they keep lists of names and addresses, work skills and work preferences of their labourers, skilled and unskilled. The team leader will sign the contract on behalf of his workers, and take responsibility
for solving their difficulties. He may provide them with meals and a place to sleep on or near the construction site and may even finance them in other ways, later deducting these expenses from their wages. Often the assistant engineer also lives on the site while supervizing the construction. The architect who designed the construction is also supposed to appoint an assistant to check that the design is being followed precisely.

(f) Relations between the profession, the industry and government. The government agencies with authority over architects, civil engineers, and construction firms are the Ministry of Interior of the Central Government, the Department of Reconstruction of the Provincial Government and the Department of Reconstruction or of Public Works in the city or hsien governments.

According to Civil Service and Professional regulations, a civil engineer may not open his own practice (unless he takes the architects examination as described above).

Foreign civil engineers and construction firms have been invited to participate in the design and construction of some public works in Taiwan because they had superior skills and know-how. But this seldom occurs. Major works often receive international financial help (mostly from UN or American sources) on condition that the bidding should be international. Public works authorities still lack confidence in local construction works and engineers, and capital restrictions and other qualifications imposed make it difficult for any but the largest local firms (mostly the public ones) to compete in such cases.

In the private sector, foreign architects and civil engineers may not do business in Taiwan; they can, however, sometimes do so in the name of a Chinese firm which co-operates.

Agricultural extension

(a) Background. The agricultural development of Taiwan is a quite spectacular success story. While the great increase in productivity in the early part of this century was largely due to increases in the area under cultivation, the increases over the past several decades have been due mostly to institutional factors, among which agricultural
extension has been important. The success of the extension program has been closely related to and even dependent upon the prior creation of irrigation systems and crop research, and stimulated by concurrent reforms in land tenure.

During the Japanese period, Taiwan was developed to provide agricultural exports to Japan: the Japanese established a number of practices and organizations, first to provide a link between government and landholders and to establish secure conditions for agriculture, then to set up the necessary infrastructure, such as roads, railways, export harbours, land mapping, and around the turn of the century a number of research stations, some for particular areas, and some for particular crops. Between 1900 and 1930, there was a great increase in irrigation systems and in opening of new areas for cultivation (Myers, in Shand, 1969; Hsieh and Ruttan, 1967). By the mid 1930s, almost all rice land was fully irrigated. During the same period, farmers' associations were established to channel research findings into the villages. This was a period too of active research in rice seed varieties, resulting in the dominance of the *ponlai* variety. The more than one hundred varieties were reduced to less than twenty, to standardize quality, simplify the work of extension and experiment and increase yields.

Although Taiwan did not produce any significant amount of fertilizer until after the Japanese occupation but imported supplies from Japan, the availability of supplies on favourable terms was an important feature of rice cultivation. Research on sugar cane varieties was also undertaken during the 1930s.

At the end of World War II when Taiwan was returned to China, the withdrawal of Japanese research and extension workers caused great disruption in agriculture, as in other sectors, and many farmers returned to subsistence farming. Although food production did not decrease, it was diversified in the immediate post-war years away from export markets to home consumption.

In 1948, the Joint Commission on Rural Reconstruction was set up with United States aid funds (Joint Commission on Rural Reconstruction, 1970). Its work at first was directed mainly to water control and crop production projects, but it also provided grants and loans, mostly to village-level associations such as the Farmers' Associations and Irrigation Associations for plant industry, forestry, irrigation,
fisheries, animal industries, agricultural credit, rural economics, farmers' services and rural health. From the first the aim was to avoid direct extension work by Americans but to use, and change, the institutions left by the Japanese.

In the early 1950s the government carried out a land reform which resulted in transfers of ownership from landlords to tenants. From 1959 to 1969 tenancy decreased from 39 per cent to 10 per cent, while full owner-operators increased from 36 per cent to 79 per cent.

The Farmers' Associations were revived and reunified with the co-operatives. (Under the Japanese occupation, the Farmers' Associations had included extension work and seed and fertilizer distribution; they also acted as mediators between landlords and tenants; credit co-operatives had been established at about the same time to provide purchasing, marketing and warehousing services. The functions of these two organizations overlapped so much that they were combined in 1943. The Chinese government again divided them in 1946 but reunified them in 1949.) The Associations, which operate at township and at hsien level, have evolved under JCRR leadership from highly centralized, government-directed origins into increasingly independent and decentralized organizations. From 1952 on, efforts were made to influence the farm as a whole through these Associations: training the farmers in new attitudes, new knowledge and new skills through use of local leaders and building up local extension groups and clubs. The emphasis shifted from inducing farmers to adopt approved new practices to building organizations that would stimulate new demands and objectives.

(b) Extension agencies. Apart from the Farmers' Associations and the JCRR, there are various other organizations which carry out extension and/or research work. In the government, at township level the Department of Reconstruction is responsible for extension; at the hsien or city government level, the Bureau of Reconstruction; and at the provincial government level, the Department of Agriculture and Forestry (PDAF) (see Fig. 1); no extension work is carried out by the central government.

Some extension work is also carried on through the Agricultural Research Institute, the Food Bureau, the Supply Bureau, colleges of agriculture and public companies such as the Taiwan Sugar Company, Taiwan Pineapple Company; and by
Figure 5.1 Extension organisational chart
the Tobacco and Wine Monopoly Bureau.

The Farmers' Associations, of which there are now some 360 at township and hsien level (and one province-wide association), cover almost all farmers in Taiwan. They help to provide loans, from funds supplied by the JCRR, to about 90 per cent of farm families; their activities include credit and savings, extension, sale and marketing of goods, rural health, transport, and sale of farm tools, food and clothing; they provide data to government, and facilities for milling and warehousing to farmers; and they collect and process rice, and distribute fertilizer to their members.

The Joint Commission on Rural Reconstruction again operates largely as a grant and loan giving agency, but its other major activities include training and extension. Since 1963 it has been running down its organization while the Provincial Department of Agriculture and Forestry has been building up an organization to take its place. The extension budget of the JCRR has fallen from NT$10 million to NT$2 million (at higher prices) while the Department's expenditure on extension has expanded from NT$4 million to NT$24 million, and it is using this to subsidize township extension sections, according to their financial need and the number of their extension advisors. From 1957 to 1962 the JCRR had its own Division of Agricultural Extension, which administered its program. Since 1963 it has operated through a Farmers' Service Division, with only a few special demonstration projects in particular topics. It had in 1973 some 120 persons employed in its technical divisions and another ninety in administration. Since 1955, it has been instrumental in helping to train nearly 3,000 foreign (mostly Asian) agricultural technicians in Taiwan, and in sending abroad some 1,000 Chinese.

The number of farm advisors or extension workers varies from one to four per Farmers' Association depending on the number of farm families served. On average there is one farm advisor for each 1,500 families; in addition, there may be one or two 4-H club advisors and a woman home economics advisor for each township. About 85 per cent of the township extension workers have qualified from the agricultural vocational schools, the remainder from the academic high schools. At the hsien level, there may be one or two farm, home or 4-H supervisors for each phase of the programs of work of township extension advisors; most of these will have vocational school training with wide experience; only a few
will be college graduates. At the provincial level, the provincial FA and the Provincial Department of Agriculture and Forestry have each about thirty extension workers; most of these are college graduates and many have had overseas training. The JCR also has four extension specialists to assist the agencies receiving grants or loans.

An extension worker at township level visits on average ten to twenty farmers a month and is visited by another twenty in his office. He is more successful in extending cultivation of new varieties or acceptance of new strains of livestock when prices for them are high - farmers will then even come voluntarily to ask him for information and advice: the recent extension of mushrooms and pineapple cultivation are good examples. When prices are low, however, and farmers suffering losses, efforts at extension are mostly fruitless: farmers consider marketing information and support prices, as well as crop and livestock insurance programs, more important than technical information and skills.

Many farmers probably never see an extension worker. Some farmers visited complained that the FA extension workers visit only the large farmers and ignore the small ones; the extension workers point out that larger farmers are more interested in extension services and because they have more resources, are more willing to experiment. Farmers visited by extension workers from their local farmers' association appreciated the services, and merely complained that visits were too few.

In addition to their function of distributing fertilizer, the local farmers' association extension workers often co-operate with commercial firms providing information on, for example, power-tillers.

(c) Earnings. In 1968, a point system for salaries was established aimed at encouraging individual farmers' associations to improve their financial status. Under the old system, persons holding the same position would get the same salary in all farmers' associations; under the new system, they get the same number of salary points. The value of a salary point varies from association to association and from year to year. The Provincial Farmers' Association together with the Provincial Department of Agriculture and Forestry rank the township associations, according to their previous year's financial performance, into four classes, each of
which has four subclasses (see Table 5.8). Thus, for an extension worker ranked at, say II 3, each salary point would represent NT$34 per month; and a salary of 70 points would amount to NT$2,380. An assistant technician will receive about 70 salary points, a technician about 80, and a senior technician about 90. This is the extension worker's normal limit; for higher salary points, one must change the position and kind of work. Salary points can also be moved up according to position, seniority and performance. Each year, the director of each association grades his employees: an 'A' brings two more salary points next year, a 'B' grading one, and a 'C' no increase. The government sometimes posts extension workers to the associations; these employees, who are not members of the association, usually get lower pay than regular association extension workers.

Table 5.8

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<td>IV</td>
<td>28</td>
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Source: From interviews with farmers' association employees.

By regulation, at least half the budget of each farmers' association should be used for extension. In fact, this regulation is seldom maintained, as the associations' credit and marketing have become more important functions than extension. The main reason is the salary point system: the salary point's value depends on an association's previous year's profit, so profits increase costs in the coming year according to the number of extension workers employed. This effect is reduced by reducing the number of extension workers. Thus, everyone, including extension workers who remain employed, benefit from increasing profits through
marketing and credit work, rather than extension. This keeps costs down, raises profits and increases the value of existing workers' salary points. Another reason is the uncertain future of extension workers in the farmers' associations. The turnover rate is nearly 30 per cent per year. Directors are elected each three years, and each director has considerable discretion in employment of staff. Thus a new director will often choose members of some political faction for his staff. Another uncertainty arises over the contributions paid into a mutual-help fund. In the Shulin Farmers' Association, for example, each formal employee must pay NT$400 per month, regardless of rank or salary, into this fund; the farmers' association contributes NT$100 per employee. If an employee is discharged, he can get back his own contribution if he has worked less than three years; after three years he can get NT$30,000. This system has had two undesirable results: it is more profitable for the farmers' association to discharge a member before his three years are up and so avoid paying the FA contribution; or, if the turnover is still high and the FA has to pay these large severance payments, the mutual-help funds often run into deficits, affecting the FA's financial state in general and consequently its range of activities.

(d) Training and entry into the profession. Probably the agricultural vocational school is the most important training source for agricultural extension workers. These schools accounted for about 13 per cent of all enrolments in vocational streams, and about 2 per cent of total secondary enrolments in 1970. (There are also some 8,000 girls in domestic science schools and 5,000 students in marine products or fisheries schools, but very few of these go into extension work of the kind described here.) Almost all farmers' association extension workers are products of these schools. From the beginning, Taiwan's training for agricultural extension has emphasized physically measurable results: increases in crop area or yield by use of new techniques and new varieties.

At post secondary level two colleges train agricultural extension workers. Although between 1965 and 1968 enrolments in faculties of agriculture (not all of which have training for extension) rose from 5,000 to 10,000, they dropped again in 1970 to about 5,000, or about 2 per cent of total enrolments in higher education. This movement out of agricultural education parallels the younger people's movement from farms to urban areas, a movement fostered by the availability of
off-farm jobs and increased urban industrial employment.

All extension workers also receive pre-service induction training, usually for about ten days (some sixty class hours) covering twenty-two subjects, most of them dealing with methods of extension work.

The relationship between extension and research workers is generally quite close, and extension workers are often drawn from agricultural research institutions.

Extension workers at present have no formal professional examinations, although those entering government employment have a civil service examination. When a Farmers' Association wants an extension worker, it applies to the Provincial Department of Agriculture and Forestry, and an examination is given, open only to those with agricultural and domestic science vocational school certificates. Those passing the examination may then be posted as extension agents to the Farmers' Association.

(e) Special training courses. There are several specialized training courses. Provincial agencies have commissioned the Department of Agricultural Extension of the National Taiwan University's College of Agriculture to offer two-week training classes in extension organization and methods every year for farm, home and 4-H extension supervisors and advisors. In addition, these agencies offer several one-week courses to farm and 4-H extension workers on special crops, farm machinery, hog raising, farm and home development, joint crop and livestock farm operation and beef cattle raising. District agricultural improvement stations conduct a one- or two-day subject-matter training for extension workers every year to supplement the provincial training by passing on latest research or experimental findings to local extension workers; and since 1969, have sent ten to twelve extension workers to study agricultural extension and home economics for one academic year in colleges, paying their tuition while the province provides funds for the salaries for replacements. Trainees attend classes with other college students and must earn at least thirty credits during the year, at least six of them educational.

Provincial agencies have conducted programs to give vocational training to young prospective farmers and to improve local extension leadership: before 1969, local extension leaders were trained by the township or hsien
associations only. Since 1969, the provincial farmers' association has offered a four-day training program of five sessions. PDAF and JCRR in 1972 initiated a six-month joint training program to provide out-of-school vocational training in advanced farm management to prospective young farmers; it is conducted by the Taichung, Tainan and Kaohsiung District Agricultural Improvement Stations (DAIS) for eighteen trainees. These carry out actual field practices and daily record keeping, and DAIS specialists give ten hours of class lectures for twelve weeks.

Every effort is made to keep agricultural extension workers up to date by passing on to them the results of the latest research. Recent studies by Chen Chin-wen (Chen Chin-wen, New Series no. 60, 1967, and vol. 8, no. 1, 1972) indicate that more than half the extension workers attend one or two courses a year, and that more than half the farmers' associations send their staff workers to between seven and twelve different kinds of training in a year (presumably different workers to different courses). The total number of courses had risen, in Taiwan, by over 50 per cent between 1960-62 and 1970, and was then equal to just under one for every two farmers' associations. Most of these courses are short, lasting from one day to four. Moreover, extension workers, though feeling some strain when courses are unduly concentrated in the year, seemed to want more rather than less training.

An encouraging feature of this training is that, though most of the workers had no more than vocational secondary education in preparation for their work, much of it was directly related to recent agricultural research.

(f) Summary. The farmers' associations are the most important and the oldest of the extension agencies in Taiwan. Their contribution to Taiwan's agricultural development has depended on a widespread and well-established irrigation system and other physical infrastructure, and on such institutional infrastructure as the equally widespread credit system. The Japanese, working through the landlords, set the pattern of demonstration, rather than force or pressure, a method continued to the present day. The first farmer in a village to accept a new innovation did so on a free grant; subsequent acceptors received loans at reduced rates, and as acceptance became common, general credit was made available. Diversification of crops was fostered and processing and marketing services kept pace with production.
Problems still exist. An attempt to ensure democratic local leadership of the associations caused some of them to become the focus of local rival groups; the fate of extension workers in such associations became uncertain, often to the extent that the entire staff might be changed every three years, with a consequent loss of effectiveness in extension work.

With the rapid rise in Taiwan's productivity there is strong upward pressure on farm wages, and even so, most agricultural labourers under forty seem to be leaving the industry: there has been an absolute, not merely a proportionate, decrease in the labour force in agriculture, especially near the cities where employment opportunities are ample in industry, construction and other services. Yet farms remain small, generally around one hectare, which poses problems for the extension worker whose first and best clients are usually the larger farmers.

In the schools, too, there is a movement away from agriculture, with enrolments decreasing and conversion of agricultural vocational schools to industrial/technical schools. The 4-H clubs recruit members only with difficulty, as young people see little future in farming. Yet only the farms that can match the general growth in productivity are likely to survive.

The change can be seen in the declining share of agriculture in Taiwan's exports: in 1952 sugar and rice made up 78 per cent of all exports; this share had fallen to 45 per cent in 1960 and only 7 per cent in 1968, as industrial exports rose.

Perhaps agriculture on the present pattern is reaching a natural limit to its growth in productivity, with further changes requiring a transition to mechanized agriculture, and production for industrial processing.

Still, over the past two decades, the real net domestic agricultural product per capita of the agricultural population has increased by 48 per cent and that of agricultural workers by 78 per cent. If the role of extension cannot claim full responsibility for this substantial rise, it can certainly claim an important role in it.
General comments on professional impact on development

Although the number of professionals has increased much faster than population in Taiwan, professionalism has developed rather slowly, as a result of the system of control over standards after a professional is trained. Once a professional has passed his examination, he can practise anywhere in Taiwan, his licence is for life and no renewal of the licence or further examinations every few years (as in the United States) are required. This is one reason why professionals in Taiwan seldom read new books and journals once they pass their professional examinations, and why academic journals and other academic activities have remained very weak. Professional associations are little concerned with academic activities; even such bodies as the Chinese Institute of Engineers conduct more non-academic than academic activities.

Moreover, most government authorities and officers tend to despise academic activities and scholars. Officers often dismiss recommendations by scholars and professionals as too academic and impractical, partly because their own academic training is insufficient. Often the head of a government department is a non-professional or someone trained in an unrelated field. A professional examination system similar to that of the United States might do more to encourage academic and professional activities and to maintain and promote professional standards. It might also promote the subscriptions to professional journals and thus generate more of them.

The higher growth rate of the professional than of the total population, and the lengthening of the blue-collar worker's schooling period have raised general incomes and reduced the gap between them and professional earnings. The professional's relative social status is also reduced. Since professionals generally are in surplus supply while there is excess demand for blue-collar workers, the economic as well as the social status gap will probably be further narrowed.

Specialization can increase efficiency only to some extent within any given state of arts and given extent of market. Excessive and premature specialization may reduce flexibility and thus reduce value productivity of labour. Cases of excessive specialization do occur among construction workers, among dental assistants and tooth-modelling
technicians, and a movement towards more generalization has developed in these professions. In other lines, however, deeper specializations have developed. Independent fields and departments and occupational schools in pharmacy, medical techniques and architecture have been established, new courses and training have been introduced, new construction materials and equipment and new methods of construction, new medical treatment and medicines as well as new items of business to accountants have all been introduced through foreign professionals, or local professionals long resident abroad, or local salesmen of new foreign products. In short, specialization has mainly been caused externally. The increasing dependence of Taiwan's economy on foreign trade and the increasing number of professionals going abroad and returning help to introduce foreign professional practices and systems. However, cultural and ideological differences often pose strong resistance to the introduction of markedly foreign systems. In order to adjust foreign systems and practices to fit local conditions, some distortions occur and a true professional spirit may be distorted or disappear. This situation is particularly evident in professional laws and regulations, in bureaucratic procedures and in teaching. Old and weakly based laws and regulations have created or emphasized such problems as underground professionals, red tape and corruption.

Bureaucratic procedures have become lengthy and time-consuming, in an attempt to control corruption; applications become extremely expensive in time, energy and money. Lengthy, time-consuming and complicated procedures give more opportunities for corruption, probably one reason why officers prefer to complicate simple procedures.

Corruption is due also to low official salaries compared to those in the private sector. For example, a full-time professor in a public school earns only NT$5,000 per month; if he works in a private school, he can earn NT$10,000 or more. Therefore, multiple jobs are more common among public than private sector professionals, even though public professionals cannot legally have part-time private-sector work or another post in the public sector. Schools prefer part-time teachers partly because they are cheaper and partly because employing them is a good way to build relationships with the authorities especially when the authorities are themselves the teachers.
Lack of communication, co-ordination and understanding among the training, administrative, regulatory and legal bodies of professions also create many problems.

Foreign-oriented training and education have increasingly made the local professional labour market one part of those of the United States and Canada, and less responsive to changes in the local situation. A dilemma has thus been created that, though according to the local standard, the current level of income for professionals has been very high in that many local people, especially the poor, cannot afford to buy their services, a continuous mass 'brain drain' has been occurring.

Taiwan's professions have a strong and increasing international orientation. They are changing toward the American model, with Japanese influence also increasing and traditional elements and practices in the professions losing their hold.
Chapter 6

Philippines: patterns from the U.S.A.

Ledivina Cariño

The Philippines as a setting for the professions

(a) Growth of the professions. The Philippines ranks high among nations in its proportion of professionals, almost as high as the United States (Sundrum, 1971, cited in Raymundo, 1973). Filipino zeal for education does not seem to be of recent origin: Montero y Vidal, a Spanish chronicler reported that in 1886, even in the remote villages the majority of the Indians know how to read and even to write, having learned without teachers, and solely through the strength of their inclination and extraordinary patience (Blair and Robertson, 1909, vol. 45, p.296).

The Census of 1903 disputed the attributed literacy rate,\textsuperscript{1} but other commentators have supported Vidal on the Filipino attitude, some in a negative tone - e.g. natives disdaining manual labour to seek professions (Blair and Robertson, 1909, vol. 45). Nevertheless, during almost four centuries of Spanish rule\textsuperscript{2} the professional class was very small. In the first American census, in 1903, it numbered 25,637, or 0.34 per cent of the total population. By 1948, two years after Independence, it had increased 500 per cent to 158,775, or 0.65 per cent of the population. The 1970 figure is more than four times that of 1948 and twice as high a percentage

\textsuperscript{1}This Census reported that only 24.3 per cent of the 'civilized' population could read, and another 20.2 per cent could both read and write.

\textsuperscript{2}Magellan 'discovered' the Islands in 1521. Spain ceded its colony to the United States in the Treaty of Paris in 1898.
of the population.\footnote{The occupations included under the professional category vary from one census to another. Not all censuses state their definition of this category. Thus as definite percentages of the size of a particular unchanging group the figures are misleading. The composition of the group in all the postwar censuses and surveys however is probably identical.}

Several factors contributed to this country's exponential rise in the number of professionals: restriction of education under Spain to the few Spanish residents and wealthy Filipinos, and limited entry even for these to the professions, since higher education was offered by only one small, ill-equipped institution, the University of Santo Tomas (established 1611).\footnote{Instruction left much to be desired; for example, female cadavers were then prohibited for medical students and not all courses in the impressive curriculum were taught (Philippine Commission, 1900, vol.II).} Thus during the Spanish regime, the number of professionals was kept low. Yet from these few highly educated Filipinos came the propagandists who agitated for reforms and whose writings later inflamed the peasant masses to revolt.

(b) The diploma syndrome. Among the new American Government's first official acts was the establishment of public schools making education available to the great mass of the population. Later, increasing demand for educated people to man the schools and to filipinize the bureaucracy and political leadership absorbed some of the newly educated people, so reviving the dormant Filipino inclination for white-collar jobs. Education for many was an escape from the farm, an avenue for social mobility. Diplomas as symbols of educational success became very precious not merely as means to achievement. Soon any diploma was valued, and diploma-producing institutions were in high demand. State-supported and church-related schools could not keep pace, and proprietary establishments filled the vacuum.

By 1913, a Division of Private Schools was established to inspect and supervise the many schools not supported by public funds. However, its staff was too small for the flood of institutions wanting to claim 'recognition' by government; and it could not even close unrecognized schools. The
present Bureau of Private Schools, though possessing the power of closure, is still handicapped in its work by huge numbers of schools to control and an exiguous staff. The number of post-secondary private schools has increased phenomenally from 160 in 1949 (Carson, 1961) to 339 in 1960 (Bureau of Private Schools, 1960) or an increase to more than double in one decade. In 1970 there were 622 (BPS, 1971). There were also seven state universities and twenty public colleges in 1971, where only one state-supported university and seven colleges existed in 1959-60 (Carson, 1961).

These institutions gave training of very uneven quality. In 'big business' education, a school's success is measured by its profits. There are more students, higher fees and low expenses (i.e. small libraries, low faculty salaries, part-time instructors, few facilities); admission and graduation policies are lax (Philippine Commission to Survey Philippine Education (PCSPE), 1970). Recognition of a school, based on 'certain minimum quantitative standards' (Joint Congressional Committee, 1951:335) gives few incentives for raising standards. Board examinations could help; but in practice many have merely kept schools running with the pack.

Classification and accreditation seem essential, if institutions are to strive for more than mere recognition; and some schools themselves have initiated a movement for educational quality control with tacit government encouragement. In 1951, an accrediting association was formed by two educational associations and fourteen schools (Carson, 1961), but without funds or powers it remained ineffectual for almost two decades. A new organization, the Philippine Accrediting Association of Schools, Colleges and Universities (PAASCU) now promises to be more effective: it comprises more institutions (twenty eight) and is funded by a newly established foundation, the Fund for Assistance to Private Education (FAPE). It has already begun evaluating Philippine engineering schools.

FAPE also finances other methods of raising private school standards: examinations for admitting freshmen to private institutions, scholarships for their faculty members, and improvements for laboratories, libraries and other facilities. Quality should also benefit from the present conversion of existing institutions into non-profit, non-stock foundations. These changes, however, are all recent, and just beginning
to show results.

(c) The American model. Education was a hallmark of American rule, and this had important implications: a system so patterned after that of the United States that it could be evaluated only against American standards; English as the medium of instruction, further strengthening this affinity; and an attitude that the best training was 'stateside' or, at least, as close to the American style as possible, frequently ignoring local conditions when they conflicted with American requirements. American curricula and textbooks were followed, especially since many schools lacked a research tradition, the faculty role being limited to teaching, with some instructors handling up to twenty-eight credits (eight courses) per semester.

The American model also fostered more and more specialization leading to still higher educational qualifications available in the States. The most ambitious and promising students were encouraged to complete their education abroad, and suffered no stigma - in fact, were openly envied - if they obtained permanent employment there.

Not only training for, but also the actual performance of, the professions imitated the American model. Professional associations either started as chapters of their American counterparts or imitated them closely. Some codes of ethics are direct copies of American rules, and disciplinary procedures developed in the 'mother country' are automatically operative.

(d) Factions in the professions. Despite the strong American influence, however, the professional community seems to have developed certain characteristics not directly traceable to the United States. One is factionalism. In each profession at least two associations compete for membership; it is a rare profession that has not suffered a split. The causes include genuine differences of ideology, struggles for leadership, and personality conflicts. Philippine factionalism of course is not confined to the professional community; it appears to be a characteristic derived from the country's still intensely personalistic alliances (Landé, 1965).

There is strong rivalry too between government-employed and private-sector professionals. This has given rise to factions within associations or to separate professional
organizations, as in the PSCE, the Philippine Society, dominated by civil servants, and the PACE, the Philippine Association, composed largely of practising civil engineers. However, professionals do move easily between the bureaucracy and the private sector, and many operate in both at once, with or without official permission.

(e) The variety of professions. The number of professions has increased along with the number of professionals. Professions may be distinguished by a high level of training required of members, and a monopoly of certain services, maintained by legally established boards, and by rules and regulations—controlling education, licensing and discipline—issued by these boards, and also by government departments and agencies.

Spain conquered with the sword in one hand and the cross in the other. The oldest professions transplanted to the Philippines were the military and the priesthood. Filipinos were never trained by Spain as officers but the clergy became really two professions: the regular clergy who tended to be Spanish and better educated, and the seculars who were minimally trained natives. The tension between these two was one cause of the conflict that led to the expulsion of the Spaniards in 1898.

The other professions developed under Spain can be inferred from the courses offered by the University of Santo Tomas; law, medicine, pharmacy, midwifery and little else. Teaching joined the professions only with the Educational Decree of 1863 which provided for the establishment of normal schools; before this the parish priests were generally the only tutors (Isidro, 1949). Entry to the professions appears to have been regulated solely by the educational institutions throughout the Spanish period.

During the American colonial period, licensing was introduced in 1901 for practising law (in Act No. 190) and medicine (Act No. 310). The latter created a Board of Medical Examiners composed of members in good standing in the profession and without pecuniary interest in any medical school. Pharmacy and dentistry were recognized in 1903, and optometry, five branches of engineering,\textsuperscript{5} architecture and

\textsuperscript{5}These branches are: civil, mechanical, electrical, mining and chemical engineering.
accountancy in the 'twenties. The composition of their boards followed the pattern set by the Medical Act. The Commissioner of Civil Service became the executive officer of all these regulatory bodies under the Reorganization Act of 1932 (Act No. 4007), and recommends to the President 'from among persons recommended by professional associations' the composition of each board (Sec. 10), so officially recognizing the associations.

If legislation regulating practice, and a board, characterize a profession, then the variety of Philippine professions increased tremendously towards the end of the American regime. Eleven such 'professions' have been mentioned, as of 1932. In another reorganization in 1950, sixteen boards were placed under the Civil Service Commissioner and one (law) remained under the Supreme Court. In 1963, the Commissioner named twenty-eight professions, not counting law, in the 'Rules and Regulations Governing Board Examinations' submitted to the President. These included ten types of engineering\(^6\) not to mention architecture and contracting which maintained separate licensing boards. The latest count, in October 1971, showed thirty-three professions, including ten branches of engineering\(^7\) and nine medical occupations.\(^8\) A few of these, e.g. sugar technology, master plumbing, and contracting, would in other countries rank as sub-proessions or not even that.

\(^{(f)}\) The regulation of the professions. The law recognizing each profession also creates a board to regulate its practice. All boards are serviced by a single secretariat under the Civil Service Commissioner.

Board membership carries status and high income and is usually keenly sought: five pesos (usually) per candidate, with candidates running to thousands, yield very attractive returns. Generally, the law provides that the dominant

\(^6\) Added to those listed in the preceding note were: agricultural, air conditioning and refrigerating, geodetic, marine and sanitary engineering.

\(^7\) As before, except that air conditioning and refrigeration engineering was widened to electronic and commercial engineering.

\(^8\) Medicine, medical technology, midwifery, nursing, optometry, pharmacy, physical therapy, dentistry, and veterinary medicine.
professional society, in consultation with the other associations in the discipline, submits to the President a list of recommended appointees. Often, however (especially when the lists used to be given informally) associations would include somebody because of advance information that the President would name him.

The age of Board members (the law frequently demands about ten years' experience) and their remoteness from teaching institutions (imposed to protect the integrity of examinations) probably delay innovations and hamper curricular reform - deviations from the set pattern may reduce a school's successes in the board examinations.

The examination boards not only prepare and evaluate the entry examinations but also keep the registry of those who have qualified. They may suspend or revoke licenses for immoral conduct or acts prohibited under each profession's code of ethics.

Boards have no power to initiate charges against a candidate, a professional, or an unlicensed practitioner, but must wait for cases to be brought before them. The policing of professions may thus be dictated by the interests of potential complainants. Cases entertained by the boards tend to follow a pattern. The Board of Accountancy, for example, may strip of his license to practise, or deny registration to, anyone found guilty of acts prohibited under its Rules. However, since it shares a secretariat with thirty-one other professional boards, cases tend to be settled slowly (Reyes, 1969). 9

Most of these cases - spicy and interesting reading - involved violations of general cultural norms; on cases relating to professional conduct the board appears reluctant to proceed; charges of malpractice abound, but remain unresolved.

Professional associations, pledged - almost by definition - to keep their professions' standards high, might seem an alternative regulating body to a weak board. However

9 Other reasons that he gives are: (i) parties' whereabouts unknown; (ii) postponement by legal technicalities; and (iii) need to settle criminal or civil cases before the Board can act.
their ethics committees tend to 'protect their own', investigating general problem areas (e.g. corruption in the profession) but stopping short of punishing members. Several factors may account for this reluctance to crack the whip, notably the desire to help 'save face'. Subtle sanctions (e.g. ostracism) are said to be preferred to outright expulsion.

Most associations indeed are social clubs rather than professional societies: the convention's highlight is often the coronation of 'Miss Association', while few attend the technical sessions. Professional discipline is weak: few associations have as members more than twenty per cent of those eligible; anyone under fire can easily leave his association and suffer no stigma; and hardly a member is dropped except for non-payment of annual dues.

In addition to boards and associations, the government itself can regulate the professions: civil servants who are professionals may be disciplined by the employing government agency, while private practitioners' work may be reviewed by specially created government units or by various quasi-judicial agencies - accountants for example by the Securities and Exchange Commission or the Central Bank, others by various government investigators including revenue examiners, building inspectors or Medicare representatives.

The highly articulate Philippine press has exposed professional misconduct from time to time, but is handicapped by lack of the technical knowledge necessary to evaluate professionals' performance.

(g) Women in the professions. In 1903 in the professional and administrative classes, there was a high percentage of women employed as teachers (32.9 per cent), nurses (41.9 per cent) and surprisingly, as bankers and brokers (34.9 per cent). Since then, Filipino women have invaded more professional fields. By 1960, for example, one of them could remark that

after 50 years of continuing educational reforms and expansion, the advancement of women in professional, cultural, political and civic spheres has become the rule rather than the exception (Gerona in Carson, 1961:21).
Many successful professional women may be cited: but the status of women can be better gauged by looking at aggregates. For example, women dominate pharmacy, teaching and music, as well as traditional feminine pursuits like home economics and nursing, and are a significant proportion of physicians, accountants and lawyers. We may also consider recent changes in occupational distribution. Between 1960 and 1970, while proportionately more women than men entered the labour force, the categories 'professional, technical and related workers' and 'proprietors, managers, etc.' registered the largest percentage increases for women workers (218 per cent and 467 per cent respectively as compared to 101 per cent for all occupations). Nor was the change simply one relative to the size of the female labour force. In the professional category women actually outnumbered men in both 1960 and 1970, and women also comprised 21.6 per cent of the managers.

The medical profession

(a) Structure of the profession. The 'medical profession' in the Philippines means physicians licensed to practise 'Western' medicine - 'germ theory' of disease and rational not faith-healing methods. Medicine is the country's most prestigious profession, having headed the list of occupational preference in two separate studies (Tiryakian, 1958, and Castillo, 1963). In 1970, the Philippines had 13,101 physicians, 10 almost ten times the number in 1903. Almost a third were female as against only 5.7 per cent seven decades before. The figures given below are from the 1970 physician manpower survey (PMS) conducted by the Association of Philippine Medical Colleges, using a seven per cent sample of the nation's doctors.

10 This is the number presumed to be alive and in the Philippines, based on personnel records of government agencies, medical societies' rosters; telephone directories; and internal revenue records of physicians paying the privilege tax; cross-checked against the membership list of the American Medical Association; list of physicians who left for the United States on an exchange visitors visa, 1965-69; and obituaries of physicians in a local newspaper since 1945. See the Association of Philippine Medical Colleges, 'Physician Manpower Survey, 1970', p. 4, henceforth referred to as PMS.
Table 6.1 shows distribution of doctors by principal employer. Just under two-fifths were employed by government—almost the same as those in solo or group practice. One-seventh were in private medical organizations. Table 6.2 shows distribution of doctors by principal activity. Four-fifths were mainly treating patients; less than one in twenty were in preventive medicine and less than 1 per cent in research.

The figures in Tables 6.1 and 6.2 show only the principal employer and activity. Multiple jobs, however, are common. A physician employed by government or private medical agencies usually treats patients after office hours. He may also serve as resident or consultant in more than one clinic or hospital, spending a few hours in each. Many whose major activity is teaching would also treat patients.

One-third of the physicians in the PMS were in general practice, four per cent indicating no specialty. One-quarter specialized in internal medicine. Obstetrics, alone or with gynaecology, was the next most popular specialization (7.4 per cent) followed by surgery (7.3 per cent), pediatrics (7.2 per cent) and public health (6.5 per cent). However, most of the 584 physicians mentioning a specialization were self-designated; only 5 per cent had specialty board certificates from the Philippines, the United States, or both.

Doctors tend to congregate in more urban areas. The PMS showed 33.8 per cent of respondents living and working in Metropolitan Manila, 22.1 per cent in all other cities, and 44.1 per cent in the rural areas. Another source, based on the largest local drug firm's registry of physicians put 38 per cent of doctors in Greater Manila, 27 per cent in other cities and provincial capitals, and only 35 per cent in the rest of the country (Cuyegkeng, 1971). The areas are differently defined but the conclusion is the same: the

11The Census definition of 'rural areas' used here is narrower than the PMS definition used above; it excludes all cities and municipalities with population density of at least 1000/sq.km., central districts of towns and cities with a density of at least 500/sq.km. and other such districts and barrios meeting certain criteria, including having a street pattern, at least six establishments and at least three major public buildings.
### Table 6.1

Distribution of physicians by principal employer, 1971

<table>
<thead>
<tr>
<th>Principal employer</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>363</td>
<td>39.1</td>
</tr>
<tr>
<td>Department of Health</td>
<td>305</td>
<td>32.9</td>
</tr>
<tr>
<td>Armed Forces</td>
<td>20</td>
<td>2.2</td>
</tr>
<tr>
<td>Other government agencies</td>
<td>38</td>
<td>4.1</td>
</tr>
<tr>
<td>Private medical establishments</td>
<td>132</td>
<td>14.2</td>
</tr>
<tr>
<td>Private hospital</td>
<td>100</td>
<td>10.8</td>
</tr>
<tr>
<td>Medical school</td>
<td>26</td>
<td>2.8</td>
</tr>
<tr>
<td>Voluntary medical organization</td>
<td>6</td>
<td>.7</td>
</tr>
<tr>
<td>Private non-medical establishments</td>
<td>46</td>
<td>5.0</td>
</tr>
<tr>
<td>Non-medical private school</td>
<td>6</td>
<td>.6</td>
</tr>
<tr>
<td>Private firm</td>
<td>14</td>
<td>1.5</td>
</tr>
<tr>
<td>Other organization</td>
<td>26</td>
<td>2.8</td>
</tr>
<tr>
<td>Self-employed</td>
<td>365</td>
<td>39.4</td>
</tr>
<tr>
<td>Solo practice</td>
<td>345</td>
<td>37.2</td>
</tr>
<tr>
<td>Group practice</td>
<td>20</td>
<td>2.2</td>
</tr>
<tr>
<td>Completely inactive</td>
<td>21</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>927</td>
<td>100.0</td>
</tr>
</tbody>
</table>


### Table 6.2

Distribution of physicians by principal activity, 1971

<table>
<thead>
<tr>
<th>Principal activity</th>
<th>Number</th>
<th>Per cent</th>
<th>Number</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct patient care</td>
<td>739</td>
<td>79.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td></td>
<td></td>
<td>58</td>
<td>6.3</td>
</tr>
<tr>
<td>In hospitals</td>
<td>34</td>
<td>3.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In government</td>
<td>11</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In business</td>
<td>13</td>
<td>1.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preventive medicine</td>
<td>42</td>
<td>4.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching and research</td>
<td>21</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>16</td>
<td>1.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>5</td>
<td>.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other medical activity</td>
<td>6</td>
<td>.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-medical activity</td>
<td>40</td>
<td>4.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely inactive</td>
<td>21</td>
<td>2.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>927</td>
<td>100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

rural areas with some two-thirds of the population are served by much fewer physicians. The numbers of people per physician show the contrast more strikingly: for the Philippines as a whole there were 2,800; but in Metropolitan Manila there were only 660; in the rest of the country each citizen shared a doctor with 4,200 others. In some remote or poor provinces, each physician is expected to serve many more people: e.g. in Kalinga-Apayao in the Luzon highlands (27,240), Eastern and Western Samar in the Visayas (19,530 and 18,400 respectively).

The same maldistribution of physicians is indicated by the PMS's figures on the number of physicians in different types of municipalities. Only half the towns were served by more than one doctor while almost one-fourth had none at all. Doctors concentrated in municipalities with municipal incomes over 10,000 pesos annual income while in the poorest towns with less than 3,000 pesos annual municipal income at least two-thirds had no resident doctors.

(b) The practice of medicine in the Philippines. The Philippine practice of medicine exhibits both modern and traditional features. The former are found in towns: physicians tend to be specialized, to see patients on appointment, to limit house-calls and to charge fees according to certain criteria; the relationship with the patient terminates with the treatment. In rural areas, doctors tend to be general practitioners and have more lasting relationships with their patients. People see a physician only if they are sick, when the physician is fetched to a patient's house, not met at his clinic. Payment is usually in kind and for diffuse rather than particular services. For instance, a rural doctor may receive farm products immediately after treating a farmer's child and at several other times. The family is discharging a debt of gratitude which will never be fully settled; but the physician must reciprocate by being always available.

12 Sec. 7(i) 'Rules and Regulations Governing the Practice of Medicine in the Philippines' passed by the Board of Medical Examiners on 9 October, 1968, lists as criteria: (1) nature of the case; (2) patient's financial status; (3) time consumed; (4) physician's professional standing and skill; and (5) average fees charged by comparable local physicians.

13 Hollnsteiner (1964) describes the bonds and forms of payment of the debt of gratitude.
There are various blends of traditional and modern: a government doctor, assigned to an area, may be more able to control his clinic hours than a permanent resident; a physician may have more businesslike relations with patients as a hospital consultant than as their 'family doctor'; his fees may vary according to where he meets his patients—high in his clinic at an elite hospital, low at a less favoured location, and nil at a government hospital or during a visit to his home town. All private hospitals must reserve at least 10 per cent of their beds for charity cases, and many physicians similarly 'tithe' their time.

The high rank of medicine among occupations in the Philippines may be attributed not only to high status accorded the men in white but to high income potential. Actual average earnings of physicians do not distinguish them from other professionals. The 1971 Wage and Salary Survey conducted by the Wage and Position Classification Office14 found mean and median earnings for resident physicians15 in private hospitals of ₱5,114 and ₱4,200 per annum respectively and for private clinic physicians16 ₱10,136 and ₱8,179 respectively. Government salaries generally were about 10% lower. Compared with medical sub-professionals and other professions, the physician is clearly not much better off (see Table 6.3). In fact a resident earns less than a corporate bookkeeper whose position requires only two years of undergraduate training and two to five years experience: the return on investment in a costly medical education is very low.17 The foregoing figures may underestimate physicians' earnings since they disregard

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14 WAPCO is a government agency charged with maintaining equal pay for equal work in the civil service. It conducts surveys of private incomes periodically as a basis for adjusting government salaries.

15 A resident physician 'performs professional medical work in a hospital, usually under the general supervision of a high ranking medical officer'.

16 A clinic physician 'performs professional medical work in diagnosing and prescribing treatments for a variety of illnesses and injuries in a clinic, ... administers drugs and hypodermics and performs minor operations'. Cuyegkeng (1971) estimates the cost at about US$10,000.

other earnings, fringe benefits and non-monetized incomes. A resident physician usually has outside private patients, privileges such as lower medical costs for his family, and free drug samples sometimes sold to patients in disregard of the ethical code.

Some corroboration of physicians' low income is given in the PMS, which found 38.3 per cent or about 5,300 physicians earning less than ₱6,000 a year, while 1.2 per cent earned over ₱100,000. Median income was ₱7,300. The survey asked respondents to include earnings from the sources ignored in the WAPCO survey. Incomes are of course sensitive matters but may be biased either way: understate for tax purposes or inflate to match that of colleagues. Estimating all incomes is very difficult, even for one wishing to tell the truth. Hence the figures are not conclusive but do suggest marked stratification in the profession with probably very few doctors obtaining high incomes.

(c) The PMA and the medical profession. The first medical association, Colegio Medico Farmaceutica de Filipinas, Inc., was established in 1899 by physicians and pharmacists trained in Spanish medical traditions. In 1902, an American-oriented group founded the Manila Medical Society, the nucleus of the later Philippine Medical Association, a component society of the American Medical Association until 1946 (Stauffer, 1966).

The PMA remains the profession's dominant association. It was challenged, in the thirties, by the Philippine Federation of Private Medical Practitioners which criticized its close relationship with government, and more recently by a small leftist group, Samahang Makabayan Medical (Nationalistic Medical Association), its Tagalog name signifying its dissociation from the Americans. The orientations of different medical professional associations indicate conveniently the strength of foreign influences on the profession at various times. Thus the American model's complete eclipse of the Spanish-Continental before World War II is seen in the fading of the Colegio to an obscure wing of the Manila Medical Society; while the Samahang's nationalistic aspirations indicate growing dissatisfaction with Filipino doctors 'trained for export' to the USA - a restiveness felt within as well as outside the dominant PMA.

With an estimated membership of 50 to 70 per cent of all doctors, the PMA may well be the nation's largest professional
Table 6.3
Comparison of mean and median annual incomes of various positions in the private sector, 1971 (in pesos)

<table>
<thead>
<tr>
<th>Position of professional</th>
<th>Weighted average (mean)</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident physician</td>
<td>5,114</td>
<td>4,200</td>
</tr>
<tr>
<td>Clinic physician</td>
<td>10,136</td>
<td>8,179</td>
</tr>
<tr>
<td>Medical technician</td>
<td>4,130</td>
<td>3,600</td>
</tr>
<tr>
<td>Corporate accountant</td>
<td>9,623</td>
<td>9,111</td>
</tr>
<tr>
<td>Corporate bookkeeper II</td>
<td>6,054</td>
<td>5,705</td>
</tr>
<tr>
<td>Civil engineer</td>
<td>8,555</td>
<td>6,933</td>
</tr>
</tbody>
</table>

Source: WAPCO (1971).
association. It has eighty-one geographic chapters; over twenty affiliated specialty boards may award certificates only to PMA members, though they are autonomous in formulating requirements for specialty qualification.

Presidents have always consulted the PMA informally on appointments to the six-man Board of Medical Examiners, and often in nominating the Secretary of Health and other top officials in the Department. The PMA worked actively for the Medical Act of 1959 and its subsequent amendments, which strengthen both the profession and its own hold on it, e.g. by formally requiring that Board members be chosen from a PMA list and also making violation of the PMA Code of Ethics a ground for disciplinary action by the Board.

Unlike its American counterpart, the PMA proposed a Philippine Medical Care Plan, established by law, in 1969. Primarily a health insurance scheme, 'Medicare' is also expected to improve rural medical services by establishing community health centres or hospitals in depressed areas, offering a 25 per cent pay increase to government rural physicians, and providing scholarships to medical students in exchange for later work in rural areas.

(d) The training of physicians. At present, a person needs nine years of tertiary education before taking the medical board examination: four in a pre-medical bachelor's degree; four in the medical course proper; and one year of internship after the M.D. Length and content have changed considerably during the hundred years of formal medical education in the Philippines. The preparatory course in 1871 covered one year, from 1918 two and from 1954 three. A bachelor's degree was required in 1959. Increased emphasis on English, humanities and social science as well as natural science have made the physician a more liberally educated man. The medical course itself was shortened from the six years required during the Spanish period to five years, at first without, and later including, the year of internship.

In 1972, the medical course proper was restructured to accommodate all academic subjects in the first three years, leaving the fourth for a 'full clerkship' or technical training in university hospitals leading to the M.D. Degree, which qualifies the graduate for teaching and research but not practice. For practice he needs internship, a second year of hospital training in accredited hospitals and clinics throughout the country, and a board examination.
It is too early to evaluate the effects of this new M.D. without internship. However, the restructuring was a subject of great controversy among leading physicians and medical educators, especially at the First National Conference on Medical Education, 1968 (APMC, 1968). Most proponents of the innovation considered the old curriculum long but poor in quality. It seemed appropriate to transfer supervision of internship – never close under medical schools – to hospitals evaluated, and selected to receive interns, by the Association of Philippine Medical Colleges, the chief supporter of the reform. This innovation is expected to expose new trainees to actual rural health conditions and to achieve a fairer geographic distribution of physicians by encouraging interns who train outside Manila to practise there permanently.

The task of upgrading the quality of medical education is given to the Board of Medical Education composed of representatives of several interested bodies, both governmental and private. The Board's duties include prescribing the medical curriculum within broad limits set by law and evaluating medical schools' programs, faculty and facilities. It has, however, used its power sparingly; neither it nor the Bureau of Private Schools has attempted to close any medical institution failing to meet standards. The only sanction actually applied is to withhold a subsidy from institutions

18. The Board, created by law in 1959, has as Chairman the Secretary of Education and the following members: Dean, College of Medicine, University of the Philippines; Secretary of Health; Director of Private Schools; Chairman, Board of Medical Examiners; and heads (or their representatives) of the Philippine Medical Association, the Association of Philippine Medical Colleges, and the Philippine Association of Colleges and Universities.

19. Republic Act No. 4056 (1965), appropriates ₱3 million annually from one sweepstakes draw as a subsidy to APMC schools. However, only ₱260,000 has actually been made available yearly. Each school has to reach 75 per cent to become a permanent member and consequently receive the subsidy. The Board has allowed a two-year period (not stipulated in R.A. 4056) to improve performance of the 'poorer' schools, the ones needing the assistance most. Such schools are accorded provisional membership in the APMC; but this and the subsidy are forfeited if after two years they do not meet the 75 per cent 'passing mark'. 
failing to reach 75 per cent on its accreditation scale. However, PHP43,000, the approximate quota per school, is hardly an effective lever.

To deal with the problem of inadequate facilities, medical schools have gradually restricted admissions, and hence the size of their medical classes. The Philippine Medical Association, lately joined by the Association of Philippine Medical Colleges, has fought hard to limit enrolment. As early as 1958, the PMA convinced the Board of Medical Examiners to restrict incoming freshmen to 2,700, shutting out at least 2,000 pre-medical graduates. In 1962, the Board enforced further reductions by requiring student-faculty ratios adopted from a PMA report (Stauffer, 1966). In 1969-70, three medical schools were limited to 300 entering students and three others to 200; U.P. maintained its freshmen admission at 100. U.S.T. gives an idea of the magnitude of this change: its freshmen class shrank from 1,400 in 1957 to 300 in 1970.

The APMC has further proposed the establishment of a Medical Education Assistance Trust to subsidize medical schools and hospitals to develop their faculty and improve facilities. It has urged schools to turn from spoonfeeding and develop instead the students' capacity to respond creatively to anticipated medical problems.

Medical education, while continuing the American system, differs significantly from the present United States model. It is, for example, more traditional, teaching new medical information rather than a scientific approach to evaluating and absorbing new medical knowledge. In addition, while 'specialties (have been) introduced ... as these developed in the Western world' (Besa in APMC, 1968:135), the Philippine curriculum is more rigid than the American, allowing less undergraduate specialization through elective courses. On the other hand, medical training is often accused of being so American-oriented that it becomes

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20 The Board's accreditation committee rates private medical institutions on the following: (i) Adequacy and quality of faculty - 20 per cent; (ii) Basic science facilities and teaching materials - 25 per cent; (iii) Clinical facilities and teaching materials - 25 per cent; (iv) Library facilities - 15 per cent; (v) Medical Board performance - 10 per cent; and (vi) Research - 5 per cent.
irrelevant for the Philippines. Specialty practice is so valued that a new M.D. is encouraged to choose a specialization (practically speaking, to train abroad)\textsuperscript{21} to complete his medical education. Meanwhile, the rural areas need more general practitioners and physicians for the less glamorous tasks of public health and environmental sanitation.

Close connections with American medicine are also developed by the general use of American textbooks\textsuperscript{22} and foreign training of faculty members. As Campos puts it:

Clinical instruction has been largely dominated by instruction in diseases that do not really fall under the major causes of morbidity nor mortality in the country (1972:11).

The various medical schools have started to modify the American model in different ways. The University of Santo Tomas, for instance, has increased its emphasis on treatment of infectious (respiratory) and tropical diseases. The Ramon Magsaysay Memorial School of Medicine (University of the East) has, since 1964, stressed preventive and social medicine and rural medical practice, co-operated with the Philippine Rural Reconstruction Movement in instituting a live-in community development course, and established the UERMMC-Limay Community Health Project, the locale of its rural internship program. The latter includes a Family Planning Demonstration and Service Center, which departs from the general curriculum by emphasizing population and family planning. Similarly, the University of the Philippines devotes its longest period of clerkship to rural community medicine. Perhaps it is evidence of the current Filipinistic orientation of medical schools that from 1965 to 1969 graduate performance has tended to improve in Board examinations but considerably deteriorate in the ECFMG exam for practice in the United States.\textsuperscript{23} From 1965 to 1969 the  

\textsuperscript{21}Residencies in the clinical specialties in hospitals in the Philippines can absorb only 10 to 15 per cent of each year's graduates (Senate Medical Report, 1972).

\textsuperscript{22}For example, in one school's Bulletin of Information on Medicine and Surgery, 1972, the required books included only five by Filipinos, four of them laboratory manuals.

\textsuperscript{23}This is the half-facetious, half-serious explanation by a medical dean as reported in Cuyegkeng, 1971.
percentage of medical graduates passing the Medical Board rose from 84.8 to 90.5; the percentage passing the ECFMG fell from 31.4 to 7.9.

(e) The control of professional standards. In the first three decades of the American regime, the PMA, as a component society, applied the American Medical Association's operative code but without any enforcement machinery. Efforts to modify it, in many a PMA annual meeting, culminated in the promulgation in 1960 of a new code more in line with Philippine conditions and 'with teeth'. The Medical Act of 1959 makes this PMA code legally authoritative for the profession, including non-members.

Cases of unethical conduct may be brought first before the board of ethics of any local PMA chapter. Appeals are heard by the Executive Council of the National PMA which may then warn, suspend (if a PMA member), or start legal action. The Board of Medical Examiners undertakes quasi-judicial proceedings: it may 'disapprove applications for examination or registration, reprimand erring physicians, or suspend or revoke registration certificates' (Medical Act of 1959, as amended). Grounds include: conviction of any offence involving moral turpitude; immoral or dishonorable conduct; insanity; alcoholic or drug addiction; unethical advertising; performing criminal abortion; gross negligence, ignorance or incompetence resulting in death or injury to a patient; fraud in acquiring registration certificate or acting as an unqualified person's dummy; knowingly issuing a false medicine certificate; spreading false rumours about another physician; and any other violation of the PMA code. Several cases, primarily involving immorality and false advertising have been brought before the Board.

One major issue of unprofessional conduct troubling the medical profession concerns its members' relationship with the drug industry. Drugs clearly marked 'for physician's use only: not for sale' are openly sold, by doctors to their patients, or on pharmaceutical counters at 'bargain prices'. When an organized system of processing physicians' samples for sale received strong press condemnation, the PMA sought the assistance of the drug industry, but no solution has been worked out. A bill to prohibit the sale of drug samples is still pending.

A related problem was raised concerning physicians in government hospitals receiving bribes for favouring certain
drugs. After much sound and fury from the press, the PMA and Congress, the matter died unresolved (Stauffer, 1966) though rumours persist.

The policing of 'quacks' is another problem: many areas are doctorless and belief in folk medicine still strong. The PMA has fought this problem in the rural areas, mainly by education, and in the towns by revoking licenses and closing down illegal clinics. The lack of purveyors of Western medicine, however, particularly in rural areas, encourages many Filipinos to resort to traditional healers of various types, surviving from pre-Spanish times. In 1957 the local medical society found 692 traditional to 279 Western-type doctors in a large and progressive Central Luzon province (Stauffer, 1966): the proportion of folk healers to modern ones may well be much higher than two to one in the whole country.

(f) Keeping up with the trends in the profession. The 1970 APMC survey reported 57.9 per cent of Philippine doctors subscribing to general and 22.4 per cent to specialist medical journals. Table 6.4 lists some medical journals published in the Philippines. Other indicators are no more decisive. Seventy-seven per cent of doctors have never attended a refresher course, but the same percentage claimed to have attended scientific meetings during the last five years. Many had acquired some type of postgraduate training, usually within three years after graduation: 84 per cent reported a postgraduate internship, residency, research fellowship or science courses within the Philippines, 36 per cent in the United States, and 3 per cent elsewhere.24

(g) Migration and physician supply. Keeping up with the profession means, mainly, with American developments. A Filipino doctor is trained on American textbooks by US-trained teachers, in a society that highly values all things American, as exemplified by the high membership mustered by a movement called Philippine Statehood, U.S.A. The profession as a whole has endeavoured to free itself from American apronstrings: the PMA has consciously veered away from the AMA and towards the World Medical Association; it also initiated a regional medical association for Asia and Oceania.

24It is not clear how many physicians acquired more than one kind of postgraduate training, or in more than one place; the APMC report did not eliminate double counting.
Table 6.4
Principal Philippine medical periodicals

<table>
<thead>
<tr>
<th>Periodical</th>
<th>Publisher</th>
<th>Initial year of publication</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acta Medica Philippina</td>
<td>Coll. of Medicine and IPM, UP</td>
<td>1964</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Filipino Family Physician</td>
<td>Philippine Academy of Gen. Practice</td>
<td>1962</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Focus on Mental Health</td>
<td>Philippine Mental Health Association</td>
<td>1951</td>
<td>Bi-monthly</td>
</tr>
<tr>
<td>Journal of the La Union Medical Society</td>
<td>La Union Medical Society</td>
<td>1962</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Journal of the Manila Medical Society</td>
<td>Manila Medical Society</td>
<td>1963</td>
<td>Bi-monthly</td>
</tr>
<tr>
<td>Journal of the Pangasinan Medical Society</td>
<td>Pangasinan Medical Society</td>
<td>1954</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Journal of the PFPMP</td>
<td>Phil. Federation of Private Medical Practitioners</td>
<td>1946*</td>
<td>Monthly</td>
</tr>
<tr>
<td>M.D. Journal</td>
<td>Medical Publishers and News Service</td>
<td>1951</td>
<td>Monthly</td>
</tr>
<tr>
<td>Philippine Journal of Cancer</td>
<td>Philippine Cancer Society</td>
<td>1957</td>
<td>Quarterly**</td>
</tr>
<tr>
<td>Philippine Journal of Paediatrics</td>
<td>Philippine Paediatrics Society Inc.</td>
<td>1951</td>
<td>Bi-monthly</td>
</tr>
<tr>
<td>Philippine Journal of Surgery and Surgical Specialties</td>
<td>Philippine College of Surgeons</td>
<td>1945</td>
<td>Bi-monthly</td>
</tr>
<tr>
<td>PMA Journal</td>
<td>Philippine Medical Association</td>
<td>1924</td>
<td>Monthly</td>
</tr>
<tr>
<td>Santo Tomas Journal of Medicine</td>
<td>Faculty of Medicine and Surgery, UST</td>
<td>1945</td>
<td>Bi-monthly</td>
</tr>
</tbody>
</table>

* Irregularly published 1946 to 1951, Volume 1 is 1951.

** Latest issue 1967; may have been discontinued.
The medical schools have modified their curricula to make them more relevant to the Philippine situation.

Nevertheless, individual physicians continue to look to the United States: almost all new graduates take the ECFMG examination and repeaters must be numerous: every year since 1965, at least twice as many took ECFMG examinations as those of the national board (Cuyegkeng, 1971). Naturally therefore, whenever the 'brain drain' is discussed, Philippine doctors are almost inevitably mentioned. The number of emigrating physicians is large from the standpoint of the countries of both origin and destination. The APMC estimates that, as of 31 December 1969, almost one-fourth of all living and practising Philippine physicians graduated since 1902 were permanent (and another 15 per cent temporary) residents of another country — in all almost 40 per cent of the Philippine medical manpower stock. The most favoured destination was the United States which had 87 per cent of permanent emigrants and an additional 3,500 physicians on exchange visitors' visas (see Table 6.5). The present PMA president estimated that Filipinos comprise about one-fifth of all foreign medical graduates in the United States. According to the Physician Manpower Survey, fully 66 per cent of doctors plan to go abroad, from every part of the country.

The quality of those who pass the ECFMG and are accepted for American practice aggravates the problem. Those lost to the country are not only average doctors, but many potential professional leaders.

Because of the high rate of physician out-migration, the Philippines faces a danger of physician shortage for the decade 1970-80. The PMS made several estimates of required supply, all based on the current physician-population ratio of 1:2,800. The most conservative estimate places the annual demand at 550 physicians. Present trends indicate the following annual supply:

<table>
<thead>
<tr>
<th>New (licensed) doctors</th>
<th>Migration</th>
<th>Net supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1100</td>
<td>900 to 600</td>
<td>0 to 300</td>
</tr>
<tr>
<td>Deaths</td>
<td>200</td>
<td>900</td>
</tr>
<tr>
<td></td>
<td>900</td>
<td>900</td>
</tr>
</tbody>
</table>


It may be recalled that medical school admissions have been deliberately reduced. Hence increased production of new physicians is unlikely and only emigration can be controlled to avert a severe shortage.
Table 6.5

Migration status of Philippine medical graduates,* 1902-1969

<table>
<thead>
<tr>
<th>Type of migrants</th>
<th>Number</th>
<th>Per cent of sub-totals</th>
<th>Per cent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent migrants in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S.A.</td>
<td>4,970**</td>
<td>86.9</td>
<td>21.2</td>
</tr>
<tr>
<td>All other countries</td>
<td>750***</td>
<td>13.1</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>5,720</td>
<td>100.0</td>
<td>24.4</td>
</tr>
<tr>
<td>Temporary migrants in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S.A.</td>
<td>3,500</td>
<td>97.2</td>
<td>14.9</td>
</tr>
<tr>
<td>All other countries</td>
<td>100</td>
<td>2.8</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>3,600</td>
<td>100.0</td>
<td>15.4</td>
</tr>
<tr>
<td>Total migrants</td>
<td>9,320</td>
<td>39.8</td>
<td>39.8</td>
</tr>
<tr>
<td>Total in the Philippines</td>
<td>14,100</td>
<td>60.2</td>
<td>60.2</td>
</tr>
<tr>
<td>Total Philippine medical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>graduates</td>
<td>23,420</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Notes: * Includes all living and practising Philippine medical graduates (physicians in the Board of Medical Examiners Register, 1902-1969 less all dead or retired).

** Includes 3,430 listed in the American Medical Association register as of 31 December 1968; 1,200 immigrant visas to the U.S. approved in 1969, and an estimated 340 living in the U.S. but not registered with the AMA.

*** Five hundred in Canada.

Source: Cuyegkeng (1971).

There have been attacks on many fronts: reorientation (as already mentioned) of medical education; the various ways of encouraging doctors to stay, especially for practice in rural areas; stirring of nationalistic sentiments and more directly, a proposed re-evaluation of the Exchange Visitors Program, which has in effect recruited physicians.
and other professionals for employment. The training of sub-professionals like China's 'barefoot doctors' has also been discussed. Physicians generally dismiss the idea believing that an oversupply of qualified M.D.s exists. Moreover, several regard the quality of existing full-fledged registered physicians as far from adequate and therefore consider the creation of lesser-trained substitutes as close to legalising quackery. A few, however, feel that since medical education tends to alienate a man from the rural areas, a more dedicated sub-professional, rooted in the farm, may better fill the health needs of the bulk of the population, provided he is supervised by a trained physician. Some who otherwise favour 'assistant physicians' ask what would assure their non-migration, citing the many medical technologists who have settled abroad. This idea needs further exploration; that it is discussed at all, in the face of large graduating medical classes, is an important symptom of what ails the Philippine medical profession.

The accounting profession

(a) The Philippine practice of public accounting. The Philippine Institute of Certified Public Accountants (PICPA) traces the beginnings of public accountancy to British chartered accountants who set up offices in the early 1900s. Philippine accountancy itself dates from 1923 when the first law regulating the practice of accounting was passed. In that year, forty-three persons registered as CPAs; by 1972, forty-nine years later, 23,939 accountants had been licensed to practise.²⁶

According to the Rules of Professional Conduct of the PICPA, the profession includes public accountancy, internal auditing and government accounting - a recent and controversial view of the scope of the profession.²⁷

²⁵ There was, however, a class known as peritos mercantiles in Spanish times (Melo, 1961). The 457 accountants and bookkeepers in the 1903 census probably belonged to this class. See also Blair and Robertson, 1919, vol. 5, pp. 18, 294-5 and vol. 25, pp. 74-6 for information on auditing and accounting procedures under the Spanish regime.

²⁶ According to the Board of Accountancy, 1972. The list ignores attrition by death, retirement and emigration.

²⁷ These rules, promulgated in 1969, claim a broader scope
In this chapter we follow the PICPA view, that a certified public accountant may or may not be performing public accounting functions; the criterion is his licence to practise as an independent auditor if he so chooses.

According to the Census Bureau's Socio-Economic Survey (1965), there were 2,334 accountants residing in the Philippines in 1963, almost half (1,096) of them in the Metropolitan area. Only architects had a higher percentage of Manila-based practitioners (BCS 91965). This is to be expected, for a CPA must be near the business firms which form his clientele.

Most CPAs in the Philippines are salaried employees of government agencies, business organizations and CPA firms. It is generally believed that there is an oversupply of accountants but the number of CPAs unemployed or overqualified for their positions is unknown. Several accounting positions—although probably not as many as the unemployed and underemployed CPAs—are also occupied by persons without a CPA qualification.28

A new CPA's first accounting position would generally be as accounting clerk or bookkeeper in an established public accounting firm on a fixed salary just above the legal minimum wage. The exceptional person would move up and be entrusted with one client's accounts after three to five years and reach the apex of his career by becoming his erstwhile employer's partner, or establishing his own firm.

27 (continued) than those of the Board of Accountancy in 1968; see the Preamble, in Section 2 on 'Obligation to the Public', Section 4, on 'Acts Discreditable to the Profession', and Section 8, on 'Disclosure about Clients or Employers', which all mention an accountant's responsibility to clients and employers. The Board's code omits 'and employers'; it ignores management advisory and similar services (explicitly subjected by PICPA to its rules of professional conduct). The two codes are otherwise practically identical. Inclusion both of government accountants and of management advisory services within the profession have been matters of keen public controversy (Fernando, 1970, Arroyo, 1971).

28 For government accountants many favour a civil service eligibility examination, not a CPA licence.
CPA firms are either sole proprietorships or partnerships; corporations may not legally practise public accounting.

Several laws and administrative rules of government agencies require CPA services. For example, certified financial statements must be attached to tax returns on quarterly incomes exceeding $25,000, and to applications for commercial bank loans in excess of $50,000. The Securities and Exchange Commission requires audit reports to accompany corporations' annual statements, or those justifying proposed increases in capital stock or other activities. Public utilities may also have their financial statements certified, to justify proposals for rate increases.

CPAs may also be employed in government agencies as clerks, bookkeepers or accountants. This group's salary rates were adjusted in 1971 by a special law, raising all positions by five ranges. At the lowest level (Accounting Clerk I), this constituted an increase of the annual starting salary from $2,544 to $3,264. The present rate is $384 above the minimum wage, and is comparable to corresponding salaries in auditing organizations. A person employed as Accountant I, the first position requiring a CPA licence or its equivalent, is at Range 46, with a midpoint rate of $6,240 per annum, very close to the 1971 WAPCO survey's median and average salaries of corporate accountants ($6,120 and $6,295 p.a. respectively).

The civil service counterparts of external auditors are those working for the Commission on Audit (which post-audits all government transactions) and several government agencies which investigate the accuracy of financial statements submitted to them for tax filing, credit and other purposes. In the latter, possibilities for augmenting income are apparent and charges of corruption have been frequent, though not completely substantiated.

These investigators for tax agencies, loaning agencies and regulatory bodies apparently duplicate the work of the independent auditors who certify the required forms. This is felt to cast doubt on the integrity of the profession, but the private sector appears to have similar misgivings. For instance, a prominent banker, himself a CPA, declared that the banking community, because of past experience, relies on the audit reports of only one firm that is clearly able to turn down engagements (cited in Fernando, March 1970b).
This comment points up the peculiar structure of the Philippine accounting profession with many small auditing organizations and a few large ones. The firm cited by the banker almost completely dominates the profession: in 1970 it counted among its clients fifty-two of the top 100 corporations, forty-eight of the top 200 foreign companies, sixteen of thirty-six commercial banks and several insurance companies and educational institutions (Arroyo, 1971). It has several branches in Southeast Asia. Many prominent business and governmental leaders have been clients or employees. Hence its network of supporters is large, and alleged to be one of the two strongest blocs in the PICPA (the other being the government revenue personnel). Its very size has made it a conspicuous target for charges ranging from unprofessional conduct to unfair competition. Two of the most controversial ethics cases in the profession's history, the so-called Great Debate of 1960 and the SGV-Scott investigation in 1968-69 involved its activities. In both, its actions were deemed to be within professional bounds.

Though accounting is an essentially conservative profession, some of the bigger firms have been unionized and strikes have been called against three, their CPA-employees denouncing their low wages as exploitation. The Court of Industrial Relations has upheld accountants' right to engage in collective bargaining and strikes. This has been held to call in question their professional status (Abayan, 1972).

(b) The popularity of the profession. Accounting is one of the fastest-growing Philippine professions, almost tripling every decade (see Table 6.6). By comparison since 1930 civil engineering grew 263 per cent and medicine 129 per cent per decade. These figures may be inflated since they ignore deaths, retirement and migration of professionals.

The increase in numbers testifies to accountancy's paradoxical popularity. Accountants enjoy much less prestige than physicians or lawyers. In a country which especially

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29 One of this firm's senior partners is an American citizen, the only alien CPA in the Philippines; some regard this as an unfair advantage in attracting foreign business. He is, however, allowed to practise under a special Department of Justice ruling of 1947 and an Act of 1967, having acquired US citizenship by war service in World War II (Arroyo, 1971).
treasures terms of address, the CPA is Mr. Cruz in contrast to Attorney X, Engineer Y, or Architect Z. Nor is it ethical to audit one's family corporation.

Apparently, high failure rates in CPA examinations have been no deterrent, even though low pay is the lot of the relatively few who get registered and find jobs to suit their qualifications.

We can only conjecture some possible explanations for the paradox. The president of a university which trains accountants recently claimed that Philippine private schools' main contribution was allowing working students to achieve degrees through their evening classes and instalment payment of tuition fees. Many institutions that offer these terms also provide accounting courses, which lead to a specific career, take only four years to graduate, and change little, so allowing ready purchase of second-hand texts.

**Table 6.6**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of CPAs</th>
<th>Increase over 10 years ago</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>1923</td>
<td>43</td>
<td>-</td>
</tr>
<tr>
<td>1930</td>
<td>221</td>
<td>178</td>
</tr>
<tr>
<td>1940</td>
<td>900</td>
<td>679</td>
</tr>
<tr>
<td>1950</td>
<td>2,053</td>
<td>1,153</td>
</tr>
<tr>
<td>1960</td>
<td>6,413</td>
<td>4,360</td>
</tr>
<tr>
<td>1970</td>
<td>22,534</td>
<td>16,121</td>
</tr>
</tbody>
</table>

Increase per cent per decade 1930–1970 218

Source: Registration Division, Board of Examiners, Civil Service Commission.

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30 Affixing CPA after one's name is no substitute for an oral title.
Migration figures suggest a final explanation: in one year, 1970, about six per cent of all living Philippine CPAs entered the United States and Canada as permanent residents. This high rate was similar to that of chemical engineers (6.2 per cent) in Gupta's paper (1972) dealing with the engineering and medical professions (the prime 'brain drain' fields) and was exceeded only by dieticians and nutritionists (22.4 per cent). Thus the opportunity for overseas employment may be one attraction of the profession, though a Philippine accountant in the USA could not practise as a full professional since Philippines registration is not accepted there.

(c) The PICPA and other associations. The largest organization of Philippine accountants is the Philippine Institute of Certified Public Accountants (PICPA), with about 3,000 members, some 15 per cent of accountants who have registered, and perhaps half of those in the country. The Philippine Institute of Accountants was created as an affiliate of the American Institute of Accountants (AIA) in 1929, and changed its name in the late fifties when its counterpart became the American Institute of Certified Public Accountants. Its Code of Ethics, until the 1969 revision, closely followed the AICPA's, and rulings of its Committee on Professional Ethics often cited American precedents. It has published a quarterly, The Accountants Journal, since 1950.

Like other Philippine professional bodies, it does not lack rivals. The Association of Government Accountants of the Philippines (AGAP) comprises civil servants performing accounting functions and includes many non-CPAs. Like the PICPA it publishes a periodical, The Philippine Journal of Government Accountants (vol. 1, 1958). The National Association of Accountants, Philippine International Chapter, was formed by a small group which 'seceded' from PICPA but many of its members have retained their PICPA affiliation. The more radical CPAs have set up no broad-based association, but created unions within their firms.

Internationally, the Philippines is active in the Conference of Asian and Pacific Accountants (CAPA) and seems a likely site for CAPA's regional secretariat (Fernando, December 1970).

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31 1,396 went to the US and ten went to Canada. 1970 stock was 22,534.
(d) **Training for accountancy.** During the closing years of the Spanish regime, the school of arts and trades (established 1891), the UST, and the municipal atheneum all offered four-year commerce courses, with accounting and bookkeeping in the second year, leading to the position of *peritos mercantiles* (Philippine Commission, 1905). The present system of accounting education, however, began in the business school of the Jose Rizal College in 1919. Now there are over 250 business colleges, many of them teaching accounting as a major field. The country's two biggest universities, Far Eastern University and University of the East, started as accounting schools, and FEU, through former faculty members and alumni has directly or indirectly spawned the other big Philippine accounting centres.

The Philippines has only two accounting degrees; most intending CPAs major in accounting in commerce or business administration courses. To qualify as accountants they need at least thirty-six credits in accounting and auditing and other specified credits (Republic Act 5166, Sec. 6). The Board of Accounting Education may prescribe additional requirements. Each school structures the curriculum as it chooses, with prior approval from the Bureau of Private Schools. Most schools offer a four-year course, heavily loaded with technical accounting, producing not 'members of a learned profession (but) merely highly-trained technicians' (Arroyo, 1971:184, quoting a business dean); or not even that: the failure rate in the CPA Board examination is the highest among all professional admission tests.

A few institutions have reacted to these high failure rates by introducing more liberal arts and management courses. For instance, the first two years of UP's Business Administration and Accounting Curriculum, introduced in 1968, comprise general education courses, with the first accounting course in the second year.

A very different reaction is the mushrooming of 'review schools', offering neither academic courses nor degrees but operating solely to prepare professional graduates - largely by memorizing, and anticipating questions - for their board examinations.

Yet a third reaction is the Board of Accounting Education's requirement, from 1973, of one year's experience for all CPA examinees, to expose them to the actual work environment (Vera, 1970:162). However, a loophole ensures that experience
is unlikely to be enforced: in lieu of actual employment, students may take: (i) a one-year apprenticeship in accountancy or a related field; or (ii) twelve units of academic work equivalent to practical accounting training. Business schools, because of their huge enrolment, are unlikely to be able to find their students employment opportunities and will probably encourage the academic option.

(e) The relationship of accountants with other professionals. CPAs have three main functions: auditing, tax services and management consultancy. Only the first is exclusive to accountants, lawyers help with taxation and engineers and administration graduates advise on management problems. In rendering these services the CPA may find himself competing or co-operating with other professionals.

A CPA may help clients in tax problems with government revenue collectors, but a lawyer may be needed if the case reaches the courts. Hence many auditing firms have included lawyers on their staffs. This arrangement raises questions of professional ethics of both CPAs and members of the bar. A lawyer employed by an auditing firm to prosecute clients' tax cases may be charged with solicitation or fee-splitting. A CPA firm offering legal services is engaging in a function which CPAs are not authorized to perform. Nevertheless, the practice continues and neither the accounting nor the bar association has issued a clear ruling on it.

An accountant can provide a complete tax service and avoid the problems raised above by acquiring the qualifications of both a lawyer and a CPA; but this raises a more complex issue. Lawyers and CPAs offer their clients different kinds of service: a lawyer should be involved in, and defend, his clients, while a CPA should maintain his independence from them. How does a CPA-lawyer act when his two roles conflict (Arroyo, 1971)?

Unlike tax practice which is a recognized specialty, management advisory service (MS) is a new development in accounting and the question is still raised - whether it falls within the scope of the profession. MS is strictly a non-accounting service which a CPA's training enables him to offer, but performing it may (especially when he joins with other professions in giving it) affect his independence, which is essential to his main attesting duty as a public accountant. A controversy over independence and management
advice rocked the profession in 1968-69. The ad hoc committee analysing the case determined that while a CPA's activities as MS consultant and as auditor could conflict, they need not do so, and favoured a liberal interpretation of the Code to allow more CPAs to render this service. PICPA amended its Rules, a month after—and perhaps because of—the Committee's report, specifically to include within its scope the performance of management advisory and other professional services.

(f) Philippine practice and the American model. Most Philippine professions are patterned after their United States counterparts. This applies, in general, to accountancy: for example, certain auditing practices like physical confirmation of inventories, are required of both Philippine and American, though not of British auditors. However, striking differences in professional practice between the two countries suggest a bold, or perhaps simply a strange, qualification of that assertion. Certain features of Philippine accountancy constitute the model of what the American profession will eventually be, largely because the United States has been, almost from the beginning, the model for the Philippine profession. Two illustrations are educational requirements and registration.

Since 1967, any candidate for admission to the Philippine board examination must first show evidence that he has a bachelor's degree, major in accounting; even by 1923 secondary education and three years of college work were required. But as late as 1945, the American Institute of Accounting recommended only a high school education (raised only in 1959 to a bachelor's degree) for all CPA candidates; and only three states in the USA had this requirement in 1959 (Edwards, 1960).

The other issue involves permission to practise. In the Philippines, while a few government and private accountants may not have passed the board, any independent auditor has

32 See the accounts of the SGV-Scott, Inc. case in Arroyo (1971), Fernando (March 1970), and Salgado (1970).
33 This seems to have resulted from the McKesson-Robbins case in the United States (1938-39).
34 Most other states, however, would reduce the experience requirement if a person has the appropriate bachelor's degree.
to be a CPA. In many American states, however, unregistered public accountants may still audit. Edwards (1960:221) summarizes the trends in American accountancy as follows:

As the public accounting profession expands ... a college or university degree with a major in accounting will be expected of all who enter the field of public accounting. The public interest will demand that every practitioner demonstrate his competence by passing a searching examination, and all professional public accountants will be obliged to increase their technical knowledge and skills throughout their working life by participating in continuing education programs. In the future everyone entering the profession will want to be a CPA.

However, if the USA later actually adopts these requirements, it would not be because it is importing a model already developed in the Philippines. Rather Philippine accountancy, which has always been American in orientation, seems to have copied features applicable in its local situation, whether they were characteristics only of certain states or of the entire country. The unitary structure of the Philippines enabled it to legislate nation-wide requirements more easily than the fifty autonomous units of the United States. The Philippine, more than the American profession, may stress pre-entry qualifications because of the difficulty in regulating performance given the present societal values and attitudes. Moreover it may also be able to impose higher education and registration requirements because the supply of accountants is much higher than the demand: firms for example require their accountants to be CPAs, when theoretically only those accepting public accounting engagements need this.

The civil engineering profession

Spain divided the Philippines in 1867 into seven engineering districts each headed by a Spanish civil engineer. Another civil engineer was Inspector General of the Bureau of Public Works; others headed the other units in the central office, except in the Architectural Section. The Americans created, in 1903, a similar organization. Their Bureau of Public Works is the origin not only of the present BPW but also of the Bureau of Public Highways, the National Irrigation
Administration (NIA), and other agencies: many of the government civil engineers served in the old BPW. In 1921 the first Filipino engineers were registered; there were only eighty-one. In 1970 the Philippines had 10,941 registered civil engineers, and this was 80 per cent more than in 1960.

(a) The Philippine practice of civil engineering. To obtain a more vivid picture of what civil engineers do, we looked closely at a river irrigation project, some 240 miles south of Manila, which we shall call South RIP. Not that the range, scope and rewards of the profession can be depicted by one case; but it provides a convenient springboard for discussion of various aspects of civil engineering practice in general.

River irrigation structures because of their size, cost and community-wide application are government projects: construction and maintenance of dam-type irrigation systems throughout the country are NIA's responsibility. By NIA standards South RIP is a 'small' project estimated to cost P3.4 million (about one half lent by the World Bank), and to serve 4,800 hectares. The project, started in 1967, was 70 per cent completed at the time of the study (1972); it was originally scheduled for completion in 1969 and was considerably behind schedule. NIA had taken over construction in 1970 after a contractor, despite several extensions, repeatedly failed to meet deadlines.

A river irrigation project consists of four phases: (i) investigation and survey; (ii) design, planning and programming; (iii) construction; and (iv) operation and maintenance. In some Asian countries, e.g. Japan, irrigation systems are the responsibility of agricultural engineers: civil engineers supervise only the construction, and sometimes share even this with an agricultural specialist. By contrast, Philippine civil engineers are responsible for all phases of irrigation projects - from design through construction to operation and maintenance. Some Philippine civil engineers concede that particularly in the operation stage, where the engineer must apply structural and hydraulic principles and understand soil and water relationships, agricultural engineers, whose formal academic training includes these, may be more appropriate. However, irrigation construction and maintenance in the Philippines used to be a function of the Bureau of Public Works, a traditional civil engineers' stronghold, and agricultural engineers were relatively scarce. One reason for
continuing to use civil engineers is saving of labour costs: civil, but not agricultural, engineers can easily undertake necessary repairs in case of breakdowns.

South was surveyed in 1955, and resurveyed some ten years later, when funds became available, using the NIA criteria developed for evaluating possible RIP sites. A surveyor or geodetic engineer leads the topographic survey party, but the overall project study is undertaken by central office civil engineers. Of late, agricultural economists have been engaged, partly as a result of World Bank pressures for a more thorough socio-economic as well as engineering investigation of each project area.

How does civil engineering now compare with the work twenty years ago? First, irrigation engineering may not be representative of developments in the profession. For instance, Filipino engineers have developed a type of prestressed concrete for other types of construction but have not used it so far in irrigation structures. Such changes as have occurred seem to be managerial rather than technical. More machines are in use, but South employees stress their rental cost and how better scheduling techniques such as PERT/CPM can maximize their efficiency. Engineers also mention sending more project-status reports to the home office. The increased concern for the administrative side of construction appears to be related to the international loan, financing half the project.

Another set of changes concerns the consideration of an entire irrigation project and its socio-economic impact on the community. Thus drainage canals and access roads, formerly provided by the benefiting farmer and the Bureau of Public Highways or local government respectively, are now constructed by the NIA as part of the irrigation complex. Systemic relationships between irrigation structures and the community are increasingly recognized and more and more professionals are becoming involved, including agricultural and geodetic engineers, agronomists, agricultural economists and lawyers.

Construction follows the central office's design; most changes considered necessary on site require the prior approval of either the regional irrigation engineer or the technical men at headquarters. This is just one instance of Manila's predominance in the engineering profession, whether in private practice or in government. The geographic
Table 6.7
Civil engineers at the 'South' river irrigation project, 1972

<table>
<thead>
<tr>
<th>Designation</th>
<th>Licensed as civil engineer</th>
<th>Appointed to present position</th>
<th>Present salary (in pesos) per day</th>
<th>WAPCO range</th>
<th>Type of appointment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watermaster</td>
<td></td>
<td>1972</td>
<td>10.42 316</td>
<td>38</td>
<td>Temporary</td>
</tr>
<tr>
<td>Construction foreman</td>
<td>1970</td>
<td>1971</td>
<td>12.73 386</td>
<td>42</td>
<td>Temporary</td>
</tr>
<tr>
<td>Construction foreman</td>
<td>1970</td>
<td>1970</td>
<td>12.73 386</td>
<td>42</td>
<td>Temporary</td>
</tr>
<tr>
<td>Junior civil engineer</td>
<td>1968</td>
<td>1969</td>
<td>14.04 426</td>
<td>44</td>
<td>Temporary</td>
</tr>
<tr>
<td>Civil engineer**</td>
<td>1951</td>
<td>1967</td>
<td>18.92 574</td>
<td>50</td>
<td>Permanent</td>
</tr>
<tr>
<td>Regional irrigation engineer</td>
<td>1954</td>
<td>1964</td>
<td>31.12 944</td>
<td>60</td>
<td>Permanent</td>
</tr>
</tbody>
</table>

* WAPCO computations based on 56-hour week.

** Basic appointment; incumbent is at present project engineer of two RIPs.

Source: Personal Data Sheets.
dispersion of civil engineers is instructive. Manila claims a disproportionate share (23.46 per cent) (BCS, 1965); it is both metropolis and centre of the construction industry, but province-based civil engineers begrudge its position. In the 1968 PACE Convention on 'Civil Engineering Progress' several provincial delegations complained that the 'favoured (Manila) engineers' always make the designs of projects, leaving them to deal only with construction; often, they supervised even that, visiting the provinces and sometimes doing the construction too (Philippine Civil Engineering, 1969:12-14).

South RIP had five civil engineers, a geodetic engineer, an instrument man and several labourers. One civil engineer, a native of the dam site, had failed the 1971 board examinations, but had joined as a labourer and had just been appointed as a watermaster, a skilled position, at P10.42 a day. Two civil engineers licensed since 1970 were earning only P12.73 a day as construction foremen - not much better than the unqualified Civil Engineer. Only two civil engineers' positions corresponded to their qualifications: the first licensed four years ago had started as CE Aide I. He had held a temporary appointment as a junior CE since 1969 at P14.04 a day.

The project engineer had been in the irrigation service since passing the board, and during this time had been sent to six local training programs: four were technical seminars, the others management development programs. A civil engineer of over twenty years' experience, he was the only one with a permanent appointment and a monthly wage (P574). He was concurrently project head of another RIP about sixty miles away and commuted between them. On these two appointments he was supervised by the regional irrigation engineer. A registered civil engineer of eighteen years' experience, the latter had been in government service since 1940, mostly as an irrigation engineer and he, too, had four technical and two management seminars to his credit (see Table 6.7).

How do South civil engineers compare with those elsewhere? Their salaries are WAPCO rates, the same throughout the government service. In the private sector, PACE and AGCEP leaders estimated salaries as follows:
<table>
<thead>
<tr>
<th>Number of years after board examination</th>
<th>Approximate monthly salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1 year (probation period)</td>
<td>₱240-350</td>
</tr>
<tr>
<td>2 years</td>
<td>400-600</td>
</tr>
<tr>
<td>5 years</td>
<td>500-800</td>
</tr>
<tr>
<td>10 years</td>
<td>1,000 +</td>
</tr>
</tbody>
</table>

The younger South employees were little worse off than private civil engineers; the two foremen were better off. After five years' experience, however, private sector promotions seem to be faster and rewards higher. The WAPCO survey (1971) placed the average salary of a civil engineer preparing designs of moderately complex structures (Value: ₱60,000-120,000) at ₱8,555 per annum (₱716 monthly). Even this is far above the salary (₱574 per month or ₱6,888 p.a.) of the head engineer of two projects, together costing ₱5 million, with twenty years' experience as a civil engineer behind him. In the provinces government employees also have less chances of consultancy and outside contracting to augment their income, or even of illegal kickbacks, since bidding is conducted in Manila. Private contractors allege that bidding officials can award contracts either to a private-sector 'favourite' or to their own construction companies, run on the side. Such rumours have prompted government civil engineers to unite under AGCEP, and project the positive image of a hardworking, efficient and 'clean' civil servant.

Questions on utilization of qualified engineers are raised by South Civil Engineers' positions: three civil engineering graduates were skilled labourers in positions hardly requiring their academic qualifications - they could have been civil engineering draftsmen or junior civil engineers; the unregistered civil engineer could have used his skills in any one of five WAPCO civil engineering positions ranging from junior civil engineering draftsmen (requiring only secondary trade school graduation), at range 36, to civil engineering draftsmen aide II, requiring a college graduation, at range 41. The present junior civil engineer in turn could become a supervising civil engineering draftsman (range 46) or associate civil engineer (range 47); his first appointment - just after receiving his BSCE but before registration - was as a Civil Engineering Aide I, a post requiring only three years of college.
All this illustrates in detail the low utilization of Philippine engineering and technological expertise, though too much should not be made of the discrepancy, for a small group of civil engineers, between actual employment and paper qualifications. Raymundo (1972), however, provides figures on underemployment and unemployment of high-level manpower in 1967. She found in the engineering and technological fields the highest rates of total unemployment and both visible and invisible underemployment (see Table 6.8).

Technical skills are presumably needed to develop the Philippines; low salaries and lack of employment opportunities, aggravated by a construction slump after the 1970 devaluation, probably account for considerable recent emigration. Gupta (1972) estimates the outflow of civil engineers in just one year (1970) as 2.28 per cent of the 1969 stock. This, though the lowest rate among the branches of engineering, represents a loss of nearly one-fourth of one year's graduating class (1968-69).

(b) Civil engineering associations and the profession. More than in any other profession under study, the development of Philippine civil engineering and its frequent turmoil are reflected in its professional associations. The Philippine Society of Civil Engineers (PSCE), for instance, was first incorporated in 1920 as the Philippine Institute of Engineers and Architects; engineering and architecture were then one profession, and a law passed in 1921 regulated both together. The present name dates from 1933. Two other organizations were formed in the thirties—probably a period of growing professional self-consciousness among civil engineers: the Philippine Engineering association, dominated by civil engineers, did not survive the war; the Philippine Association of Civil Engineers (PACE), established by nine private sector civil engineers in 1937, grew to a membership of almost 600 in 1970.

35 The unemployment rate mentioned here adds the full-time equivalent unemployment (FTEU) of the visibly underemployed to the percentage of the labour force not working at all (Mijares and Tidalgo, 1971).
36 Visible underemployment refers to those working less than the standard number of hours (forty in the Philippines); invisible underemployment to those seeking additional work, whether employed 'full time' or not.
Table 6.8  
Percentage of underemployment and unemployment of Philippine high-level manpower, 1968

<table>
<thead>
<tr>
<th>Field of specialization</th>
<th>Rate of visible and invisible underemployment</th>
<th>Unemployment rate (labour force concept)</th>
<th>Total unemployment rate (FTEU concept)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>All fields</td>
<td>17.8</td>
<td>7.1</td>
<td>7.3</td>
</tr>
<tr>
<td>Engineering and technology</td>
<td>20.2</td>
<td>7.9</td>
<td>8.9</td>
</tr>
<tr>
<td>Medical and paramedical sciences</td>
<td>16.0</td>
<td>1.6</td>
<td>2.8</td>
</tr>
<tr>
<td>Natural, physical and related sciences</td>
<td>10.7</td>
<td>6.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Liberal arts, humanities, social science, business and education</td>
<td>18.1</td>
<td>7.8</td>
<td>8.4</td>
</tr>
</tbody>
</table>

* Full-time equivalent unemployment. For explanation see text p. 39, notes 35 and 36.

Source: Raymundo (1972)
Just before the outbreak of the war, PACE made unsuccessful overtures to join with PSCE, and unite Government and private-sector civil engineers. In 1973 the union was finally accomplished under the name 'Philippine Institute of Civil Engineers' (PICE).

The organizations had some overlap of members but PACE appeared dominant in membership and professionally oriented activities. It had conducted seminars for students and practitioners on the latest developments in civil engineering; promulgated codes for design and construction of various structures; worked for legislation on the National Building Code; and clarified the profession's scope, and the functions of structural, consulting and works engineers.

PACE had not always been active. It was dormant after the war and was reorganized only when it faced 'a total annihilation of the civil engineering profession' in a bill proposed by some architects (PACE, 1954:10). The PACE intervention resulted in the Civil Engineering Law and a separate law regulating the practice of architecture (Rep. Acts Nos. 544 and 545, 17 June 1950). These Acts were discussed by a committee of architects and civil engineers which also removed various irritants involving the two professions.

Amicable discussion has since achieved similar results in potential conflicts with contractors and sanitary engineers before legislation was passed to regulate them. A more formal channel for possible legislation is afforded by the Philippine Council for Science and Technology (PHILCOST), comprising the professional associations of architecture and eight engineering fields, which in 1962, for instance, created an arbitration committee to settle differences among its member-organizations.

Since 1963, government members of the profession have tended to join the Association of Government Civil Engineers of the Philippines (AGCEP), an exclusive club of civil service employees, instead of PSCE. The AGCEP is the new manifestation of the old government-private division in the profession. Members explain that AGCEP is needed because

37 The architects apparently argued 'that they were the only ones commissioned to design buildings' (PACE, 1954:11).
38 Members leaving government service must resign.
private practitioners do not appreciate the work of public-sector engineers, and look down on them. AGCEP's activities - in-service training programs and a mutual-aid system for members - have had narrow, rather than profession-wide, impact. A major project, however, is the revision of the Civil Engineering law; this it has significantly assigned to the same person designated by PACE for that purpose. Its present head, himself a PACE past president, feels that fusion of the AGCEP with the Institute is inevitable, if only to show that the profession has overcome the factional strife of private practitioners and government engineers.

(c) The training of civil engineers. The first Philippine civil engineering degree was a six-year course at the University of Santo Tomas, in 1907, called simply 'Civil Engineering'. Two years later it changed to BSCE. This degree, now a five-year course, was offered in almost fifty public and private institutions in 1970, its curriculum closely following the highly technical American style of two years of basic science, one of basic engineering subjects and two or more specialized branches. The American degree, however, takes only four years. Some engineering schools have modified this model, integrating theory and application in a series of progressively more difficult courses. Some have veered away from a very technical curriculum, including instead general education courses, though one engineering dean considers the liberal arts emphasis misplaced in the first two years, and would prefer the 'humanizing' elements in the last academic year when students know the techniques and are more ready to consider their impacts on the economy and the society.

There is widespread questioning in Southeast Asia of the suitability of the American type of engineering education to a developing country. Filipino educators, for example, must attempt to emphasize labour-intensiveness - an intermediate goal of the development plan - in their curriculum while simultaneously fostering awareness of technological innovation and invention. Other differences from the American model arise from Philippine schools' lack of facilities. For example, because computers - standard equipment in America - are not yet available, classroom assumptions in civil engineering problems have to be simplified (de Castro, 1969).

Perhaps fewer people could be sent abroad, using instead local expertise for training and consultation. The University of the Philippines, for example, has begun developing short
certificate courses (six to twelve months) treating, from a local perspective, general problems such as water resource development.

Engineering educators properly concerned about dearth of equipment and poor quality of faculty have responded readily to the accreditation movement. Civil engineering is the first PAASCU experiment in accreditation—primarily self-examination aided by this accreditation association—to which, so far, four institutions, two of them private, have submitted. After a two-day seminar to explain accreditation, ten more schools have decided to allow PAASCU to evaluate their faculty, facilities and courses. An early feedback of this movement may be a modification of evaluation standards most of which were developed and tested in the United States. Both professional associations, PACE and AGCEP, have held seminars on improving engineering education.

A civil engineer can also refer to several relevant professional journals for the latest developments in his field. Table 6.9 lists some pertinent facts about these periodicals.

Opportunities for keeping up with the latest professional developments include: trips abroad, for higher degrees or shorter 'observation' tours; technical seminars, for government engineers, like those our two engineers from the Southern region attended; 'continuing education seminars' organized by PACE for practitioners (though usually attended by graduating students instead); and refresher courses in Manila, formerly organized by the SEATO Graduate School from Bangkok, but recently taken over by UP, with American funding.

(d) Civil engineering specialties. Civil engineering as defined in the law regulating the profession encompasses:

consultation, design, preparation and plans, specifications, estimates, erection, installation and supervision of the construction of streets, bridges, highways, railroads, airports and hangars, portworks, canals, river and shore improvements, lighthouses, and dry docks; buildings, fixed structures for irrigation, flood protection, drainage, water supply, and sewerage works; demolition of permanent structures; and tunnels ... not ... excluding any other work requiring civil engineering knowledge and application (Republic Act No. 544, 1950, Sec. 2).
Practitioners may concentrate on the design and construction of any one of the enumerated: theoretically no less than fifteen civil engineering specialties. Growth of the bureaucracy has fostered specialization: for example, separate agencies for highways, irrigation works, and railroads have promoted highway, irrigation and railroad engineers, though these all are registered as civil engineers. Water supply and sewerage works, however, are considered the domain of the sanitary engineer, a different professional, though usually trained exactly like a civil engineer except in the final year. Structural engineers, too, have proposed a separate regulatory body (since 1969). Their active organization—the Association of Structural Engineers of the Philippines (ASEP)—has equal standing with the PACE, PSCE, and the architects' and contractors' societies in the Inter-Organization Conference Committee, which co-ordinates the activities of professionals in the construction industry.

After the collapse of poorly designed structures in an earthquake, engineers active in both PACE and ASEP proposed that the boards should limit structural design to fully accredited structural engineers; the Civil Engineering board of examiners formally recognizes structural engineers, on PACE recommendation, after they have pursued advanced studies in structural engineering (nearly all in the USA) or have equivalent experience as practitioners.

Other specialties certified by the Board include port works, highway, hydraulics, soil and foundation engineering, and civil engineering education. Consulting engineers are also considered specialists although their specialization differs in kind from those distinguished by the nature of structures. PACE has submitted to the Board a code defining consulting engineers' activities and responsibility; separate codes have also been promulgated for structural and works engineers.

(e) Regulating the civil engineering profession. In 1968, an earthquake of Intensity VII killed over 300 in Greater Manila; one building collapsed; many others cracked. The local government set up a committee immediately to

A UST graduate program appears to have ended just after World War II, and UP granted only five relevant Master of Engineering degrees before 1970. Since then its masters' program has accelerated, graduating an average of six specialists in civil engineering annually from 1970 to 1972.
<table>
<thead>
<tr>
<th>Periodical*</th>
<th>Publisher</th>
<th>First year of issue</th>
<th>Frequency of issue</th>
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<tr>
<td><strong>Designers and Builders</strong></td>
<td>Philippine Industrial Publication</td>
<td>1955</td>
<td>Monthly</td>
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<td><strong>Construction</strong></td>
<td>No data</td>
<td>1931</td>
<td>Monthly</td>
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<td><strong>Philippine Architecture and Building Journal (PABJOUR)</strong></td>
<td>C.F. Agbayani and Sons 'for the Association of Philippine Government Architects and other Associations'</td>
<td>1959</td>
<td>Quarterly</td>
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<td><strong>Philippine Architecture, Engineering and Construction Record (PAENCOR)</strong></td>
<td>PAENCOR, Inc. 'officially recognized and endorsed by the Philippine Contractors Association'</td>
<td>1954</td>
<td>Monthly</td>
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<td><strong>Philippine Civil Engineering</strong></td>
<td>Philippine Association of Civil Engineers</td>
<td>1955</td>
<td>Semi-annual** (Quarterly)</td>
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<td><strong>Philippine Engineering Record</strong></td>
<td>Philippine Society of Civil Engineers</td>
<td>1939</td>
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<td><strong>Philippine Construction</strong></td>
<td>Philippine Contractors Association</td>
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<td><strong>PHILCOST Annual</strong></td>
<td>Philippine Council of Science and Technology</td>
<td>1953</td>
<td>Annual</td>
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* We were able to get and read at least one issue of all periodicals except *Construction*, which was listed as a monthly journal of engineering in Rizal (1957).

** Discontinued in 1958 and resumed as a quarterly (new series) in 1962.
investigate the causes of the damage; the Senate Housing, Urban Development and Resettlement Committee did the same; the Board of Examiners and the various civil engineering associations participated; UNESCO sent a Reconnaissance Mission. Individual practitioners, including three from the USA, also assessed the situation. A Filipino structural engineer's study laid most of the blame on inadequate structural design, poor materials and workmanship, and lack of proper supervision - all civil engineering failures - and called for a structural code (Flores, 1969). However, before this came into being, other disasters - caused by strong tropical storms - had occurred. In February 1972 the Civil Engineering Board of Examiners adopted a Code prepared by PACE and ASEF and in June the President approved it. Before this, Civil Engineering and architecture students were taught (presumably American) codes, differing according to their instructors and textbooks, to be applied, with or without modification, to a country of killer typhoons, in the Circum-Pacific Seismic Belt.

The year 1972 saw the passage by both houses of Congress of the National Building Code (NBC), a landmark for the regulation of civil engineering and allied professions. This code, pending in one form or another since the mid-fifties, did not include the technical (engineering) regulations already embodied in the structural codes. This emphasized the Board's responsibility for policing the professions, and implicitly recognized its codes (Kakalo, 18 July 1972).

The Board of Examiners for Civil Engineers is to civil engineering what the Boards of both Medical Examiners and Medical Education are to medicine, regulating both the individual practitioners and the educational institutions which train them. The various professional associations help the Board with the former responsibility, and the Philippine Association for Technological Education (PATE), the PAASCU and the engineering schools, with the latter. Like all other licensing boards, however, this one can act only on complaints received, against reported violations of the engineering law and the codes. However, other government units can initiate action: government project contractors face government engineers; many cities and municipalities require building permits for all constructions, which should theoretically uncover defects in the plans before construction; building inspectors come on site while work is going on. However, these personnel are usually underpaid and overworked; the systems may have provided an occasion for palm-greasing,
eliminating a possible check on low engineering standards.

The Civil Engineers, themselves, would prefer a consultant, rather than an inspector to review designs and plans, both consultant and engineer being responsible for the final result (Flores, 1969). This would transfer the inspector's substantive duties to someone competent and licensed for the task.

(f) Foreigners and the profession. A provision in the Civil Engineering Law allows non-Filipinos called in by the Philippine Government to practise without registration in the country: many lucrative government contracts requiring large capital investments have been captured by alien engineers operating under this exemption. An exception is the design and construction of the Pantabangan Dam, and appurtenant structures costing approximately US$62 million. Twenty-five usually competing all-Filipino construction companies banded together into a consortium to build this. Only so can any Filipino company match the foreign engineer's capital, equipment and skill. On other large constructions local engineers could only oppose the entry of foreign technicians after foreign engineers were awarded contracts.

Not all contacts between the Filipino and the foreign civil engineer have been points of conflict: in undergraduate education the American model is still very influential, and specialized graduate training is practically a foreign monopoly; American standards continue to permeate the profession, e.g. accreditation criteria, codes and technical manuals; the consulting engineers' code refers clients for reputable practitioners to CECs (presumably Consulting Engineers Councils), which are American organizations with no Philippine counterpart.

In the South RIP case, we found that the requirements of funding and loaning agencies such as the World Bank and the USAID may improve construction management. From time to time, too, USAID sponsors 'productivity teams' of prominent engineers, architects and contractors for month-long observation trips in the United States. Often their recommendations involve the profession more deeply in the government development programs; in 1963 a team proposed project studies by Filipino consultants for all industrial loans and hiring of private practitioners to design or review government projects; many such teams, after witnessing the enviable engineering developments abroad, return to evolve 'a distinctive Filipino civil engineering style'.
Agricultural extension

(a) Background. The Philippines is basically a country of farms, which in 1969 absorbed 56 per cent of the labour force. Its major exports remain, as in Spanish times, agricultural crops, including sugar, tobacco, abaca and lately fruits such as pineapple and banana.

Spanish attempts to improve agriculture affected the large estates but hardly touched most farmers. Spaniards and Americans alike witnessed the same type of agriculture in their colony: the native 'tractor' a carabao, a strong but slow water buffalo; rain and the river's natural contour watering the crops; the whole family involved in planting and harvesting rice once a year, which grew by fate and faith. The yield, a small eighteen cavans per hectare in 1903, (800kg/ha) increased to only twenty-three in 1948 (Census, 1948). The Spanish crown granted its loyal subjects encomiendas, which became the big landed estates that troubled the Americans, with absentee landlords and indigent tenants.

Farming methods and the land tenure system have withstood the centuries. Expensive machines and cheap labour on small farms prevent mechanization from driving out the carabao. Though irrigation systems have been expanding rapidly to allow multiple cropping, farmers still have to be convinced that irrigation pays. Transistor radios have made new information easier to give them, but they need practical demonstration, not news of successes. The International Rice Research Institute in the Philippines revolutionized rice farming with its miracle seeds and other innovations: the high yield varieties attracted world attention, but the Filipino farmer complained of the taste of the new rice and when he learnt to use the new seeds was soon engulfed by tungro, a pest to which some new varieties were susceptible. This merely increased the reluctance to try new techniques, although IRRI and other researchers soon found new tungro-resistant, tasty varieties.

Agricultural extension in the Philippines is regarded as one approach to land reform, which aims at grappling with peasant discontent by breaking up large estates for redistribution to tenants. However, with a national average size of farms of 2.4 hectares, transfer of ownership must be accompanied by better cultivation methods, to improve agricultural productivity. The Rice and Corn Programme, a concerted effort towards increased productivity, mainly by
agricultural extension, has already begun to show results. In 1968, the yield was forty-five cavans per hectare (1980kg/ha), practically doubling the average 1948 production.

The nation's planners wisely envisage development as expansion of the industrial sector, but on a strengthened agricultural base. In this context agricultural extension may be recognized as an important ingredient for Philippine socio-economic development.

(b) The structure for agricultural extension. In 1952, on the Bell Survey Mission's recommendation, a Bureau of Agricultural Extension (BAE) was created, later to become the Agricultural Productivity Commission (Sison, 1970) and renamed the Bureau of Agricultural Extension in 1973. Provinces, and cities too, have since 1968 established local extension offices, manned in 1969 by 1,500 technical men, including extension workers (FAO, 1969).

Other government offices performing agricultural extension activities include the Bureau of Community Development (BCD) and the National Irrigation Administration; and many non-governmental organizations offer rural technical assistance, including the Philippine Rural Reconstruction Movement and Operation Brotherhood. Agricultural schools conduct demonstrations, at least within their host communities. The UP has pioneered in raising agricultural productivity by a 'social laboratory' approach, applying the latest methods not only on farm units but on the total community. Now the National Science Development Board is creating 'social laboratories' in communities surrounding other state agricultural colleges.

Two strategies are generally used in assigning extension workers: wide-area deployment of specialists, and geographically narrow assignment of multi-purpose workers. The Philippines has chosen generalists specializing only by clientele: farm management technicians (FMTs) tackle all types of problems with farmers, home management technicians (HMTs) with housewives, and rural youth officers (RYOs) mainly with adolescents. Only the agriculture co-operatives agent (ACA) and a few fibre extension agents in the Agricultural Productivity Commission are subject-matter specialists. The BCD and private agencies also train non-specialists. However, because of limited funds and low incentives, there are too few extension agents, and multi-purpose workers are in charge of relatively large territories (two or more municipalities).
For effectiveness they must often concentrate on just one community but this is an individual decision, not an agency rule.

(c) Training for agricultural extension. Agricultural extension workers in the Philippines are highly trained; most agencies require their applicants to be graduates. The Agricultural Productivity Commission goes further and specifies the undergraduate specialization: BS in Agriculture (BSA) for farm management technicians and rural youth officers; BS in Home Economics or Nutrition or similar majors for home management technicians; and BSA, major in Agricultural Economics for agricultural co-operative agents.

Fifteen schools in the Philippines offer bachelor's degrees in agriculture (BSA), and two - UP and the private Araneta University Foundation, in agricultural extension. The UP curriculum was devised principally by American-trained faculty members and reflects American, not Philippine conditions, except for a few adaptations. These include block scheduling for the first three years, allowing specialization among technical subjects only in the fourth and fifth years; more student time in the fields so that they can immediately test their 'book knowledge'; and transfer of field practice from 'summer' (a slack time for Filipino farmers) to a regular semester. The UPCA also follows the government in emphasizing dissemination of technical knowledge to increase the productivity of rice lands.

Special training for extension work is not yet widely appreciated. The common impression is still that anyone can do it, and agencies easily accept less-trained applicants with political backing in preference to BSAE graduates. A rosier picture, however, may be emerging. Not only are the APC and the UPCA in constant touch, but private agency recruiters have begun interviewing new UPCA graduates.

Agricultural extension graduates are very few and most new extension workers have had no previous specialized training. APC applicants are first selected by a strict process including: (i) evaluation of educational qualifications and extracurricular activities; (ii) personal and group interviews to gauge social performance; and (iii) a written general and technical examination. Accepted applicants then undergo one to two weeks' induction training on the functions of APC and the duties and responsibilities of extension agents, and sometimes also a two weeks' orientation training to provide
better understanding of the strategy of teamwork and the land reform program's philosophy and objectives. APC also conducts technical training, for periods ranging from two days to seven months, to inform extension workers of the latest research findings in agriculture, home economics, rural youth and co-operatives. APC and other agencies also sponsor supervisory training, executive development, and other continuing education, and sometimes send extension personnel abroad for post-graduate degree training, conferences, seminars and observation tours (FAO, 1969).

(d) Agricultural Extension: a job or a career? In February 1972, APC had 3,575 agricultural extension workers including 2,146 farm management technicians, 890 home management technicians, 432 rural youth officers and 107 agricultural co-operatives agents. Of these, 2,505 were paid nationally, 1,070 from provincial funds. Every province was served by at least four workers, but apparently personnel were not uniformly distributed throughout the archipelago: Regions III and IV, comprising the sixteen provinces and one sub-province around Manila, have about 37 per cent of the personnel while fifty-one other units shared the remainder. An APC employee suggested that the necessities of the service sometimes yield to political influence or the very human preferences of the staff for particular places. Among extension workers interviewed in two local areas, home province tended to match place of assignment. Also the two provinces with most extension personnel are Laguna and Nueva Ecija, both sites of large agricultural schools. Students may tend to stay near their old campus because of familiarity, or may study in Los Baños, for example, because they come from Laguna.

Workers are allowed in effect to choose their area of assignment mainly because income derived from extension is very low. It is not seen as work requiring expertise. Farm or home management technicians, rural youth officers, and fibre extension agents start at the minimum wage level (₱240 per month). Agricultural co-operatives agents are paid slightly better, starting at ₱332 per month. APC employees

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In 1969, of 242 extension personnel given courses by APC, 170 were in corn production, mostly for one month, but some specialists had four months; thirty had three-month courses in vegetable production and thirty-four unspecified in-service training courses of under two months (FAO, 1969).
may receive field allowances, but only - according to one informant - if there are savings at the end of the fiscal year. In his province the local government offers a lower basic salary but conscientiously pays field allowances, which gives the province-paid employee more than national extension agents.

In a rural setting, an extension worker must often 'be gallant', i.e. provide snacks at meetings or pay for materials in advance. He can, however, sometimes augment his income. Farmers may offer him presents - not direct payment. Generally, if he accepts he will be charged with working only when gifts are proffered. The richer farmers may also ask for his assistance and pay him for consultancy, presumably after office hours. According to some informants, this practice has resulted in relative neglect of the small farmer. However, the extension worker's responsibility is disproportionate to his pay, and many people respond sympathetically even to open soliciting of additional income.

A low starting salary is a drawback shared by extension workers with almost every other occupational group, including lawyers, physicians, accountants and engineers. However, while these other professionals can by proficiency and experience achieve fast advancement and high income, agricultural technicians can apparently advance only by changing their jobs. APC's organizational structure is so flat that promotion is very competitive. For example, in 1969 there were 1,817 farm management technicians, but only fifteen supervisors for them, so that only one of 121 technicians could expect promotion which, incidentally, meant a pay increase of merely P$100 monthly. Even assuming they could qualify as provincial agriculturists, there were only fifty-eight such positions including two assistant agriculturists.41 Besides, at the higher levels, one becomes, not an extension worker, but wholly an administrator, while other professionals in executive positions need not abandon their basic calling. This practically implies that to advance, an extension worker has to change jobs, perhaps to research, administration, farming itself, or an unrelated occupation.

APC turnover is high: in 1968, 250 positions were vacated by promotion, emigration to the United States and Canada, and

41 Other extension workers have slightly better promotion chances: supervisory positions are one for each ten rural youth officers, and for each eleven home management technicians.
transfers to private industry. A big majority of those
leaving left to seek better employment (FAO, 1969). Trans­
ferring to another agency offers little hope for advancement.
Recently, extension workers at a private agency struck because
of low pay and the wide disparity between their incomes and
those of administrative and research workers. Many agents
have become salesmen for fertilizer and other agricultural
companies, performing practically identical functions but
being better paid and able to be 'gallant' with a ready
supply of their firm's free samples. Even this position,
however, has no distinct career line.

(e) Relations with farmers and researchers. The agric­
ultural extension worker's task entails contact with both
farmers and agricultural researchers. With farmers his
essential function is to persuade them to apply his technical
knowledge on their land. Since he can hardly meet all the
farmers, the extension worker generally picks at least one
'co-operator' to 'sell' his counsel to other farmers, by
leadership and demonstration of the new methods. The choice
of a 'co-operator' is crucial since the worker's credibility
largely depends on him. In communities with strong factions
a neutral but still influential co-operator may be hard to
find.

The extension workers themselves should clearly be avail­
able to all; yet they tend to spend more time with the richer
farmers who can speak English, and are generally educated
and receptive to modern techniques - who, literally and
figuratively, speak the same language. This leads to alleg­
ations of being more responsive to elite farmers because they
can pay for extra services - allegations which, even if
unsubstantiated, often effectively discourage interested
but poorer farmers from seeking advice.

How effective are extension workers in reaching the
farmers? We talked with four farmers from villages on a
public highway, in a relatively well-served province, near
an agricultural college with its own extension and action
research programs. We expected agricultural extension to be
familiar to these farmers. To our surprise, only one had
met an extension worker or heard of his activities in the
community. This one was articulate, not about the extension
worker's impact on his farm but about the open rivalry of the
personnel of two government extension agencies. Another -
a member of the farmers' co-operative marketing association
organized by one agency - does not understand its functions
nor the privileges of his membership. All illiterates, these farmers had all at some time tried a new seed or technique, but had since discontinued using these, after poor results. The innovations were copied from neighbours who in turn had learned them from others. They might be ultimately traceable to an extension worker's initiative but we could not be sure; knowledge of his techniques had been lost en route. Our interviews were only indicative, but the farmers' responses suggested that the extension worker's wide area of operations might indeed be vitiating his productivity even in communities where extension work was exceptionally widely available.

With agricultural researchers, an extension agent's contacts would be for information: answers to questions his clients raise, or news of developments in the production of his area's main crops. Such contacts, however, are rare and tend to occur only when both extension agent and researcher work in one agency.

Normally the farm management technician meets agricultural researchers when he attends their technical lectures. The relationship is that of student to teacher with a status gap between the two types of agricultural workers. The salary differential is not large, at least initially: one researcher maintained that ₱316 a month would not be sufficient were she not single and living with parents. Research is, however, a white-collar job while the extension worker's position is regarded as manual. Significantly, researchers in the Home Development Office of the UP College of Agriculture, working as extension agents in action research programs are careful to identify themselves as faculty members. Research gives greater possibilities for promotion, if only because far fewer people are competing for the next higher position. It offers better career prospects: overseas studies or permanent migration. By contrast, few extension workers desire further university training. Their work is considered non-academic, and their qualifications inadequate, even though they may be those most likely to succeed in motivating farmers and doing other extension work.

(f) Professionalising agricultural extension. Is extension work, then, a career? We have already discussed high turnover rates and the lack of promotion opportunities. Some workers, however, have stayed on the job as long as fifteen years, despite other employment opportunities outside agricultural extension. Their main reason is the intrinsic
satisfaction of working with farmers and seeing their counsel yield happy results. Where psychic income makes one disregard low monetary income, the practitioners may soon move towards making the service a monopoly of a chosen few.

Another situation that could affect the development of an extension profession is the high educational qualifications already required. Despite the general impression that extension work can be performed without special training, the agencies involved have succeeded in prescribing at least a bachelor's degree for their field personnel and APC requirements go further. The educational requisites may only be a result of the country's need to utilize its vast army of college graduates. However, interested practitioners and academics have started to ask whether agricultural extension workers are not in fact over-qualified for their responsibilities.

Educational qualifications, however, are unlikely to be lowered. Two things may happen instead. First, academic requisites may be made more specific so that only those with agriculture or even agricultural extension as a major would be allowed to perform extension work. In this case, the salient factor would not just be the possession of a diploma, but rather the fact that they undergo a longer training period during which they can internalize and develop values necessary for effective interaction with the farmers. Secondly, jobs may be created that would employ a person fully. These may themselves constitute the career now missing from agricultural extension work. These twin developments, coupled with the formation of an association, may augur well for the professionalization of agricultural extension.

Concluding remarks: the professions and the Philippine situation

Philippine professions are relatively young - most no older than this century - and their present level of development is therefore impressive. They have functioning national associations, some with several provincial chapters, publish their own journals, and manifest in their codes of ethics a serious desire to maintain high standards in a select group. Educational qualifications are high. Laws affecting the professions are not so much government imposed as proposed - sometimes even drafted - by the professions' own associations,
to limit entry and exact adequate performance from members. Moreover, many professions have branched out into specialties, indicating a sufficiently large group of people able to perform specialized professional service, and a corresponding demand for such specialization. All these characteristics of the Philippine professions are also hallmarks of developed professions - a stage of growth reached in the West only after a much longer professional evolution.

The Philippine development has been greatly helped by its late arrival upon the scene. Many features that its professions exhibit were not so much developed as adopted. The promulgation of professional rules, for instance, was in the West a response to a felt need for regulating performance. Philippine codes, however, often answered a profession's need to be acceptable to the international community and were not used primarily to evaluate colleagues' behaviour. Other features, too, may be window-dressing as if showing off the trappings of a profession would make it one. Rarely, of course, does respectability alone dictate whether a certain group of men will put up an association or write a journal or pass a law. Generally, these result from the combined influences of international models, particularly the American one, and the resources, demands and challenges of the Philippine situation. Our discussion shows how these factors blended to produce the various features of each profession.

However, unconsciously and sometimes deliberately, the professions have gradually evolved a Philippine model. The relatively large number of female professionals, the over-concentration of high-level manpower in the primate city, the sharp government-private divisions - all seem to be Filipino professional characteristics. In the training, there is the unwieldy number of educational institutions and their great variation in quality. Finally there are the social constraints on professional discipline, tempering the formal American code.

Many American features, naturally, remain. Yet many characteristics which seem to be adopted from the United States may be found on closer inspection to be actually required by local circumstances. For instance, the new apprenticeship requirement in accounting makes the profession more like the American, but actually arises from the local spectacle of the forbidding CPA examinations. The merger of the CE professional associations - an apparent reversal
of Filipino factionalism - seems to have arisen from the demands of local conditions. The emphasis on community medicine is at least simultaneous with, if not ahead of, American concern for the environment outside the hospital. Other developments such as freshmen admission tests, scholarship grants and accreditation - although of long standing in the United States - have come about not out of imitation but for local improvements.

A major area of growth is in numbers; the additions practically double the professional stock every ten years. This testifies to the professions' sustained popularity which we found puzzling especially in accountancy. Income, never very high, has been depressed further and perhaps made more unequal by the expansion, with a very few members enjoying high prestige, visibility and income and the professional 'mass' at the base, suffering not only low pay and status but possibly underemployment or even unemployment.

In such a situation one would expect the profession to raise standards and discourage new entrants. Our professions did this by different methods: medicine tightened freshmen admission; civil engineering added a fifth year; the accounting board made its examination standards very much stiffer. Even agricultural extension had strict recruitment procedures. However, except in medicine, these have scarcely affected the rapid growth of the professions.

Tan (1969) asserted that Filipinos are not as inherently traditional in choosing occupations as some social scientists have alleged. She showed evidence of a response to market opportunities for educated labour by new career preferences. The problem is to devise a method of informing them which fields are crowded.

The regulation of performance standards does not seem to be affected by the expanding population. Despite growing numbers, the professions continue to direct behaviour by traditional means - working on guilt or shame, but not publicly punishing one's own. When these methods fail, the offended group merely forms, or secedes from, an association.

An effective - but often unwelcome - method for reducing the oversupply of professionals is emigration. Some in fact join a profession with an eye to becoming a 'stateside' member. 'Brain drain' is a reality in all Philippine professions but although many members leave, the income of the
remaining professionals has not noticeably increased. One dubious salutary effect is cited frequently: the Philippines' high international reputation because of its expatriates' creditable performance, despite frequently voiced misgivings about the educational system that produced them.

Nevertheless, its professional migration remains a big problem. Medicine, at least, faces a severe manpower shortage because of brain drain, but is loth to train more professionals with no guarantee that they will not end up in the American market. For all professions, brain drain is a symptom that they have not yet successfully tackled their greatest challenge: to develop a profession on a par with others, but at the same time in touch with, and useful to unique Philippine conditions.
Chapter 7

Analysis by professions

T.H. Silcock

Historical and theoretical background

Modern professions - disciplined and selected groups practising a science-based skill requiring substantial mental training - are hardly found in most countries' traditional culture; there may be doctors and priests, but their traditional learning is not related to a rapidly changing technology; scientific medicine and our three other professions were introduced into Southeast Asia from elsewhere. The incomes of those who first introduced modern professions were certainly high by local standards; and as missionaries and others began introducing secondary education in Asia (and, later, Africa) some wealthy parents sent their sons overseas for professional training, generally as lawyers or doctors.

The exact level of earnings was hardly important in the early years. The local population's standard of living was much lower than that of either a European or a locally born professional. These trained people first created the prestige of the western professions. The local population did not fully understand what they achieved. Doctors were employed to look after the health of Europeans and of their labour forces, and later to serve the local hospitals that were built (for example, in Malaya) as the demand for Western medicine grew. The techniques of engineers, accountants and agricultural research workers were even less understood. They were well paid, in practice, because they were priced in an international market.

When local professional training was introduced, the initial motive was probably one of economy. Administrators found it expensive to recruit expatriate professionals or train local people abroad. It was just assumed, for example
in Singapore, that local training would lead to salaries nearer to local income levels. In Thailand it was at first hoped to adjust the character of medicine also to Thailand's needs and resources (Bidyabhed, Luang Binbakya, 1958:411-2).

Neither in Singapore nor in Thailand was there any recognition of a connection between differentiating the training and keeping costs low. In Singapore the professions, from the beginning, sought recognition by the General Medical Council of the United Kingdom; in Thailand adaptation to local conditions was designed for more rapid acceptance, not for keeping costs down. The relation between incomes and differentiation of training is an emotional issue not easily discussed in public.

This study relates to a time, not when local training was just beginning, but when it is already well established. It has now clearly become physically possible to train the professionals needed to transform production techniques and living standards, but market forces prevent this happening. Professional incomes are linked to a world market but the incomes of peasants on the fringes of a subsistence economy are not, and this prevents, in many different ways, the diffusion of modern techniques, through professional agents, to those whose productivity they would most increase.

(a) Framework of analysis. We operate within a system of many nation states, in which even the present low standard of living, let alone a rapidly rising one, can be maintained only by participation in the international division of labour (Pearson, 1969, Chapter 1); development studies are mainly concerned with improving the conditions in which such participation can take place. No one effective instrument yet exists for co-ordinating international policies towards improving these conditions, but for many different agencies, co-ordination is one object of policy. This applies to the training of professional skills which has to be done largely by governments, acting alone or in collaboration. In no modern country is training done wholly or even mainly by individuals for profit. Many of the poorest nations, with limited resources for improving their productivity, can obtain help from other states. The amount they can obtain is limited, but it is rarely a fixed sum which they can allocate as they think fit. Not only are there economies of scale in training, so that donor countries or agencies with limited budgets usually offer places in training courses already available, but also policy on training is heavily
influenced by private or semi-private organizations such as universities which have policies of their own and are in turn influenced by professional organizations.

Moreover science itself has an important international aspect (Price, 1970, 1972-73). There are institutions related to the communication of knowledge that cannot be split up, and a part of the problem of achieving technical progress is arranging the links with this international system. Technology, however, is related only quite closely to science, and professions are more akin to technology than to science itself. Technology must take account of local prices, local availabilities and scarcities, but its adaptation is a complex matter: with physical capital many instances can be found in which adaptation, even to very different factor supplies, seems uneconomic. The need for adaptation cannot be taken for granted.

Yet though we cannot assume that every nation should adapt the structure of every profession to its own educational, economic and cultural situation, there is at least a presumption that some nations will need to adapt some professions; and they are much less free to adapt these than to adapt most other technologies. Moreover, though the constraints are sometimes the result of policies based on self-interest and power and hence difficult to change, they sometimes seem the result merely of inadequate information and analysis. Different policies are not so much conflicting as inconsistent and confused.

What is the contribution that professional skills make to economic development? In part, of course, the professional simply renders a professional service for which his client is prepared to pay: a service which the client may regard as partly consumer-durable - protection against illness, arbitrary arrest and violence, unforeseen irregularities in cash flow, and the like - and partly as a capital good - various techniques for increasing the amount and the reliability of one's income, whether through greater health, enforceable contracts, or buildings that will stand up to floods and tornadoes.

If this were all that professionals did, there would be no problems of regulating the training and conduct of professionals that could not be solved by simple market forces, and many of the problems considered in this study would cease to exist. In all western countries, whether capitalist
or socialist, professionals are a part of the elite structure and have helped to convince both ruling groups and the population as a whole that progress (including economic progress) depends on the professional's work being based on a system of selection, training and discipline, the function of which is to ensure both that professionals' knowledge is sound and that it is not used mainly to take advantage of their clients. It is a part of the general culture of all those who have been influenced by the growth of science over the last three centuries, that we can attempt to judge, by such objective tests as we can, how far these claims are valid; but we can also attempt to appraise, in terms of particular social disciplines, how elites such as professions fit into our changing theories about the structure of social life.

It is the interaction between these two points of view about the application of knowledge that makes it difficult to give a clear and generally valid account of those elite structures which are based on knowledge. We cannot usefully analyse at all without a belief that sound knowledge exists, or at least that we can attach some meaning to improvement of knowledge by making it more consistent and more in accordance with carefully designed observation. If, therefore, a claim is made, that a particular social structure furthers sound knowledge in a particular field, we have something that can be empirically tested. Moreover, if claims are made either that anyone who professes to have knowledge, but does not, cannot be adequately tested by those who consult him before he has enriched himself at their expense, or alternatively that anyone, who has the knowledge, acquires power over his clients which makes it necessary to subject him to special discipline, these claims, too, can be empirically tested (though probably not with rigour). Claims by particular professions to be allowed to control their own training and discipline are commonly of this kind. It is, on the one hand, difficult to deny that doctors or engineers without adequate knowledge or professional discipline can enrich themselves, while doing a great deal of harm, if there is no professional control. On the other hand, while professional knowledge is clearly relevant in assessment and discipline, few people outside a profession would question that the profession as a whole is an interested party and unlikely to design a control system that is any kind of economic optimum. Other sections of the community, including the government, have a legitimate interest in attempting, so far as possible, to see that the professional function is accurately defined, and performed without more cost than is necessary.
We cannot assume that accurate knowledge — certainly not modern scientific knowledge — emerges merely from removing restrictions on freedom of speech. Nor can we assume that people can buy accurate knowledge in the market place, without institutional help, merely by allowing free competition between experts. On the other hand this does not mean that we can work out objectively what institutional structure will ensure that those who need any particular range of accurate knowledge can be trained and disciplined, so that they acquire and use it for their particular function at minimum cost. The fact that our existing market structure does it rather badly does not imply that there exists any divinely anointed authority that can do it perfectly — whether that be a fully democratically elected government, an all-wise civil servant or public commission or a party supported by an infallible doctrine of history. If we are to do any better than we do at present it will be because of analysis of the problem from many different points of view and the kind of compromise that a complex and open society makes possible. Different specialists have different knowledge to contribute to this problem. An economist can attend chiefly to the demand and cost factors, the significance of investment, monopoly and yield, and the relevance of the economic conditions in a particular country to the range and type of knowledge required.

(b) Markets for professional knowledge and skills. Governments are interested in the market for professional knowledge and skills within their territory for three principal reasons: they raise and spend a substantial revenue on training people for professions, and for skilled occupations which professionals largely control; they confer some monopoly on professions by licensing people to practise them; and they often have relations with foreign governments, related to the selection of people travelling to give or receive professional training.

There are important differences between the markets for professional knowledge in rich and poor countries, both on the supply and the demand sides. Moreover because all national markets are related to a global structure of basic scientific knowledge, the growth and effectiveness of which depends overwhelmingly on its links throughout the world, the influences that foster or discourage mobility between different markets assume special importance, both in rich and in poor countries.
In so far as the structure, through which professional knowledge and skill is delivered, is uniform in all markets, we can measure both the supply and the demand in terms of number of professionals trained and number of hours worked by each. In practice, measurement in these terms introduces important distortions, for economic, cultural and political reasons, on both the supply and the demand sides; and the tendency to discuss the topic in terms of manpower of different grades masks the very significant forces, mainly related to mobility between markets, which tend to make uniformity seem much greater than it is. However, we can begin by looking at the supply and demand situation for qualified professionals, measured simply by number.

An important factor on the supply side is the qualification itself. This is normally determined by a process negotiated in each market between (at least) a professional association, a government and a university. Each of these bodies is influenced both by the functions the body performs and by the individual economic interests of its members. The income of professionals depends on the extent to which the qualification is restrictive (which influences mainly the supply) and on the way the function is performed (which influences mainly the demand). The restrictiveness of the qualification will be justified by the profession in various ways. In a relatively wealthy country it will usually be necessary - because professional structures are well understood - to defend it in terms of the time necessary to acquire the necessary knowledge and assimilate professional discipline. Partly because of increased training in universities it is now, in most wealthy countries, more difficult to defend exclusiveness merely on national or racial grounds. In poor countries the qualification is much less likely to be defended on grounds of knowledge and discipline: professional requirements are much less widely known, and both historical influences, based on a demand for parity of treatment between local and foreign staff, and economic and political ones, based on individual and national recognition, are much more powerful.

Given the qualification, the supply of professionals in any given profession depends on the numbers who are able and willing to enter the relevant professional training courses and pass the tests prescribed. The government can influence the numbers wanting to enter any training course by charges or subsidies at different levels in the education process and can select from these according to its own criteria.
The supply is also influenced by the numbers from abroad who can meet the qualification and are admitted as immigrants and those who emigrate to other countries.

The demand for professionals is influenced by the level of national income and the resulting private demand for professional services, whether by individuals or by companies or other institutions using the professional service as part of their productive activity. There is also usually a direct public demand for professional services. The level of demand at any given income can be influenced by individual professionals advertising or otherwise promoting demand, or by the profession as a whole persuading or frightening the public into demanding, individually or through legislation, that certain things (offering to cure cancer or designing high dams, for example) be done by qualified professionals. The government may also, for various political motives, subsidize the consumption of professional services by private individuals, particularly the poor.

Demand is also influenced by the way in which professional work is carried out. Obviously if the professionals' knowledge and skill are satisfactory this will encourage public demand; but professionals will also try to prevent competition sufficiently to enable them to be firm when clients tempt them to unethical behaviour. They may indeed need some power to restrict competition; but, like their other powers, this power needs to be kept under some disinterested scrutiny if it is not to convert the professional into a high priest with unlimited powers.

Governments invest substantial amounts of public funds in professional and pre-professional training. Probably the main justification for this is that it is virtually impossible for really poor people to educate their own children, and - in addition to the general productivity of an educated population - development requires large numbers of able people to be trained in scientific techniques. Any ability available should not be wasted, and the school system should enable those who can do professional or scientific work to be trained for it, whatever their social class.

There is a good deal of evidence that the school system does not do this very well (Simmons, 1974). Indeed Illich goes so far as to claim that the school system merely legitimizes (in terms of achievement) inequalities really due to social class (Illich, 1971). Nevertheless, even
though most of the investment goes to educate children from relatively privileged backgrounds, it at least eliminates the loss of potential professionals from families that are only moderately well-off and moderately committed to education, and the poorest countries cannot afford to lose even these.

Whatever the effect on equality, however, the investment almost certainly benefits the country's gross national product considerably more than it benefits the income of the individual trainee, provided when he is trained he stays within the country and ensures that its affairs are carried on with more accurate knowledge of the facts. What anyone will pay for a service that is aimed at influencing the future will depend on his desire to influence it and his belief that the service can do so. In so far as knowledge is sound, these beliefs will be more accurate and this affects actual psychic income but it is the belief, not its accuracy, which determines how people will value the service. Accuracy depends on a training and discipline which the public cannot judge in each individual case.

In a rich country the government will aim at a level of restriction that will give it a range of candidates from which to select those students with tested ability and commitment, and will offer them a sufficient inducement to undertake the training that can produce the combination of knowledge, commitment, and skill, that the function needs (with existing, usually capital-intensive, technologies). Probably this level of restriction will yield incomes for qualified people sufficiently high to enable adequate discipline to be enforced by a threat to withdraw the qualification. But it is possible (though perhaps unlikely) that the need for discipline might require more restriction than would be needed for adequate selection and training alone. Rich countries will need to devote their chief effort to seeing that the number of professionals is not restricted to a level which gives incomes higher than are needed to secure the performance of the professional function. Since the public is accustomed to professional services, the image of its function which the profession wishes to project will not be very different from the function actually needed; and since the government will have pressures from parents and excluded students to set against those of professional associations, its task should be relatively simple.

Governments in poor countries face a difficult choice of strategies. As in richer countries, they are not the only
investor in professional training; but the difference in interest between government on the one hand and parents and professionals on the other is much greater. The government interest is predominantly in ensuring that professionals remain in the country. Government's interest in this is related to an interest in adapting professional training to local conditions; for if there is a large exodus of professionals, this not only makes professional service at home scarcer; it also affects the willingness of professionals to adapt to local conditions.

There are two possible strategies for professional training. One is to accept the fact that market structure, if not subject to massive government interference, will make the earnings of professionals much higher than the earnings of the bulk of the population, simply because, if they have the necessary knowledge to participate in the international science system, they will naturally have high mobility. Accepting this fact means accepting, at least for several decades, a structure in which there will be relatively few professionals. Use must somehow be made of intermediate grades, selected and trained solely in relation to local needs; but it must be appreciated that what these will have to be paid will depend on how far their training gives them international mobility. Both the local system of training, and the local delivery of services based on knowledge, will be designed to accommodate to local factor prices, and care will be taken that the numbers trained (at least from public funds) in skills that give some international mobility will be limited to the numbers that will be demanded when the adapted technique is used.

We can call this strategy a market-acceptance strategy; but it is only in a very restricted sense market-determined. A market-determined strategy would be one which accepted not only the earnings determined by a relatively wealthy world market but also its professional institutions which determine professional earnings by interaction between governments, training bodies, and professionals, in the political context of a group of very wealthy countries. These wealthy countries transfer only very limited funds to other sovereign jurisdictions. Poor countries, therefore, under this strategy, use their political power to modify the structure of professional institutions so as to adapt to local real costs and not export their professionals.
Some details of how this strategy might work, and how international pressures - usually involuntary and based on inadequate analysis - hinder its application, are considered later. An alternative strategy, however, is to use controls over migration across national frontiers to hamper the mobility itself. If the higher international mobility of the educated not only greatly distorts the training process but leads to large sums, raised by taxes, being used to train individuals for export, a theoretically possible policy is to require all citizens who enjoy privileges of greater international mobility, to pay a tax when they go abroad for employment which might be calculated in relation to the cost of training them and the benefit the country would lose.

The chief advantage of this strategy, which we can call a migration-control strategy, is that it would make possible a professional structure, based on local supply and demand conditions, which would be very much cheaper and could therefore deliver professional services in a manner much more like those prevailing in richer countries. The chief cost of training professionals is paying for the time of other professionals. If this was relatively inexpensive in poor countries the cost of professional services would be much lower and they could be more widely used. There would, of course, be some differences both in the training and in the professional structure, because of different conditions of local knowledge and different degrees of acceptance of professional roles; but great modification of the professional structure, to allow for the very high cost of professional service, would not be needed.

We may look next at some of the possibilities of each strategy, how they are impeded by external pressures, and how particular governments have been influenced by ideas implied in each of the strategies. This analysis will indicate how the range of knowledge taught at different levels could be affected by implications of the different strategies. It may also demonstrate that analysis of professions in terms of numbers of people at different professional levels will tend to conceal many of the real problems.

(c) The market acceptance strategy. Selection of those who are to be professionals can be very strict: the high incomes of professionals in relation to those of ordinary people will produce large numbers competing for each place; however, among the more important criteria of selection imposed by the government will be proved commitment to
professional goals in a local context and capacity to design and effectively operate systems of delegating parts of the professional task to unskilled people. Training will remain expensive because the cost of potential trainers will be nearly as high locally as overseas, while numbers to be trained will—especially if the country is small—be too small for economies of scale. There will however be less need to stress local training of professionals with this strategy: local training will be undertaken where it has special advantages. For both supply and demand reasons, training will be local when it takes the form of apprenticeship in finding out necessary information. It may well be desirable to emphasize research, by fairly well established and simplified techniques, at the first degree level, followed by study of more recent techniques, abroad where necessary, as the equivalent of graduate work. This does however assume that the country sending them for training can, by prior selection and adequate inducement, ensure that their training abroad is appropriately chosen and adapted. This will be more fully considered later.

The delivery of professional service would very largely consist in having professionals delegate large parts of their work to untrained, and relatively immobile, local inhabitants. These would need both special training and an effective system of discipline to secure conscientious work; but the income gradient between the general population and the professional, which makes delegation necessary, also supplies the inducement to make it possible.

The market acceptance strategy implies working with few professionals, who carry a large case load by delegation to non-professionals, whom they themselves instruct and supervise. The professionals, however, are keenly selected and are trained for this work.

As time passes, the number of sub-professionals who can operate under professional guidance will increase, the quality and quantity of professional service will improve and this will contribute to a rise in national income levels. This in turn will make it possible to afford more professionals paid at international prices.

(d) **Migration control strategy.** In this strategy there is, of course, no attempt to depress professional incomes to a level anywhere near the average national income per earner in the whole population. Even the official salary
for the main job of government professional workers in, say, Thailand or Indonesia, is a higher multiple of average national income per head than government professionals enjoy in Australia or other industrialized countries. There seems to be no reason to suppose that such salaries - even if supplementary incomes were not available - would be too small to attract a substantial surplus of qualified candidates; selection for high quality, an exacting training and strict professional discipline could be imposed; yet numbers per head similar to those in much richer countries could be expected without too much delay.

Once local trainers of professionals were trained the cost of professional training would fall to levels related to basic local earnings. This is because the main cost in training professionals and in delivering professional service is the cost of the time of professionals. In some professions, such as medicine, training costs in relation to local basic earnings would be fairly high because of expensive equipment. In other professions, books - though a relatively small part of the total - are relatively much more expensive in poor countries than in rich, because they are produced at rich-country prices. However, these costs would not be too heavy to prevent poor countries from planning for a professional service fairly similar in structure to that of rich countries if, by strict control of migration, they could keep professional earnings down to a level based on basic earnings in the country and a sufficient margin for selection, training and discipline. It would of course be desirable to adapt training to economize on scarce equipment and to adapt practice to a role involving relatively more instruction of clients than in countries with long-established professions. But these changes would be relatively easier if the emphasis on overseas opportunities could be reduced.

The commonest method of securing a return from government investment in education is not general control over migration but imposition of a bond to make a professional work in a particular capacity for which he has been trained. This, however, is too drastic a restriction on his mobility, since internal mobility after training is desirable to prevent rigidity. For example, a contract, signed in advance of receiving an education, to serve a particular department may restrict someone, who develops unforeseen aptitudes for law or administration, to being an ineffective and frustrated school teacher. A good Civil Service Commission can ensure that professional salaries are not too high, and nevertheless
can persuade or coerce a good many people to begin a career in the government without being tied to a particular department. At one time the Thai Civil Service Commission did this very effectively; but this affects only the public sector. Private doctors, accountants and engineers will still have a strong interest in methods of training and practice that make them as mobile internationally as possible, and so raise their equilibrium level of income. As long as this private option is available, it will be necessary to wink at irregular ways of supplementing official incomes, if the public sector is not to lose its best professionals to the private sector.

If, however, educated people are required to pay heavily for passports, this tends to create an inward-looking economy; for if people are allowed to travel at all, and if foreign countries do not co-operate with the sending countries' controls, it is hard to prevent any travel from being used as a means of permanent migration, provided the potential increase in income is large enough. This inward-looking bias may or may not seriously handicap a country as large as China or India; it is obviously very seriously impoverishing for small countries.

One of the major difficulties in controlling the migration of the best educated is the fact that in the early stages, the new intellectuals and professionals are almost bound to see themselves as part of an international system. Discrimination in earnings at this stage has almost always been seen as discrimination on grounds of race or nationality. This raises the whole question of the cultural identity of those who, born in a poor colonial territory, were educated to play a part in an essentially international system of scientific knowledge, through the education system of a colonizing power. Colonial powers tended to see the best educated of their subjects as occupying an intermediate position in the process of transmitting the benefits of 'civilization' to the rest of the population. The educated elites themselves, as we have seen in Chapters 2 and 3, often joined in, or even led, the opposition to the colonial system, but normally regarded access to the system of scientific and technical knowledge, not as an evil, but as something international which their colonial masters used as a source of power and monopolized for their own ends.

It was natural for these educated elites to see any modification of the professional system of the West and any restriction of access to its benefits as a relic of
colonialism to be swept away; especially as the process of diffusing professional services to the local population cheaply had often involved systems of professional subordin-
ation that were essentially racial. Professionals themselves often saw the process of expansion of knowledge by imitating Western techniques as virtually all that was necessary to raise incomes and create a demand for these services. (It will be recalled that at this time Western development economists, particularly in the USA, were similarly over-
estimating the importance of physical capital and infra-
structure.)

In spite of this, and in spite of the leadership given by professionals, it is interesting that several countries, such as India and Tanzania, have made determined efforts to keep professional incomes low and discourage migration of professionals; several others, such as Thailand, have at least tried to keep down the earnings of professionals in the government service by making such service an obligation for those trained abroad.

Countries which have broadly accepted internationally determined levels of professional income, such as Thailand in the period between World War I and World War II, have usually developed only ad hoc methods of delegation to sub-professionals.

(e) Role of technical assistance and overseas training. The alternative strategies, on the one hand of adaptation of the professional structure to incomes determined by international mobility and the free market, and, on the other, of general control of migration to allow a locally oriented professional structure to develop, have been introduced not because any of the poorer countries are free wholly to adopt such a strategy, but because rather piecemeal efforts are made toward adopting both strategies, often inconsistently, and both are frustrated by international pressures. The object of the analysis is to enable us to consider these pressures more clearly and to attempt - as a co-operative effort between richer and poorer countries - to allow more freedom to select what are seen as appropriate policies.

First we must pay some attention to the adverse effects of features of the present international structure which have emerged for historical reasons and could be remedied with determined effort.
A country which tries to adapt its professional structure to conform to the market rates of income could work out the general kind of selection and training it would need; but it will rarely, in fact, trouble to do so, because it will realise the difficulty of persuading foreign training institutions either to accept its selection criteria or to adapt training programs to its requirements.

Clearly the appropriate adaptation would be to keep the number of full professionals low and have them trained to use sub-professionals whose international mobility would be rather low, because their training, knowledge and techniques would be well adapted to the local situation. The professionals themselves would be selected as people strongly committed to the local professional service, undertaking courses overseas to adapt whatever knowledge they could acquire, and thereafter scanning the international technical literature and initiating local research to apply it where possible to their local needs. Only very large countries in the Third World, however, could afford, from their own resources, even one university fully staffed by people sufficiently selected to be fully adequate in two systems, sufficiently committed to be able to subordinate their international techniques to local needs, and with a sufficiently low teaching load and adequate income to spend their time mainly keeping abreast of new developments, overseas and at home, and helping to apply one to the other.

If countries cannot afford this, they must do the best they can with aid from overseas both in the form of overseas post-graduate training and by the use of overseas experts. This almost inevitably puts them in a position where they are dependent on the selection criteria and training systems of the richer countries. In so far as they follow these, high incomes will generate over-supply of professionals in the private sector, budget stringency for developing adequate mass services, and frustration of failed students in secondary schools and universities.

On the other hand, if they try to keep local salaries low and expand the professional service, their chances of restricting migration are seriously hampered by the possibilities of higher-level training overseas and the difficulties of generating adequate research and higher-level training locally. Research in the local universities is hampered by the need for academics to earn supplementary incomes, and the character of local professional practice is also affected
by the need for supplementary incomes. These 'needs' in turn result from the fact that professionals judge their own economic value in terms of that of colleagues similarly trained overseas.

The main problem in adjusting the impact of international technical assistance is that while governments are under considerable pressure to respect each other's sovereignty, the aid relationship is such that it is impossible to act wholly neutrally. If donors are merely responsive to government requests in terms of their own availabilities they will influence recipients involuntarily towards their own pattern of professional structure and development. If development is to be assisted it is necessary for each party to take into account the situation in the other and for both to work towards an agreed long-run strategy in terms of what is politically possible.

In these terms we can consider two key points at which aid policy can influence the professional system: selection for overseas training, and adaptation of training in the receiving country to assist control policy.

Selection is most important when the less developed country is relatively willing to accept international professional salaries. Here the number of professionals that can be employed is small. Their incomes are very high in comparison with local incomes. Competition for professional training - especially overseas - is very keen, but at present, following the line of least resistance, its effects are largely perverse. The easiest students to train abroad are selected, and these are too often those least able to adapt what they learn to their own country's conditions.

To organize selection in any other way is difficult for three reasons: (i) while, in principle, universities often wish that overseas students should apply in their own country the skills they learn abroad, they usually wish to select their own students and do this most easily in terms of tests that they know - in their own language and educational system; (ii) nepotism is politically easier to resist by a formal external system, even one known to be inappropriate for selecting the very best quality; (iii) the students best able to adapt to their own country's professional needs probably need a longer time overseas: their language skill may be inadequate or they may have proved their capacity in other ways than by passing examinations on foreign text-books,
and need more preparation to profit by advanced training designed for a different society.

The aid official who takes selection seriously needs to convert both universities and treasury officials, and if—as usually happens—the public is impatient of spending any money on aid staff, he may have too much else to do.

It is therefore important to stress that, in a situation where international prices for professional skill are accepted, the number trying to be selected (not merely directly, but at lower points also on the educational ladder) will vastly exceed the number actually selected. If the selection is solely on the basis of conformity to the requirements of a wealthier society, all those who are not selected will be warped by a sense not only of their own inferiority but still more of the inferiority of their own country, its language, its tradition-bound population and its problems; and, unlike those who succeed, they will achieve no effective international communication to compensate for this distortion. The relative numbers are such that, with selection along the path of least resistance, the net effect of aid will almost certainly be adverse.

Universities and, still more, professional associations may regard special selection procedures, designed to secure a strong local orientation, as tiresome examples of nationalism, to be evaded wherever possible. Yet such procedures, soundly worked out, between policy makers with long-run rational approaches on both sides, will probably be much the most important part of the aid process in countries which opt mainly for a market solution and adaptation of technology.

Their few professionals who go overseas—though key men, well paid to redesign an entire professional structure—can hardly expect a training specially tailored to their own needs. Under the international market system, however, the governments have one important lever: the achievement of professional status confers enormous advantages. This must be used to ensure that the selection criteria work to assist the country's professional purposes: it should not be wasted on shortening the individual's stay abroad, and unnecessarily simplifying the tasks of his teachers, by using his abilities to make him a carbon copy of an overseas professional before he leaves his own country. Able people should be selected, who can take what they need and adapt it to their own task; but the methods of testing ability should not make them
think of their task as imitation of what is done elsewhere.

Where the professional income is very high, the high quality of both trainees and trainers would allow those who control the system of selection to exact considerable innovation in the local, preliminary, training. In particular the relatively non-scientific background and the lack of reliable information should be used as a resource to train professionals to establish and maintain professional standards. In long-settled societies those who wish to confront raw nature must travel long distances; in a new country, where primeval jungle can be found not twenty miles away, there is no point in building highways to far-off mountains. An accountant in a less-developed country should cut his teeth on extracting order from the books of a farmers' co-operative rather than on solving the depreciation problems of holding companies. He should learn the nature of exploration - find out that knowledge is an activity not a store - on his own frontier of knowledge not on the international frontier of the implications of new theories and inventions. His knowledge of an international language should be tested by his capacity to convey the gist of a new theory to an illiterate assistant, not by his fluency and capacity to avoid slips of grammar. Training and selection along these lines would be possible, and it should be an important part of technical assistance to encourage it, and to stimulate adaptability of structure when the policy is one of adapting to international market rates.

The situation is different where the policy is to force down the earnings of professionals by restricting mobility. Here, even if migration is made so costly and difficult that it rarely enters into calculations, the inducement to take up a professional career is less. Professional earnings are, as has been explained, adequate to induce an excess supply of able and qualified applicants. Selection, discipline and the willingness to undergo an adequate training will, in the long run, present no problems. Even professional specialists to do the training can usually be secured on subsidized terms from aid programs. Imported professionals, however, can hardly be expected to go far in adapting the training to local economic and social conditions. Local specialists will still be scarce and expensive, and if they are paid international salaries the whole program is likely to break down.
In all the examples here studied, the local specialists earned substantial incomes from private practice, and this made it difficult for them to innovate. Unless a gifted and dedicated individual emerges, a period of relatively poor and stereotyped teaching and poor morale is almost inevitable and it would be unwise for foreign aid to offer inducements inconsistent with the basic policy.

Foreign aid could, however, help to develop courses not based on expensive equipment and large libraries, and to break the scarcity of specialists by training specialisms adapted to local needs. However, it is much more important, when the aim is to keep down professional costs, that foreign aid systems should avoid selection criteria that aggravate the difficulty of controlling professional migration, and should pay a great deal of attention to maintaining and improving professional morale. One of the main problems, at this stage, is the need to train some specialists overseas, and the desire (largely fostered by professionals) to have local qualifications accepted immediately for this. It is, however, clearly a waste of resources to train general professionals unnecessarily expensively, so as to save perhaps a year's preparation for specialists going overseas. Aid agencies can materially assist adaptation, in these conditions, by being especially responsive to requests for special assistance at this level, particularly as it would imply caring about the objectives of local training and selection, instead of judging its quality by its detailed similarity to an overseas system.

At this point overseas aid to professions may encounter its greatest difficulty. How are professional standards to be raised, after falling during a period of expanding numbers, declining professional incomes and increasing isolation? Scope for raising them will certainly exist, as education expands and the number seeking entry to professions increases. Can the government and the professions be helped to relate these standards to the promotion of local objectives, which will differ at least in emphasis from those in the professions of industrial countries? Perhaps little can be done from outside to promote standards of this kind except defend their supporters from ignorant and often self-serving professional hostility in richer countries. One service, however, is possible: to promote contacts among different countries where professional services are being fostered in the same way, and encourage discussion of the problems.
Medicine

Medicine occupies a paradoxical position in development. It is widely recognized that modern control of epidemics is one of the main causes of rapid population growth, which makes economic development imperative. Epidemic control brings scientific medicine into less-developed countries, and this gradually spreads the demand for personal health care. Once the general public has some confidence in scientific medicine, political pressure develops for an adequate service; but the cost of personal health care is high. Humanitarian sentiment makes it relatively easy to obtain international aid for developing medical services, but the costs of operating them represent so great a redistribution of income that few of the less-developed countries can afford, in the rural areas, the kind of service that doctors, trained in wealthier countries, introduce in the capital cities.

It is much more difficult for a country's elite to accept a situation in which people die because the doctor who treats them is inadequately trained or equipped, than one in which they die because no doctor is available. It is felt to be more of a national disgrace that any patient, rich or poor, in the country's leading hospital, should die for want of open-heart surgery or the latest kidney-machine than that 5,000 should die in childbirth or minor surgery for want of a dresser trained in antisepctic procedures. This is because, once a person has become a doctor's patient, the standard of treatment the doctor demands tends to be the best available in the world. Any non-medical who questions the priorities tends to be accused of setting dollars and cents above a human life, just because the patient lives in a poor country.

Medical care is becoming more international and doctors more mobile as standards of living in rich countries improve. However, the finance of health care - as distinct from that of training specialists and medical teachers - remains national. Government policy can rarely accept altogether the point of view of the doctors. The nature of the response to medical standards and public demand depends on the relative importance of public and private doctors and the historical influence of missionaries and of contract medicine, as well as on other historical factors.
Government policy and professional structure. Government policy has affected professional structure in medicine, very differently in each of the four countries. In Thailand Western medicine was introduced through contacts of a highly centralized government with missionaries using Western techniques; it emphasized public health and diffusion of new medical knowledge to country people. Later emphasis on an international standard for Thai doctors brought in foreign teachers, and learning through English. This raised medical standards during the initial years of few students and full-time teachers; but after World War II foreign texts came to be used by teachers too busy supplementing their inadequate incomes to adapt to Thai conditions. The politicians remained interested in low medical salaries and a nation-wide public health service, in principle; but discipline to enforce these has been lacking and a brain drain of doctors to Bangkok and abroad has developed.

In Malaya the Colonial government originally established hospitals mainly for its own staff, with limited public facilities, which expanded as confidence in Western medicine grew. With the expansion of rubber and tin production, in the early twentieth century, contract medicine also expanded, to care for European staff recruited overseas, and later also for the labour force. The government recognized early that control of tropical diseases - particularly malaria - was a key to the economic development of Malaya. It was relatively empty, but within easy reach of the crowded lands of India and China, once disease ceased to make migration unprofitable; hence an Institute of Medical Research was established as early as 1900 (Institute of Medical Research, 1951) - even before any doctors were trained in Malaya - and the country pioneered scientific malaria control measures. A Labour Department - initially established to supervise immigration - came under political pressure from India and elsewhere (Parmer, 1960), and imposed medical and other welfare conditions on companies employing imported labour.

Medical services for a low-income labour force led to the importation first of Indian dressers, then of Indian doctors to Malaya. A two-tier medical structure developed, with well-paid European and relatively poorly paid Asian doctors.

The foundation of the King Edward VII College of Medicine in 1904 was almost certainly encouraged by the belief that it would train doctors paid on Indian, not European, scales.
However, by 1914, its diplomas were recognized by the United Kingdom's General Medical Council; Malayan doctors began — in spite of official opposition — taking specialist qualifications abroad in the 1930s, and by 1940 many had prosperous private practices, and the two-tier salary in government service was becoming difficult to maintain. During the war several doctors held high administrative positions under the Japanese, after which salaries were equalized except for an expatriation allowance of about 10 per cent (Trusted, 1947).  

Malaysia's main limiting factor in rural medical service is now shortage of manpower, resulting from the great cost of medical training. The second medical school — in the Malay language, in the National University — has only just started, and it is too early to judge the kind of doctors it will produce; but clearly no advantage is being taken of the language medium to train a substantially less expensive doctor: English texts are to be used, the library duplicating, as far as possible, that of the English-medium school. This will mean that the standard of English for entry will be high, which — since the Malay secondary school system is short of teachers and relatively weak — will probably mean few Malay-trained doctors. From these few, however, may emerge those who can ultimately produce a course more adapted to the needs of the Malay population. The government at present has a will to provide genuine health service to the rural population, and exercises effective discipline. It lacks a force of doctors trained and willing to work in rural areas.

The government has played a much less important role in medicine in the Philippines and Taiwan. The public health services employ less than a third of the doctors in the Philippines and less than a quarter in Taiwan, as compared with over a half in the other two, and government involvement in training is much less.

There are, however, important differences between the two economies. In the Philippines the first medical school — in the University of Santo Tomas — was a religious foundation, teaching medicine, in principle, as an expression of Christian concern. American public funds could not be used

1There was, however, discrimination (bitterly resented) between local and expatriate doctors already appointed, in terms of their position on the new scales.
to support it, and a new medical school was established in the University of the Philippines. This has emphasized high technical standards; under its leadership a Philippine Medical Association affiliated to the American Medical Association grew up. Medicine, however, has always had a special relation to Philippine nationalism because the national hero, José Rizal, was a doctor: the public role of the Philippine Medical Association has through most of its history, differed more from that of its American equivalent than the individual aspirations of Philippine doctors. The individual tends to look to technical achievement as judged by American criteria: a modern image, specialization, and publication or a teaching appointment. By contrast the Association has consistently tried to base its strength not on such conformity but on promoting a profession adapted to Philippine needs. The very different attitudes of the AMA and the PMA to 'medicare' illustrate the point.

The Association of Philippine Medical Schools also, though some of its activities - in raising standards by limiting numbers - recall the normal mixture of monopoly and ethics practised by most professional bodies, has also emphasized courses in community health and greater relevance of the curriculum.

If these two associations are to check the brain drain and its effect in distorting local values, they will need to make public service, and the promotion of a Philippine professional code, the criterion for all medical promotions and distinctions, including acceptance for overseas study. This can hardly be done without foreign - especially American - co-operation.

Taiwan seems to have less potential for development, because of the relations between the government, the professional associations and unqualified doctors. The Japanese first introduced a Western-style medical profession, but all but a few of the Japanese doctors were repatriated after World War II. Doctors from the mainland were generally few and of poor quality. In the meantime medical orderlies from the army and others with very limited knowledge had set up practices. The law has been lax - carelessly drafted and negligently or corruptly enforced. The local medical associations exist mainly as agents of government policy.

The medical brain drain in Taiwan also differs from that in the Philippines. The actual proportion of total medical
graduates leaving is almost certainly much smaller: the figures suggest 4 per cent of students going abroad, and when allowance is made for the growth rate in entries and a fairly high failure rate, perhaps 10 per cent of all medical graduates might be abroad, while the National Taiwan University figures suggest about 20 per cent. This confirms the estimate that a higher proportion of this university's graduates go abroad. The pattern is similar to the Philippine one - both reflecting a closer approximation of the National University to overseas syllabuses - but with lower numbers: Taiwan teaches in Chinese, the Philippines in English.

The professional associations in Taiwan are weak and not much concerned with either brain drain problems or standards. Admission to the profession is not mainly by the examination, but by credentials and interview, which - in view of the attitude of politicians to unqualified professionals - seem unlikely to lead to either strict or objective admission standards. The profession is thus one in which those practising range from those who have passed the highest examinations to totally unqualified quacks. Does this enable the market to allot low-quality professionals to the poorer rural areas so that all get at least some service according to capacity to pay? The evidence suggests that urban-rural distribution, though probably better in Taiwan than in the Philippines, is still very far from satisfactory.

Though the number going abroad is relatively small, the effect of the brain drain on the type of training given seems to operate at least as perversely as in the Philippines. Production of large numbers of 'pirated' editions aggravates the tendency to use irrelevant foreign texts almost exclusively. The pressure to go abroad is intense, and even those who achieve no specialist training normally seem to make some pretence of specialization.

(b) Competition with traditional medicine. In all these Southeast Asian countries, the Western scientific system of medicine conflicts with traditional systems often with a substantial empirical content, but little scientific ordering of the data.

Few technologies are wholly scientific, and the professional medical and other techniques developed in the West are certainly no exception. Any technology must devise rudimentary unifying ideas, to facilitate memory and unify conventional elements with empirical knowledge. The unifying
ideas may suggest practices that do not work: e.g. a humoral pathology may describe a food as 'heating' but it may fail to cure a particular 'cold' condition which the pathology suggests that it should cure (indigenous humoral pathologies in the region are discussed in Hart, 1969); if so - provided communication is good - the description of it as 'heating' will be suitably qualified. Empirical traditions develop in many technologies (e.g. cooking) with little scientific analysis or deliberately designed experiments.

The main basis of a 'scientific' technology, however, is not a technical tradition but a part of the general international body of science, constantly being enlarged by new research. The professional in a developing country needs to be kept in touch with this organized knowledge. Appropriate professional structure depends on the way this is to be done: these professionals are, after all, near a different frontier. They also need to know the prevailing beliefs, and how they are changing, for this determines how patients or clients have acted in the past and how they may react to scientific advice.

In poor and remote areas, international pressures on the costs of training, and limited local budgets, so restrict scientific health care that it still cannot compete in convenience - and probably not even in safety - with traditional systems: an injection given by a nurse or sanitarian in a private clinic, or medical advice by a scientifically trained doctor seeing more than twenty patients an hour, is less convenient, and not necessarily safer, than the services of traditional doctors. Yet, if the traditional practitioners are to be incorporated in a referral system, scientific doctors need to be trained to understand their strengths and weaknesses, their beliefs and method of training, and their contacts with the uneducated population; but international standardization both increases the cost of scientifically trained doctors and makes relationships with traditional practice more difficult.

Midwives have, in all the countries, been persuaded to undergo some relatively brief retraining, which has greatly improved rural sanitary conditions in childbirth. This has encountered little opposition from Western-trained midwives, who practise mainly in public hospitals or for middle-class mothers. Traditional midwives need not change appreciably their beliefs about childbirth, provided some proved sanitary techniques are used, and a habit of referral in certain kinds
of emergency is cultivated. Similar modifications of traditional medicine could be equally useful in restricted fields. They are being made economically more necessary and technically more difficult by inappropriate standardization of scientific medical technology.

(c) Current questioning and analysis. Medicine is the one profession where, in several of the countries, the sense of being 'trained for export' and an increasing awareness of the irrelevance of the international pattern to local professional needs has begun to affect all levels, from deans of teaching schools to young students. This dissatisfaction has not become the majority opinion of the profession anywhere; but only in Taiwan can it still be regarded as negligible.

In part this malaise is due simply to recognition that the effort to escape falling incomes by more specialization has reached its limit. Individuals may be willing to look forward to a permanent career abroad, but the profession as an organized body can hardly accept migration as a normal solution. There are still those who try to blur the issues: arguing, in Thailand, that the brain drain is unreal, or in the Philippines that it is simply an aspect of the international division of labour. Sometimes the pressure is to raise medical standards still higher, effectively limiting the service that can be given.

In medicine, however, it is difficult to avoid facing the universality of the need and the danger to health everywhere from low medical standards anywhere. The doctors, the hospitals and the drug companies have created both a massive demand for more widespread, Western-type medicine, and political pressures to create a profession that can provide this.

Most of the remedies suggested fail to meet the situation, mainly because they do not face the real problem, the incompatibility between the international structure of the profession and the local level of average income. In Thailand the king has organized a volunteer corps of young doctors for rural areas, and in addition three years of compulsory service to the government are being required of new doctors. In the Philippines a system of medicare has been introduced accompanied by salary increases for rural doctors. Predictably, in both countries, strong ethical appeals to patriotic sentiment have been made. More to the point is the
adaptation, in the Philippines, of medical curricula to emphasize community medicine. Malaysia has recruited, for government (mainly rural) posts, several batches of foreign doctors, whose qualifications have been only temporarily accepted.

These are all partial contributions to the problem. However, to achieve professional commitment, at a level of earnings that can be afforded from a low national product per head, it is necessary to provide at least one of three things, and preferably all three: first, deliberate selection for the appropriate commitment from a field much wider than those selected, next, training deliberately designed to foster commitment, and finally a level of income in relation to alternatives available which will suffice to enforce continuing professional discipline. All this means that the doctor must not be selected from those who are already dear because they are scarce and mobile, and his training must not greatly increase his mobility, but rather fit him for a locally relevant profession, in which those who are selected and who succeed in their training will be paid much more than those who fail, so long as their licences are renewed.

Clearly the international model neither selects nor trains such a doctor. He can be selected and trained, but only if the existing professionals can be induced to redesign a profession better suited to local objectives.

Accounting

The accountant's role in development is to help increase the possible scale of economic institutions and of markets. He creates reliable records and assets that can be pledged, bought and sold, and thereby extends the possible scale of firms and markets. The reliability results partly from technique, partly from an ethical code, and partly from institutions bringing pressure to bear on individuals.

(a) Technique and responsibility. The technique was an early consequence of the scientific revolution of measurement, a series of principles and conventions based on the algebra of double-entry and the logical consequences of maintaining a capital sum intact. Reliability in this sense is technical: a consequence of objectivity, logic and impersonality, with the professionals, as adepts in the technique, at the apex of the system.
There is also, however, a moral aspect, the fiduciary position of the accountant, and the independence of the audit. These are apt to be sensitive topics; most cultures have their own arrangements by which exchanges of present for future goods or services can be reliably carried out, and any implication that the scientific world's impersonal, capitalist (or socialist) techniques are morally superior is rightly resented. In human terms the moral superiority of one who values his financial or party reputation more highly than his obligations to his long-term business associates or family is far from obvious; yet the impersonal market system (or impersonal socialist system) that seem to be needed for economic development secure their effects by making these matters important moral issues.

In capitalist society the fiduciary requirement means that an accountant must be trained to be unusually scrupulous about the accurate recording of financial transactions: his skill is significant - even as a control technique - only if accounts truly record transactions. If he is to practise his profession genuinely he must investigate, and not sign any account unless he is satisfied that the books have been properly prepared and correctly record what they purport to show.

This aspect of the training is important in economic development: the accountant must not only design a book-keeping system but be satisfied that controls ensure that all the items will be recorded; thereby he substitutes an impersonal and specialized system for one based on personal relations and makes economies of scale possible. If the accountant does not check detail, the whole system becomes fictitious and useless. This is particularly important in economic systems where objectivity is not the prevailing basis on which confidence is built, for example where confidence mainly depends on close personal relations rather than on verification.

In countries where both the accountancy profession and verifiable records as a basis for confidence are new, we may enquire whether all accountants, or only auditors, need some institutional independence. Should every accountant be trained and disciplined to accept employment only where his tenure enables him to refuse to sanction records that he considers invalid? Should the auditor mainly ensure that the accountant has the independence and the skill, and has acted properly? Or is the accountant simply a servant
of the management with no obligation to see that accounts are properly maintained? Is the auditor responsible to verify the reliability of accounts only because the law requires an independent audit, so that his responsibility to preserve his independence rests on this legal requirement?

In the industrial countries this is not an important issue. The industrial accountant certainly has less independence than the public one: in relations with auditors he will often defend the company's procedures, but he will be aware of auditors' probable reactions and influence company policy to anticipate them. His role in such countries is not an educational or developmental one; accounting principles are generally accepted and the basis of trust is, mainly, verifiable assets, verified by auditors.

In the less-developed countries, however, such problems are important. The profession tries hard, almost everywhere, to show that auditing of public companies conforms to international standards. Though international firms still do much of this work, countries appreciate that, unless foreign capital willingly accepts local audits, legislation to impose them will seriously restrict the supply of foreign capital. Yet all the accountancy professions aspire to do this business. Local firms, however, unlike the international ones, need to do a large volume of local (often unaudited) business in which they have no power to check, and must disclaim responsibility for, the factual basis of figures prepared for their clients.

This ambivalence leads to controversies (as for example in the Philippines over the jurisdiction of the Certified Public Accountants' Board of Examiners over government accountants, or the compatibility of management advisory service with an accountant's independence) and to problems in drafting accounting codes, as in Thailand, or rivalry between different institutes, as in Taiwan. For public recognition and control are desired, not only for those doing audits exclusively; but the profession is unwilling to be made to conform in all its business to international standards.

(b) Roles of accounting. In Southeast Asian economies accounting performs many different functions, and governments' control over it also varies, depending partly on the character of the government and partly on the balance between British and American influences. First, accounting plays
an important validating role in the long-term capital market, through auditing company accounts, mainly in Malaysia, Singapore, and the Philippines. In Thailand and Taiwan outside finance through public limited companies is less important. Professional accountants have also, historically, played an important role in Singapore and Malaysia in providing - in competition with agency houses - secretarial and management services to plantations and mines financed from overseas. Such work existed in embryo in Thailand, but never developed because official policy discouraged all plantations, and mines outside the southern area (where they were mainly controlled from Singapore or Malaysia).

Accounting plays a validating role for short-term capital in the Philippines where it is used as a basis for bank loans. Throughout the area widespread training in book-keeping and financial management has helped to make a modern banking system possible. Accounting techniques, including both book-keeping and audit, have been important in the co-operative movement in Malaysia and Thailand and in the Farmers' Association movement in Taiwan, though the profession in general has taken little interest.

Much more important is the role of accounting in government. In both Malaysia and Thailand strict supervision of accounts, organized by British advisers, was used as an instrument of detailed control. Integrity in administration was secured by Treasury scrutiny, however, rather than by a general audit, which limited the importance of trained accountants in the government, in comparison with the American system.

Malaysia and Thailand also use accounts as an instrument of taxation. Income tax collection in Malaysia, and the requirements of the Accounts Law in Thailand, make it obligatory for many small businesses to submit accounts annually, in accordance with local forms (both originally based on British procedure) to the tax authorities. When the businesses are not public companies these accounts need not be

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2 Confidence in the banking system, however, depends more on central bank inspections (Davies, 1960:33, 120-1, 137) than on auditors' reports.

3 In Malaysia a recent reclassification (Suffian, 1967) reduced the range of government posts requiring accountancy qualifications; in Thailand more accountants are being recruited.
audited by a public accountant; but this business is such a high proportion of all accounting that only the most successful public accountants can avoid being involved in it. These accounts contain much fiction - how much, it is naturally difficult to determine precisely. Enquiries have, however, suggested that the two countries differ substantially.

In Thailand there is very little pretence that the accounts are genuine. Unless the business has very powerful protectors it will be expected to pay a reasonable amount of tax in relation to the nature of the business, and some accommodation to the tax official. The manager, not the accountant, is responsible. Plausible accounts, in proper form, reduce the likelihood of trouble; but the accountant is a technician, setting out the figures as provided to him. Any accountants can do this business.

In Malaysia, on the other hand, while government corruption exists it is believed to be rare in the income tax service; tax accountants have to be licensed and some licences are withdrawn: a good deal more is expected of the accountants. It is recognized that the accounts are specially prepared for taxation purposes, especially as (in most small businesses) the day-to-day accounts are still kept by Chinese methods. Accountants, if they are not auditing, are not required to verify the figures supplied, but they are held responsible if they knowingly assist evasion (as distinct from legal avoidance).

Broadly speaking, in Malaysia, the responsibility for verification imposed on an auditor differs (as in Britain) from that imposed on an accountant preparing accounts for a client, for taxation or other purposes; but Malaysian conditions give this distinction a different ethical and social impact: the accountant, in his normal contacts, constantly encounters systematically fictitious accounts and must do his best with them. If the proportion of such work is high (as it is in many small firms) the effect on the training of attitudes among new accountants must necessarily be significant. Yet the professional association does little to make accounts as a whole more systematic and informative.

In Taiwan and the Philippines tax advisory work is also important; but there the accountant is expected, as in the United States, to verify the substance of all accounts that he signs, and to present a true and fair view. Even in tax work, it is regarded as a reflection on his integrity if
another checks the reliability of an account which he has signed. This rule has not increased the reliability of the accounts, but undermined the seriousness with which a public accountant's signature is taken in Taiwan and the Philippines, even on audited public company accounts (which are given some limited credence even in Thailand). Clearly, in both Taiwan and the Philippines, only accounts audited by international firms are taken seriously, by the private sector or by government, without rechecking.

(c) Chinese accounts. One reason for Western accountancy's weakness in Southeast Asia is its continued failure to replace the Chinese system in the actual operation of most small businesses. We are not here confronted (as in medicine) with a different professional discipline with its own intellectual structure and code; there is no professional organization, no sophisticated system to match double entry or depreciation systems. Chinese businesses that wish to command more money and manpower than one individual can control need Western accounting techniques. Even in fairly small-scale business the Western technology may be slightly superior; but it fails to replace the Chinese system mainly because small-scale Chinese business is very much involved with Chinese culture, including relations of kinship and locality. Western accounting concepts tend to be related to Western education, with higher salary expectations and some cultural alienation. Yet so long as accounting technology does not penetrate the actual workings of Chinese business, which plays so important a role in Southeast Asian economies, it can hardly acquire a genuine local basis.

The importance of the Chinese system of accounts, in rendering so high a proportion of the accounting of small businesses fictitious, should not however be exaggerated, as the example of Taiwan shows. Here, Western accounting was introduced via Japan, without any marked orientation to Western culture, and penetrated small business much further. Indeed it is an important feature of Taiwan's aid to agriculture in other Southeast Asian countries, for farm-management-oriented accounts are a significant part of the techniques that Taiwan agricultural teams introduce overseas.

Taiwan accountants have not, however, been able to prevent widespread fictitious accounts. Indeed, if taxes are levied (as suggested) on the assumption that accounts show only about one-third of true profits, the situation may be worse there than elsewhere in the region.
(d) Suggestions for reform. Leading accountants in all the countries — particularly university teachers of accounting — are worried that banks and businesses lack confidence in the reliability of certification or auditing by local accountants. Professional associations have done little to improve the situation, but their different suggestions for improvement deserve comparison.

In the Philippines the emphasis has been on training — higher preliminary requirements and more difficult examinations. Only recently has attention been given to practical training in approved firms, and even now, because suitable firms are hard to find, an academic loophole has been allowed.

In Malaysia the scarcity of positions in which articles can be taken is the main factor limiting entry. The strict requirement of articles for three to five years (according to academic background) is defended on the ground that codes of conduct are in fact assimilated through them; and firms may take only about four articled students per partner.

This strict control over entry to the profession, particularly the three full years of articles for graduates, has led to much criticism of the profession for restrictiveness; there is comparatively little public concern about integrity and thoroughness in auditing. The profession has, however, pushed through legislation that will in future sharply restrict those who may prepare tax returns or even accounts for anyone other than a full-time employer. While there may be some justification for licensing tax accountants strictly, the wide scope of this new measure virtually requires that all firms must employ, full-time, someone qualified to keep accounts in English or the National Language. In view of the acute shortage of qualified accountants, this cannot fail to aggravate existing difficulties, for no apparent reason except to exploit a monopoly.

In Thailand the reformers wish to register all accountants, not merely auditors, and to improve the preparation of accounts, not merely their audit. Most licensed auditors now sign, or defend for tax purposes, many accounts. Reliable auditing is considered impossible so long as the standard in preparing accounts is so low; and if certified public accountants are required to observe stricter standards in preparing accounts than uncertified ones, the business lost will be greater than that gained by any possible
increase in international business.

The most interesting reform advocated is in Taiwan: an amnesty for past false accounts and a lowering of taxes to rates bearable with honest accounts. No government, not even one sincerely against corruption, could grant such an amnesty without detailed plans by the accountants to enforce new discipline. The profession probably advocates it to preserve its reputation, in face of widespread awareness of the prevalence of false accounts.

(e) Role of international business. The lure of obtaining, through legislation, a share of the lucrative accounting work now done by international firms has undoubtedly encouraged some accountants to seek reform of their profession. However, such international business is small in comparison with the number of accountants now being trained even in relatively restrictive countries like Malaysia. Nationally, the sums involved are not significant. What is important — and at present unlikely — is that the inducement which this business offers should help accountants make financial records in Southeast Asia more reliable. More reliable financial records, through relevant training, strict professional discipline and conscientious audits would no doubt bring the countries' accountants more international business. But this is plainly not providing enough inducement for those who can promote change to do so.

Influences that would favour reform would be first training accountants in the techniques and advantages — in the condition of their own country — of reliable recording; next, introducing sufficient discipline to discourage auditors and accountants from transgressing the norms of accurate recording; and finally, ensuring by law and custom that accounts were prepared mainly in conditions where accuracy was beneficial.

Training is rendered irrelevant when text-books produced in the United States or Britain are used. The prestige of foreign companies influences training in all the countries in this direction, particularly in the Philippines and Malaysia where teaching is in English.

Professional discipline consists of both rules and sanctions. Any universal rules favouring reliability will tend to be fostered by attempts to secure international business; but rules to help resist special local pressures
may be underemphasized as a result of international contact. Emphasis on avoiding competition between accountants may be excessive, while that on independence, avoidance of conflict of interest, and corruption of officials may be neglected. However, it is the profession's own sanctions for professional conduct which are most seriously affected by the prestige of irrelevant examples.

Sanctions of the local professional associations have, in all the countries, been very weak. The profession always claims that the aim of registration is protection of the public; but in fact in all the countries concerned (except perhaps Malaysia) it feels vulnerable to international exposure of what actually occurs, and is unwilling to name names and expose evidence. Regard for the profession's international image leads not to strictness but to good fellowship and a desire to create a good impression.

Law and custom regulating account-keeping are both related to international practice, but unequally. Custom is strongly influenced by the prestige of international companies and leads to unreal and unhelpful accounts, kept mainly for show. The legal pressures on keeping accounts are not mainly the result of the profession's international contacts. The requirement to keep accounts is an instrument of pressure on the small Chinese trader in Thailand; less openly it is an instrument of taxation in the Philippines, and of taxation and cultural assimilation in Malaysia; the 'super-accountant' in Taiwan is a government official for whom the preparation of business accounts has no relevance at all to the firm's efficiency and is solely an instrument of corruption. Reliable systems of accounts would, in all the countries, make firms lose more in taxation or corruption than they could gain in efficiency. These requirements to keep accounts have little to do with the international contacts of the profession. Most of them were introduced not by the profession but by politicians, for a mixture of political and private motives.

The requirements of international business have on balance hindered rather than helped the promotion of a generally reliable profession, and have not promoted competition in achieving a reputation for reliability.

(f) Professional bodies and discipline. There has been competition between rival professional associations, but this has not taken the form of rivalry in strictness of
discipline. In accounting it is often hard to establish a single national association. Professional goals are not easily achieved by direct government regulation: accountants, as tax agents, have secrets to keep from governments, and governments, in turn, rarely have the financial integrity to discipline accountants; yet, without some government control, an accountant disciplined by a professional body can always leave it and join (or set up) another. Generally the method of regulation is a compromise between direct government regulation and recognizing one professional body as the sole competent body and giving it power to make regulations.

Thailand comes nearest to direct government discipline by a committee, with professional representation, set up by the Department of Economic Affairs. The professional association nearly split when registration of auditors was introduced: some auditors wanted a separate society from other accountants. Since this move was defeated the professional association has exercised no discipline, since its unregistered members are subject to no controls. In Taiwan discipline has suffered by the division of the profession into mutually exclusive institutes, the aggressively expansive Taipei Institute of Accountants with many unqualified members, and the more conservative China Institute of Accountants.

Malaysia was involved, in colonial times, in the attempt by rival accounting bodies to attack the Chartered Accountants' policy of restricting training to the United Kingdom by conducting training in the colonies and so breaking their monopoly (Johnson, 1971). Thus, at independence Malaysia had many accountants recognized by different overseas professional bodies. These, however, closed ranks after independence by forming the Malayan (later Malaysian) Association of Certified Public Accountants, a defensive organization concerned with protecting the profession as it was then organized. It failed, after 1965, to preserve a joint organization including Singapore, mainly because of firm opposition by the Malaysian government to allowing non-residents to practise in Malaysia. Separate institutes were set up in Malaysia and in Singapore, and the Malaysian Institute of Accountants was immediately dominated by the Malaysian Association of Certified Public Accountants (for example a count of those registered as auditors by MIA showed over 80 per cent were members of MACPA). Unlike the Singapore body it continued to insist on three years of Articles with a member firm even for graduates in accountancy.
In the Philippines the board of examiners exercises control. The Philippine Institute of Certified Public Accountants has succeeded in remaining, since it was founded in 1929, the leading professional association for accountants; it nominates (in effect) the board and sets the code of ethics which it administers. The profession has, however, other associations; and many of the vast number of Philippine accountants are members of none.

(g) Possibilities of international assistance. How could international contacts assist the profession to develop towards greater reliability?

The different role of accounting in most less-developed countries, from that of Chartered Accountants in the UK or Certified Public Accountants in the USA must be remembered, if accounting is to make an effective impact on development. Sophisticated accounting as a method of organizing relatively large-scale business had existed for centuries in Europe before Chartered Accountants became necessary. The Chartered Accountant met the need for a reliable authority to ensure that, when accounts had to be presented not merely to the owners but to the general public, buying or selling shares in a particular company, they would be intelligible and fair. In most of the less-developed countries this is not the main development need.

Foreign capital is, indeed, important in these countries; but it does not usually take a form which badly needs reliable local accounts. Most foreign equity capital is direct investment by overseas companies in local subsidiaries or particular ventures. Audited accounts are necessary, but the audit must satisfy an overseas management. Such an audit will have no effect on the local development of a capital market unless the whole system of objective and impersonal accounts has been accepted as a part of the local culture.

In principle, of course, if local accounts become reliable, and companies' assets acceptable as stores of value for ordinary people, the scope of markets will expand, division of labour proceed further, and markets become more prosperous. Because this could generate opportunities for growth, overseas investors might reasonably foster more reliable asset valuation; but too many foreign investors in the less-developed world benefit from having a virtual monopoly of overseas capital in a particular field. If a reliable capital market
is to be stimulated, it will probably have to be done by educators, aid agencies or perhaps political leaders.

The roles of accountant and auditor in less-developed countries should be primarily educational and developmental. The accountant should promote clarity and integrity in business, the auditor improve the system on which he offers opinions. Professional commitment must therefore be the essential quality of an accountant; and if he is to operate as widely in the economy as possible, he cannot be too expensive. Imitation of highly sophisticated overseas procedures, with accounts in international languages, dealing with elaborate procedures of depreciation or allocation, is clearly inappropriate. For the accountant needs to be both well-paid in relation to the alternatives available to him (so that he will value his licence and observe professional discipline) and also relatively inexpensive to each client, without too large a number of clients if he is to be thorough. Yet he must have literacy, accuracy and punctilious industriousness. Such a combination is attainable only if the accountant's alternative options are rather limited, with only moderate talents in the expensive areas, such as knowledge of international languages. The profile required is one of very strict selection on grounds of character, strongly enforced discipline, numbers limited by exacting personal requirements, and yet an income high in relation to the alternatives available and hence a comparative lack of other highly marketable qualities.

This is, in many respects, a very different profile from that required for the auditors of international companies. However, a country wishing to use the lure of selection for such positions, as a means of training its own accountants and auditors, could offer a higher professional grade, based on linguistic proficiency and sophistication, but only to those with an unblemished record of practice over a good many years.

Civil engineering

To keep the country studies within reasonable bounds attention has been focused on one branch - civil engineering - but its scope could not be defined in exactly the same way in all countries. As an economy's resources increase, it tends to produce more types of specialized, first-degree engineers, as well as some post-graduate specializations.
In addition, as all these countries have used foreign aid both in training engineers and in engineering projects, forms of practice or of training have sometimes become appropriate at lower levels of development if, for any reason, aid for that form was more available than for others. In Thailand irrigation engineering was, for historical reasons, an early specialization; the Philippines, as professions mushroomed, readily imitated many new American specializations. Roughly we may say that irrigation, sanitary, highway and construction engineering are not excluded from our definition.

Unlike mechanical and electrical, civil engineering is largely concerned with publicly owned structures. Often, because these are specialized or technical, private companies undertake the construction, but usually the public pays for their building and use through taxation. Many (e.g. highways, sewerage works, irrigation structures) are important infrastructures for economic development and their efficiency, safety and durability influence the whole development process. The civil engineer is trained in the techniques of erecting these structures, but his function is not only technical: he is needed to protect the public interest, to check that the materials used and the care with which building is done ensure a structure economic to maintain and safe to use. The sums needed to build well rather than badly are large in relation to normal personal incomes in the less-developed countries.

(a) Need for special qualities. In any analysis of the development effects of civil engineering in less developed countries, we must stress that the need for professional commitment is exceptionally great. In a developed country things can usually be arranged so that the chance of financial loss, of salary and prospects, from taking a bribe (say, to wink at inadequate materials) is a sufficient deterrent for most engineers in comparison with any likely gain. It is virtually impossible, in any less-developed country, to make acceptance of bribes on balance a losing proposition. Some engineers in such countries do, of course, resist the temptations of corruption - those who emigrate commonly cite a desire to earn a professional income honestly as a reason - but their selection and training must be a much stronger influence toward professional commitment than those in richer countries, because of the pattern of income distribution and the novelty of professionalism in their culture.
Need to devise new techniques is also much greater in the less-developed countries. General lack of capital and skill and a need for many small rural undertakings commonly mean that necessary projects can be carried out only if some new method can be found using available and cheap resources of equipment and skill. The market is disorderly, with discarded aid goods, or unrepaird machinery, or pockets of cheap skilled labour, to be found in unlikely places, as well as with widely different prices from those elsewhere; and the successful engineer must be skilled in finding novel ways to meet the special needs. Only rarely will the most efficient way be one that can be learnt from a standard textbook.

In principle the local government engineer should show corresponding flexibility, but guard against adverse effects on safety, maintenance costs and other public interests. In practice, the conditions for controlling corruption are so unfavourable that controls tend to be rigid and formal whenever they are honestly enforced.

Why are safety and maintenance standards not worse? Since, in all the country studies, corruption of the engineers who control permits and inspect performance is reported, what prevents competitive pressure from lowering performance and standards much more? Few large buildings, bridges or dams collapse. Maintenance is certainly poor, but one might expect much worse.

One explanation may be that a high proportion of the corruption is a form of taxation, raising government engineers' earnings above an unrealistically low level, without any return to the briber. Permits may be given only to those that meet policy requirements, but delayed if a bribe is not given; specifications for a tender may be adjusted to the advantage of the selected firm only, but a share in its gains be demanded. More probably, safety and maintenance may indeed deteriorate, but wealthier countries may allow a considerable margin, and imitation of such countries' general procedures, with relatively little skill in innovation, ensures (at least temporarily) that relatively little harm results. This would not necessarily mean that it was wasteful to employ a government engineer at all, whether he tried to enforce standards or not; failure to enforce them over a long period will generate dangerous innovations and diminishing safety.
(b) **Training and international influences.** Civil engineers, like doctors and accountants, are increasingly being trained through English language text-books as members of an international profession. However, engineering practice differs in several ways, notably in the special role of international firms.

**International firms** influence training in several ways: they want to employ local graduates who are good substitutes for foreigners and can be sent for further training overseas, and therefore try to ensure that their initial training follows norms that they know and understand. They support the idea that engineering methods and standards are international, though in fact their own relative advantage is in the larger, relatively capital-intensive projects, and in those where recent technical knowledge is relatively important, while in small, labour-intensive projects and those in which local market knowledge is relatively important, local firms should have a relative advantage. Their own size and power to influence overseas travel and other avenues to promotion, create aspirations everywhere to compete in their own preferred techniques.

Of course, in engineering as in medicine and accountancy, local forces also make the training in professional ethics a training for export. Training institutions are naturally mainly staffed by people with some advanced training overseas. This would be an advantage if, before they left, they were selected and trained to study abroad with a view to local application, and if when they returned they had reasonable freedom to adapt and to apply. However, the twin pressures, to supplement incomes by consultancy and additional teaching, and to conform to foreign syllabuses, tend to deprive them of time or inclination to innovate. Since the institutions, to which foreign courses attempt to generate commitment, are quite different from local ones, with different challenges, rewards, temptations and sanctions, their effect is inevitably to generate cynicism locally or a desire to practise elsewhere.

**Variation from country to country** in the nature and extent of the training is considerable. Broadly speaking Malaysia and Thailand have kept the numbers trained fairly small and graduates are mainly working as professionals. The brain drain is not serious, but there are great difficulties in carrying out the many necessary small rural projects: professional structure is designed for large capital-intensive
projects, and this affects the sub-professionals also. Increasingly sub-professionals are being trained to apply advanced technology: the number available to adapt equipment to local conditions is probably actually decreasing in Thailand, and not increasing fast enough in Malaysia, while the number who can service new and expensive foreign equipment increases.

There are, however, substantial differences between Malaysia and Thailand. First, engineering training is much more severely limited in Malaysia. Only during the last five years of British rule were engineers trained in Malaysia itself, and up to World War II virtually all engineers were expatriates. The first Malaysian training set very high standards. Pressure to increase numbers was not strong and the profession exerted substantial pressure to keep local standards fully as high as those of the United Kingdom. Naturally also, a new university department was particularly anxious to create a good international reputation for its students. Student failure rates were over 50 per cent. After independence the policy changed, with a good staff-student ratio, a lower failure rate, better equipment, and modification of the curriculum on the basis of staff experience in many different countries. Intake, however, remained low, increasing by less than 50 per cent (from about eighty per year to about 120) since the early 1960s, while the University of Malaya's whole intake has trebled and two other universities been established; only in the last few years has the National Institute of Technology begun to upgrade its best technical students to take engineering degrees.

This limited intake is not a matter of student preference. Next after medicine and science more students put engineering than any other faculty as their first choice. The standard of school achievement required to enter is clearly higher than is usual even in industrial countries. Why has so high a standard of entry prevailed in spite of strong pressure to increase the number of engineers? Vacancies for civil engineers in the three main government departments employing them were about 30 per cent in 1971 (164 out of 487 posts).

There may be unconscious bias in favour of contractors of the international type, in preference to the more ramshackle adaptation to local market availabilities (and the accompanying greater difficulty of supervision) of small-scale Chinese contractors. Certainly in other engineering the international industrial sector influences government thinking
more than the local, mainly Chinese-owned, one. Naturally, the usual forces favour the 'international standards' concept; what needs explanation is the absence of any considerable pressure for adaptation to local conditions.

The failure to adapt, however, has unfortunate distributive effects. Minor, rural posts are harder to staff than the major projects or urban development or inter-urban highways: rural posts lose engineers to private companies. This, together with failure to modify high-cost techniques, is a brake on rural development, which partly offsets the political pressure to promote it.

On the employment side, also, failure to adapt gives a high relative advantage to those — predominantly non-Malays — with first-rate English education, not, in this case, because an English-language background is favoured, but because any strict selection on the basis of school learning produces a very low proportion of Malay students, as a result of the weak secondary education of Malays. Malay students have always shown considerable mechanical aptitude, and a different set of criteria would probably not have produced a lower proportion of Malays in engineering than in any other faculty.

Malaysia has produced a highly professional group of internationally oriented engineers with high productivity and earnings. Because of a late start and restrictive entry conditions, graduate unemployment has not emerged. Rural development has been delayed mainly by staff shortage; but graduates are so highly priced that if output expanded financial constraints would become significant.

In Thailand training (for the railway) began much earlier; the influence of international companies led to training for a British-style degree; later increasing American capital development after World War II and availability of American funds for higher studies produced American-style training.

The demand for places in engineering comes next to that for places in medicine — it is clearly still, as it has been since the later railway period, a prestige subject, and probably therefore attracts high quality entrants. Teaching conditions are, however, much less good than in Malaysia. Corruption is obviously far more prevalent in Thailand than in Malaysia and government salaries form a much smaller proportion of total earnings. However, the expansion of first-degree courses to six is recent enough for the number of
graduates to remain inadequate to the expanding need. Graduate unemployment is not yet a major problem.

The Philippines and Taiwan provide a strong contrast to Thailand and Malaysia. In both there has been a massive expansion of graduate numbers, many graduates not working in professional positions, and a substantial brain drain. Many private institutions train engineers and - in the Philippines - have done so for many years. 'Surplus' engineers are mentioned in both countries, though in Taiwan this refers to the brain drain while in the Philippines underemployment - employment below the level for which the engineer is qualified - has attracted more attention.

In Taiwan engineers as such have low status and must qualify as architects to be recognized as professionals. They have neither a professional association nor a register; standards are ineffectually controlled through contractors. Other universities and colleges imitate the curriculum of the National Taiwan University which in turn imitates American models and uses American texts; training institutions seem to form a hierarchy based on the number of students qualifying to go abroad, with the National Taiwan University sending about four-fifths away and training institutions as a whole about one-quarter.

The actual proportion of Philippine engineering students going abroad was estimated in 1969 as about one-quarter, roughly the same as in Taiwan. These also are probably the most successful students. However, because the profession is more closely regulated, with Boards controlling the practice of engineering, the lack of professional posts for many engineers has attracted much attention: about a fifth of engineering degree-holders are neither in professional nor managerial occupations.

This has not, however, led to any new structure for the profession. Engineers seem to have followed doctors and accountants in trying to raise admission standards, taking a lead particularly in the accreditation movement. This movement, which at present lacks special criteria for accreditation, and will probably at first merely apply 'international standards', may ultimately undertake a complete re-evaluation of the kind of profession required to meet Philippine needs; but present indications are that this may take time.
(c) Adaptation to local conditions. There is much more Southeast Asian interest in adapting curricula to make engineering more relevant than in modifying the profession's structure. This interest is still fairly recent, and has done little yet to modify actual teaching and resist the influence of the foreign text-book. Before 1970 the question was little discussed outside the Asian Institute of Technology in Bangkok and the Jakarta field science office of UNESCO.

An initiative taken by the Committee on Engineering Education of the World Federation of Engineering Organisations led to a regional seminar in Kuala Lumpur in March 1970, on New Approaches to Engineering Education in Asia, which adopted a recommendation to establish a permanent conference of Southeast Asian engineering educationalists. The field science office of UNESCO in Jakarta followed this up by arranging in Jakarta in 1971 a meeting on forming a permanent committee on engineering education; representatives of Indonesia, Malaysia, the Philippines, Singapore, Thailand, Japan, Australia and New Zealand attended. This meeting elected an Indonesian President, Professor Abdulmuttalip Danuningrat, and gave the Indonesian Institute of Engineers the responsibility to set up an interim secretariat. A draft constitution was prepared, to be ratified at a meeting in Manila in October 1973, when a formal Association for Engineering Education in Southeast Asia was finally established.

This association could, in principle, generate new and more relevant curricula, but it cannot be said to have made as much progress as might have been hoped, or even to be moving in a helpful direction. Japanese, Australian and New Zealand members have not emphasized the radical difference, in social structure and available resources, between themselves and the rest of the region, but rather suggested that such a professional grouping should mainly emphasize professionals' common problems; but it is precisely this emphasis which isolates professionals from their own less prosperous communities; and wealthy countries in such an association need to prevent their wealth and their professional structures (adapted to their own needs) from distorting technical innovation in much poorer countries by irrelevant competition and imitation.

In the main, the Association's Journal - the Journal of Engineering Education in Southeast Asia - sees adaptation to local needs in terms of differences in climate, soils and
environment. These are, indeed, important, and there is some hope that, the more engineers are trained to turn away from study of the latest text-book and recognize the need to allow for earthquakes or climatic differences, the more likely will they be to adapt their practice also to their populations' poverty, great inequality in wealth and power, and unfamiliarity with the assumptions of professionalism. Yet so far this emphasis is neglected.

In Malaysia, where the original conference was held, the regional ideal was very much in the spirit of the Association of Southeast Asian Nations: Southeast Asia was a viable regional unit, in which different countries, separated by different colonial traditions, could co-operate by eliminating irrelevant historical differences. This motive sufficed to stimulate some desire to adapt curricula, so that engineers could help to fulfil national goals. However, there does not appear to be much desire for major changes. The curriculum stresses the basic training in applying engineering techniques and assumes that this training will produce students, in Malaysia as elsewhere, who will adapt to the needs of the situation. It is doubtful, however, whether this is a sufficient revision in Malaysia, where suspicion of small-scale Chinese business has led in the past to so heavy a concentration on international firms.

In principle the Indonesian members appear to be more aware of the need to adapt technology, but the main initiative in this direction has come from the Asian Institute of Technology in Bangkok. As we have seen, this is wholly a regional English-language institute, committed to the profession's international structure. It can hardly be expected to make any contribution to modifying the profession's basic structure to conform better to Southeast Asia's needs. However, this institute has produced the main thinking about adaptation both of research and of curricula to the region's economic and social structure.

In the Philippines adaptation even to the region's climatic and environmental requirements has not yet had much impact, except in the University of the Philippines. Adaptation of teaching to encourage labour-intensive techniques has, however, been specifically mentioned among accreditation criteria, and with increasing anxiety about the 'brain-drain' in engineering, a local orientation, analogous to the medical emphasis on community medicine, may become an object of accreditation policy.
The main factor promoting local relevance in Taiwan has been student theses and local investigation to produce them. With the decline in such theses, the influence of the international text-book seems to be expanding and adaptation of the training to local market conditions declining.

(d) **Discipline and standards.** Professional discipline is a problem in every country in the region. In part, of course, this is a problem of how the foxes can train fox-proof watchdogs. Just as governments can hardly police accountants' professional standards, because accountants engage in taxation-advising, so some intermediary organization is necessary to discipline civil engineers. In all the countries the government is at least expected to help maintain the safety of bridges, dams, etc. and prevent inferior materials leading to breakdown and waste, and must therefore set up some disciplinary machinery. In the Philippines discipline is exercised—but only when complaints are received—by the Board of Examiners for the appropriate branch of the profession; in Thailand the supervisory committee consists mainly of government engineers. Malaysia has for some years had its own Institute which controlled its own members, but also recognized some British societies; in 1972 it appointed also a Board of Engineers to supervise and regulate the profession. Taiwan has no professional supervision of engineers.

In all these countries the strength of international companies, in competing for contracts subject to international tender, depends more on presumed superior reliability than on supervisory skill; yet there are virtually no prosecutions or deregistrations of local engineers in spite of a strong desire to overcome this handicap. This suggests that the controlling bodies are well aware that the initiative for malpractice does not come only—probably not even mainly—from the professionals, but from the political and administrative side: the boards themselves may well be under some pressure not to be too strict unless abuses are actually made public in other ways, e.g. in earthquakes.

(e) **Specialization.** Premature specialization in engineering, though like that in medicine it results mainly from a combination of overseas training opportunities and falling local professional incomes, has different characteristics. Specialization could be a means of conferring independent professional status without a very long period of training:
an irrigation or highway engineer in a less-developed
country might be thoroughly trained in a limited range of
skills that would be needed in supervising relatively simple
irrigation works or roads, like early irrigation engineers
trained at Kasetart University in Thailand. More often,
however, specialization imitates either undergraduate or
graduate specialization in wealthier countries and exemplifies
the attempt of individuals to escape the downward trend of
professional incomes relative to national income per head,
by taking specialist qualifications for which there is no
local demand.

Whether or not the standard of specialist knowledge falls,
morale is bound to fall if specialists find no demand for
their specialized knowledge; and although a surplus of locally
trained specialists with less expectation of a high standard
of living may be better than a surplus of those trained
abroad, the real evil is the professional rather than the
personal frustration, and this can be only aggravated by
overdeveloping specialist training.

The frequent comment that Philippine professionals are
over-qualified illustrates this difficulty. Undergraduate
specialization could be an advantage if it were adapted to
the country's needs rather than producing someone abreast of
all the latest techniques in high-rise structures or imposing
dams. It is by no means essential that the latest scientific
discoveries lead to capital-intensive innovations; but the
first techniques developed are apt to be those appropriate
to rich countries, where an advantage can be secured by
quickly developing a new patent or recruiting highly trained
specialist technicians. Only if specialization at the
undergraduate level arises out of local development needs is
it likely to be beneficial.

(f) Engineers and technicians. This raises the question
of the engineer's role in the training of technicians.
There is an interesting contrast in the region between the
effect of doctors on the training of nurses and that of
professional engineers on the training of engineering tech-
nicians. Doctors, rather than nurses themselves or foreign
advisers on nursing, have emphasized a high level of training
for nurses in the most modern techniques and thereby created
a substantial brain drain of nurses. Professional engineers,
however, though hardly aggressive in adapting techniques to
local scarcities, have been a restraining influence on an
otherwise headlong rush to train technicians in the most
modern techniques. In both Thailand and Malaysia substantial foreign aid poured in to train technicians in advanced technical processes, and in both, the scientific knowledge required and the length of the training courses grew until degrees came to be awarded, and the technical institutions became universities: the King Mongkut's University of Technology in Bangkok (incorporating the university work of three separate technical colleges) and the Institute of Technology in Kuala Lumpur.

One explanation for the difference between technologists and nurses is that most technologists are men, in an industry with a long tradition of craft unions defending their status. But there are other reasons. Many businesses selling modern machines might gain a competitive advantage by having their government's aid finance the training of technicians who can service their own country's sophisticated machinery.

Professional engineers in the less-developed countries probably recognize their comparative advantage in small miscellaneous businesses adapting available materials. They badly need technicians with many innovative and adaptive skills, not highly specialized technologists who will benefit mainly their overseas rivals. Nevertheless, since they themselves want to compete for the 'modern' business, they cannot too vigorously condemn the trend toward these highly specialized technical engineers.

Overseas aid and loans tend to produce civil engineering skills appropriate to a developed country but not adapted to poor countries' needs. In poor countries professional values lack general appreciation, and governments can rarely control corruption. Yet professional selection and training rarely emphasize a high level of commitment but concentrate on technical modernity, which is apt to waste both capital and scarce skills.

Agricultural extension.

Agricultural extension would not commonly be regarded as a profession, in either more-developed or less-developed countries. It has no professional associations, nor any

4 This sentence refers to the extension workers themselves, the main focus of our study. Agricultural extension, however, includes also the research workers whom we discuss briefly.
appreciable brain drain. The present study included it for several reasons: first, its unusual importance in development — at least in some countries, and some periods in the development of most countries, attention to agriculture is critical; and except where the key agricultural sectors are all large-scale plantations, extension work is then necessary to promote both new inputs and other technical innovations. Next, since one of the study's main interests is in the effects of professionalism on rural life, agricultural extension is worth considering, at least to the extent that it qualifies as a profession. Finally, some problems that beset the other professions — problems of imitation, the desire to study overseas, and the technical inappropriateness of foreign patterns — appear to have some bearing on agricultural extension also.

(a) Required level of training. The important problem in agricultural extension is to work out a suitable method by which techniques and scientific information are brought in contact with the detailed needs of local farmers and detailed measurements of local circumstances, so as to generate change. There are many different ways in which techniques can be changed, and probably a good deal of untidiness, as in Thailand and the Philippines, helps by allowing different methods to compete.

The agricultural extension officer is the person in most direct contact with farmers — at least in passing on information. He may or may not also be a source of factual knowledge, to research officers and administrators, about farmers' needs, conditions, and environment. The essential thing is that he must be able to help farmers enough for them to be willing to try out his suggestions; and generally farmers in the less-developed countries are not accustomed to accept the kind of information that someone who does not do their job can usefully pass on to them.

It is difficult to know what kind of training and knowledge the extension agent should have. If he is to be able to cope, at need, with all the farmer's problems, he must have a wide range of scientific knowledge, and a capacity to diagnose in detail, in a previously unknown environment. People with such a range of scientific knowledge must have at least a first-degree education, and it is hard to achieve this without involving them in the whole complex of secondary education, entrance qualifications and international languages. If they are so involved they tend to be both urban in their
origins and too expensive to employ as widely as is needed.

Foundations and volunteer organizations can often secure good results with graduates, but even in the Philippines, where such enormous numbers graduate, it is difficult to employ enough graduates to cover the country, and virtually only areas which attract graduates can obtain service. Probably graduate extension workers should be confined to special areas where their cost is either unimportant or can be offset by special gains. Areas where cost might be ignored would include strategically or politically important areas, for example among mountain people on the borders of Thailand or East Malaysia. Areas where the gains from extra knowledge might justify the cost would include those where transport conditions are very difficult: the extension worker there must be a generalist covering all problems in his area — neither subject specialization nor frequent reference to head office is possible.

(b) Relations with research stations. It should go without saying that agricultural extension workers, whether graduates or not, should be in close touch with all research going on in their area. Unfortunately, it is not possible to count on this. Especially where the universities are training on overseas syllabuses and there is a high brain drain, even graduate extension workers may be totally unaware of the research currently going on in their own area. It is important — and at present unusual — for graduates to be given retraining in relation to local research when they are recruited into the extension service. This is even more important for non-graduate extension workers, since for them the experience of knowledge as mainly a process of finding out depends on contact with research that is going on.

Paradoxically there is some danger that relations of extension workers with research stations may suffer as a result of imitation of overseas extension systems where such relations are often close and reciprocal. Thailand is an example. American influence and extensive American training have established, in the minds of those planning extension work, a pattern in which the ideal is a graduate roughly on a par with the research workers, stimulating research workers to be relevant and helpful, as well as feeding them with factual information about current needs and problems.

This pattern would not work in Thailand without major social changes. For the foreseeable future most of the Thai
research workers are likely to be university-educated, largely trained on Western text-books; most of the extension officers are likely to be products of agricultural schools or colleges, and it is to be hoped that young farmers will be trained as assistant agricultural officers. With this difference in background it is essential to give a great deal of attention to the system of professional relationships: research worker and extension officer are not equal colleagues and the kind of relation that could work in America could not work in Thailand.

This is why it is so important to work out regular sanctioned procedures of interdepartmental and interprovincial co-operation, with regular training in co-operative activities that will generate the two-way flows of information. Research stations tend to be regional with no legal status in the rural hierarchy while extension officers can hardly avoid being deeply rooted in this hierarchy, as well as being responsible to a different department. With the transport now available, organization of detailed professional procedures, by which problems, new information and new techniques can be brought to bear on those who take action, is in most areas the key to achieving change successfully. The highly practical suggestions from the interdepartmental committee on rural manpower illustrate the importance of this fact.

Much can be learnt by comparing the experiences of Taiwan with those of Thailand. In Taiwan the colonial power was Japan which had recently gone through a process of agricultural development itself. Much effort was put into transport, marketing and rural land tenure from the beginning, but within three years of taking over the island the Japanese established a research station in 1898, and by 1907 a network of them covered the whole island (Myers, in Shand, 1969:39). Key research posts were kept in Japanese hands to such an extent that forty years later the departure of the Japanese seriously disorganized the research structure; but a great deal of effort was put into training extension workers in the research centres, and techniques for diffusion of new information through farmers' associations were worked out quite early. From the beginning the extension workers have been people with only a secondary education, but research has been thorough and detailed, and extension workers are kept in touch by almost continuous refresher courses, so that they constantly keep the farmers' associations abreast of new techniques and new responses.
American assistance to Taiwan has largely worked through revitalizing the system originally established by the Japanese. Even the research organizations were reconstructed without a great deal of either American staffing or training of Chinese staff in the USA. New ideas have been introduced partly by financial inducements and by suggestions made at headquarters, and partly by training key people in an organization to teach its members special new skills. Farmers' associations have been broadened and given more initiatives in policy, a system which worked well while development influence could be exerted through considerable foreign aid, but has tended to degenerate into factionalism and a spoils system in recent years.

Probably largely because of the rural location of most research institutes, the use of the Chinese language and the degree of orientation to local problems, agricultural extension and even research have suffered relatively little from brain drain problems.

Even in the Philippines the brain drain does not directly impinge significantly on the agricultural extension profession. Probably very few of those actually trained as agricultural extension officers in the high-level courses at the University of the Philippines and Araneta University, even those with degrees in agriculture or home economics, are actually using their training abroad. (Even since the 'green revolution' Filipinos working abroad in international agencies are a negligible proportion of those trained in agriculture in the Philippines.) Yet the impact of the brain drain on Philippine life certainly pervades its agricultural extension. The orientation of the whole education system towards the United States and the vast differences, not only between American farmers and Filipino farmers, but between the relation of the college-trained American extension agent to his farming community and the relation of the college-trained Filipino to his farming community, make for a great deal of frustration and waste.

Professionalization of agricultural extension is increasing. The aim is to raise the level of individual knowledge required and to create ultimately a Board of Examiners and an organized agricultural extension profession. Some of the best schools are taking a 'laboratory' approach to the extension problem and some postgraduate research is being done. However, the training of most extension workers is still highly oriented to the United States. The farmers they tend
to select are those who conform—in accessibility, standard of living, language and culture—most nearly to the types they have studied in their American texts. Nor is there any reason to suppose that as professionalism develops the lead will be taken by those with an approach based on local research. Extension grounded in local training related to local research would probably produce the best results; but bachelors' or masters' degrees based on American syllabuses can be taught by part-time teachers working in international firms; and such degrees will lead to greater mobility and security. It seems unlikely in the Philippines, with its strong links with the USA, that professionalism in agricultural extension will reject the road that other professions have taken, of restricting entry by high paper qualifications.

Summary and recommendations

(a) Summary. In the early days of the impact of professionalism on a less-developed country, professional incomes are normally high. The practice of the profession contributes something to economic development, and the high incomes induce many to try to qualify. The demand for professional services is not, of course, a function only of income; but as income levels rise the demand for health services, accounting, engineering services of all kinds, and advice to farmers will probably tend to rise for two reasons: first, people with higher incomes can afford more specialist advice, but also people will normally achieve the higher incomes only in so far as they use more scientific methods, and these are normally positively related to the use of professional services.

Patterns of economic development, as a consequence of contact with one of the major specialized and scientific economic systems, differ very greatly, even among the four rather similar countries covered in this study, all of which have received their major impetus to change, directly or indirectly, from the capitalist system of Western Europe. Neither the impact of higher income on the demand for specialist advice nor the extent to which scientific methods have contributed to rising income are sufficiently uniform in these countries to lead to very clear-cut generalizations. The demand for professionals does seem to have risen, in all the countries considered, more rapidly than real national income. In all the countries the supply of professionals has risen rapidly, with the exception of Malaysia, where
racial policies have partly prevented this.

In none of the countries except Malaysia does a shortage of numbers of professionals hamper development. Nor would it be correct to describe the situation as one of low quality in the professions. Competition for entry is intense, and in few of the less-developed countries can there be as high a proportion of genuinely idle and mediocre professionals as in the richer countries. There is a good deal of distortion in the competition, favouring certain class backgrounds and geographical areas, and some of this is certainly aggravated by the overseas orientation of the selection process. Even so, those who achieve professional status are certainly not of poor intellectual quality. The problems arise from emphasis, both in selection and in training, on inappropriate qualities, because the great inequality in incomes between countries sets up a demand for qualities that promote international mobility: inappropriate forms of professional commitment, inappropriate knowledge and inappropriate skills.

It would be wrong to make too much of the direct loss due to brain drain: only in some professions - medicine, accounting and engineering in the Philippines, medicine and engineering in Taiwan, medicine in Thailand - is the actual loss of some of the best manpower seriously harmful. The adverse effects on those who fail to go abroad are far more serious. These adverse effects extend throughout the professions and far beyond.

Inappropriate forms of professional commitment may well be the most serious effect. Professionals in rich countries often accuse professionals in the less-developed countries of lack of professional commitment, because of the prevalence of many practices less frequently found in rich countries. This is a misrepresentation. There is no lack of professional commitment among the professionals of less-developed countries. In general they have a strong sense of belonging to a separate professional culture with its own way of life.

5 On the other hand this orientation probably reduces other distortions - nepotism, cliques or tribes, bribery: it cannot be assumed that if a group of local professional enthusiasts attempted to organize a 'career open to talents' system based on national needs they would have as much power as professionals now have to resist non-professional pressures.
and obligations. Because their training is often largely in a foreign language and many of their practices differ quite widely from those of the local culture, the sense of professional identity is often much stronger than that of professionals in industrial countries.

The truth is that they have rarely been either selected for commitment or given any appreciable training in what is expected of them in the local setting. Training in professional ethics is commonly based on foreign texts, and their teachers, who usually feel they are underpaid and need to supplement their incomes, are often themselves somewhat cynical. Nevertheless there is usually a strong sense of professional standards, and cynicism is commonly directed towards the politicians and administrators of their country, whom they consider responsible for such phenomena as private clinics operated by government doctors, 'kick-backs' to government engineers, etc., because salaries are low and 'proper' (i.e. overseas) conditions are not provided for professionals. Over a period of several years of training they have been made to feel part of an international system. The fact that their own system does not conform is the main source of cynicism.

The foregoing analysis makes it clear that, whatever their faults, the politicians and administrators are not to blame for the failure of the professional system to conform to 'proper' standards. For many decades it will just not be possible simultaneously to have international salaries, international structure of the profession, and service to the whole population. The adaptation may not be well done but some adaptation is necessary, and assimilation of professionals into an international professional system is inappropriate.

Inappropriate knowledge is developed not merely by memorizing from foreign textbooks, so that those who fail to get abroad—often because of inadequate language skill—commonly lack full understanding; but also by study of how a professional behaves when all the equipment is modern and all sub-professionals are trained in the latest skills. Their training usually ignores such things as the local pathologies, which would facilitate referrals by traditional healers, local accounting systems and the like. Moreover, because of the international network of qualifications and recognition, competition to enter the professional schools is usually through secondary systems almost totally devoid
of any sense of discovery, since they too are based on foreign syllabuses.

**Inappropriate skills** are, for example, those of the doctor, who can use every resource of skill and equipment that rich countries can afford to conquer the most obscure and intractable diseases, or those of the accountant dealing with the intricacies of the income of holding companies, not the skill to trace and tackle an epidemic with very inadequately trained staff, or to extract order from the records of a small Chinese business. Here too, the basis of their skills, before they can enter a professional course, is fluency and technique, memorized from a foreign text, not translation, improvisation and discovery.

The spurious integration of the international professional market is not, however, merely a force distorting the selection system. It also affects the way in which work is actually carried out by those who are trained and remain in the country. The equilibrium income of a relatively mobile professional, in any given place, is determined by possible income elsewhere and the cost of moving. Movement, in or out, will go on until this income is somehow earned. Governments can, of course, keep engineers or doctors in country areas, paying them less than the income they would require to stay, and effectively preventing outside earnings, but only so long as government service is more attractive over the whole career than other occupations. This will normally be so only if government salaries are, on the average, higher or if government servants can at some stage in their career use their position to supplement their salaries.

Where budgets cannot be raised to pay salaries sufficient to retain professionals, or to persuade them to work in rural areas, alternative methods must be found. Professionals can discriminate sharply in their charges between rich and poor. This will normally be expensive to administer unless the professionals themselves exercise discretion and also vary the service given; however, if they do this, it will be only to the very few rich that professionals deliver the kind of service for which they have been trained. They will have had little training to do what they must for the majority of those that they serve. It is probably better to allow them to dilute their services, by delegation to partly qualified subordinates. These, however, must be specially trained for such tasks, and usually training of sub-professionals is heavily influenced by professionals
demanding, for their income-earning activities, the type of special assistance available in rich countries.

(b) Recommendations. Reform in the structure and training of the professions, in their incentive-systems and the criteria for study overseas, is clearly both urgent and difficult to achieve. For several decades a system has been developing which selects out, from the education systems of these countries, all those whose family background or personal ability and character have fitted them for literacy, industriousness, and linguistic and mathematical skills, and trains them to want to work overseas and to feel frustrated and discontented if they have to do anything else. Many of those so trained have become entrenched groups, defending a position in their own countries which depends on mobility. Some can see, in principle, that training and professional structure need to be changed; but they feel that standards of accurate knowledge and professional ethics depend on restricting the flow of new entrants or on maintaining their own overseas links or both.

If reform is to be achieved it will be necessary to achieve complementary changes in the attitude and practice of several bodies concerned with professional structure, technical assistance and development. The following paragraphs make recommendations, arising out of the analysis, to international professional associations and to national ones in both richer and poorer countries, to international and national aid agencies and to governments in the Third World.

International professional associations often have as a long-run aim a more widespread and efficient service, by their own profession, throughout the world, and as great a flow of resources as possible, from rich to poor countries, to finance this. However, while they can legitimately support as high a level of international technical assistance as possible, within any given level different professions compete for limited funds, and the aim of a uniform level of professional service now is demonstrably diminishing professional efficiency in countries where it is most badly needed and causing a perverse movement of skilled people from poor to rich countries.

Comparing overall standards of different countries is not a worthwhile exercise: different components of standards would need - if they could be measured - different weights.
These components should be considered separately; for example, intellectual ability, practical skills, modernity, access to international literature, and commitment to professional goals. The relative importance of these, and the relative difficulty of achieving them, differ from country to country. The desire for uniformity has important historical origins, but should now be discouraged for the sake of greater efficiency in achieving professional goals.

Some uniformity in training brings important economies of scale. It should, however, be recognized that, with candidates training to work in very different countries, it brings significant costs in brain drain, cultural alienation, inappropriate skills, wasteful and unfair selection, and disciplines unrelated to local temptations or popular needs. There are no easy solutions, but the difficulties should not lead to the use of techniques appropriate only to rich countries.

Imitating the professional codes and disciplines of other countries clearly does even more harm than imitating their training. There is evidence of widespread failure to achieve a high level of commitment to the professional needs of local populations. Adaptation of disciplines to achieve local goals and resist local temptations is important but neglected. Failures here are too frequently treated as sensitive topics, not to be publicly discussed but privately attributed to cultural or racial inferiority.

The assumption of a single world-wide frontier of research in each professional field is also questionable. Professionals are not given credit and promotion for meeting the challenge of ignorance in their own country, but in terms of international recognition which is often based on imperfect international understanding of different professional needs in different environments.

Professional associations in industrialized countries should press for all undergraduate or graduate professional trainees from less developed countries to be required to decide and indicate clearly whether they intend to immigrate and join the profession in which they are training, or to work in their own country. The decision should affect their fees, the use of public funds, the criteria for selection, the attitude to language and assimilation generally and (so far as is financially possible) the training actually given.
Training of professional students from less developed countries should not, in general, be training them to act, in their own country, in the way professionals in much richer countries act. It should be using some of the rich country's greater resources to stimulate and instruct them for work in a poorer country. There should be constant awareness that while the rich country generally has more trained people from whom to learn, more adaptation is also needed. Not every trainer of such students can be expected to understand what adaptation is needed; but every student from a less developed country (except prospective emigrants) should have at least one teacher with the function of continuously stimulating adaptation of what he is learning to his own home environment.

Technical assistance often seems to imply that inhabitants of less developed countries learn from more developed countries how things ought to be done. It is more correct to see the situation as one in which people from both countries are studying how the poorer countries can adapt some of the techniques, skills and disciplines developed in richer ones. (Only a part of this process is paid for by the richer countries.) Better co-operation and greater skill are needed for such adaptation than for the direct imitation which seemed appropriate in the late colonial and early post-colonial periods. All professional associations should establish special branches to deal with this service, bearing in mind that the needs of less developed countries differ among themselves.

Professional training institutions that accept students from less developed countries should be aware of the effect of their selection criteria on the primary and secondary education systems of these countries. This can often be mitigated by relatively early selection combined with special training (e.g. in language skills) after selection has been made. Professional associations should consult with aid agencies systematically on such matters. Fewer students with better tailoring of selection and training to local needs, identified by joint consultation and study, would be preferable to more students trained for inappropriate conditions of work.

Professional associations in less developed countries are often still unnecessarily preoccupied with demonstrating that their own members are as capable as those of wealthier countries. Many of their members' achievements in overcoming severe lack of resources have already amply demonstrated the
falsity of myths of racial inferiority. Continuing preoccupation with such unnecessary demonstration is now handicapping many countries' efforts to deal with problems of real inequality of resources. Evidence is here cited that professional structures in some less developed countries are becoming less appropriate to the tasks to be performed. It is time that local professional associations took a stand against excessive superficial conformity. They have national, not only international, roles to play.

In the medical profession in most of the countries studied, and in other professions in some, specialists are becoming too numerous, with inadequate public funds or private wealth to pay for them; in some countries many professionals are already unemployed. This implies earnings too high to bring balance in the local market, yet mobility of professionals prevents local earnings from falling: generally it is unsanctioned, irregular incomes - with the alternative of emigration - rather than official salaries that induce the excess supply. Most of the people still lack adequate professional service. Strong measures, either to reduce the mobility or to change the professional structure, are essential. Active study of the problems of overspecialization and professional migration are needed, with readiness to modify professional structure when this is found to be necessary.

Professional ethical standards could be better enforced, and confidence in them improved, if there were less imitation of foreign codes: pressures and practices in the less developed countries necessarily differ widely from those in industrial countries, and failure to develop explicit and enforceable local standards leads merely to cynicism.

Professional schools' admission criteria often gravely distort the lower and middle levels of the education system. Professional associations should attempt to shift the emphasis away from the needs of the few who should be encouraged to take specialist study abroad to those of local practice, encouraging more emphasis on improvisation, cooperation with non-professionals, and practical improvements in local practice, and less emphasis on modernity and international languages. If foreign schools do not co-operate, local schools will be under some competitive pressure to meet foreign requirements. However, local professional associations could exert considerable pressure to substitute locally relevant standards, as a few professions are beginning to demonstrate in some of the countries concerned.
Government aid agencies tend to underestimate seriously the influence that selection of candidates for overseas study has on the educational system of the sending country. Accepting the existing criteria of one's own professional bodies and universities is easy: it conforms to the wishes of those professionals in less developed countries with whom contact is easiest, and to the attractive but (with present income disparities) impracticable ideal of a single international professional standard. However, acceptance of these criteria orientates the entire educational system of many less developed countries to training their key people to work abroad. The aid system must work hard at creating professional standards appropriate to the conditions of less developed countries, even though such efforts will inevitably be condemned by some highly articulate professionals as interference in local affairs. Against these, some professional pressure for change is already developing and much support for change exists outside the professions.

The convenience of conducting professional life mainly in international languages is purchased at very heavy cost. It needs to be recognized that the consequence of doing this, in most of the less developed countries, is that they must either insulate their entire professional system from the competition of overseas opportunities or train professions with very different structures, paying the few top people enough to retain them and training them specifically to organize, develop and guide a sub-professional corps, working in most countries in local languages. Otherwise brain drain of the best and distorted education of the rest will continue.

If the rural majority is to be served, international languages must be used mainly for translation or at least bi-lingual work; methods of teaching an international language should be judged by their effectiveness in producing fluent and competent bilingualism, and selection of candidates should emphasize written and oral translation skills, not mainly fluency and accuracy in the international medium.

Technical assistance to less developed countries cannot help interfering with their social structure: if such interference is unconscious it is likely to do more harm and less good than if it is conscious and directed to mutually accepted objectives. Often training is given to professionals on the advice of professionals, without recognition of the harm that inappropriate professional structure can do; this is wrongly regarded as non-interference. In fact it is massive
interference which severely limits the options of local governments in training their own professionals. The impact of availability of overseas training on the rest of the economy, through its effects on inducements, salaries, professional structures and local selection criteria, needs constant attention. Professions must be seen as interest groups with a natural tendency to base their local influence and power on their international contacts.

Governments of less developed countries cannot reasonably expect either foreign or their own professionals and professional bodies to be expert in the effects of national income in the necessary adaptation of professional structure and practice. High professional standards are important, but the relative importance of different components of standards is a politico-economic question; professionals themselves are merely technical (not disinterested) advisers on some relevant facts. Professional salaries, the rural-urban distribution of service, general income levels and professional structure are all interrelated, and policy towards professions needs to take this fact into account.

International pressures, toward uniformity of professional salaries and structures, are mostly the result of historical factors now irrelevant. Negotiating for action by the industrial countries to mitigate these pressures demands mainly a clear understanding of national needs, since no important interest in the industrial countries is served by uniformity. The international pressures which hamper the adaptation of the local professional structure result mainly from inertia and ignorance.

Though difference in historical experience, language structure and economic organization leads to differing professional needs, the less developed countries have many problems in common, in adapting to their own use the systems of professionalism taken from richer countries. Most international professional discussions tend to assume uniform international standards as a desirable goal. Meetings among those concerned - professionals, administrators and educators - with adapting professionalism to the needs of less developed countries would be likely to be useful.

It is time to embody the need for adaptation of international practices in the structure of the technical assistance system. Changes should be initiated in the transmission and reception machinery (e.g. the appointment of counterparts
to experts, or inter-university contracts) making adaptation both of the local structure and of the international 'model' the central feature of requests for, and offers of, technical assistance.

International organizations administering technical assistance should have officials responsible for monitoring the indirect effects of any projects on the professional and educational structures of recipient countries.

While international organizations must themselves almost always operate in the major international languages, they should show far more concern with the bilingual aspects of most professional work which they sponsor, and the sub-professional work conducted in local languages. More direct contact with such work should be fostered through interpreters and much more emphasis be given to fostering bilingual skills and training in translation.

While uniform criteria in presentation of accounts, in engineering standards, or in hospital practice, may be convenient to those planning international projects, they tend to foster uniform professional structures, as between countries with very different resources, and so generate inflexibility and waste. Such uniform criteria should never be imposed without weighing the disadvantages very carefully against the advantages, and trying to offset undesirable side effects.

Modernity should normally be given a relatively much lower significance (in comparison, for example, with intellectual capacity or professional commitment) in the less developed countries. This does not imply a more static technology in such countries, but a time lag which would enable proved techniques to be widely used to find out more information through local languages and by methods adapted to local professional resources.

Resources and encouragement should be given by international organizations no less than by national aid agencies to groups in different less developed countries who are interested in change in professional structure; conferences and working parties should be organized and subsidized to enable different governments and professional training bodies to learn from one another's experience in adaptation.
International bodies should attempt to secure more detailed qualitative reporting on how professions actually perform in urban and rural areas, how they are trained, staffed and disciplined, and what strains they experience. Quantitative data should not be prepared in forms that assume uniformity of professional structure as simply a fact of nature, or which treat (for example) professional salaries as suitable proxies for income received.
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Particulars of Participants
At the time when the research was undertaken, Dr Carino was Director of Research at the College of Public Administration in the University of the Philippines, Mr Liu was a research assistant at the Institute of Economics of the Academia Sinica in Taiwan and Professor Silcock was a Senior Research Fellow in the Research School of Pacific Studies in the Australian National University. Professor Silcock was co-ordinator of the research which was financed by the World Bank and the Australian National University. Professor Evers was Professor of Sociology in the University of Singapore and Professor Regan was a research student of Yale University, working for his doctorate under the local supervision of Professor Evers. Their research was undertaken independently of the World Bank project, but Professor Evers co-operated actively in the planning and co-ordination of the work, both in Canberra at the preliminary conference which he attended, and at Singapore.