ACKNOWLEDGEMENT

In preparing this paper much use was made of Alfred Hill's *Reform in the Dental Profession*, the writings of J. Menzies Campbell, especially *Dentistry Then and Now*, and Zachary Cope's *Sir John Tomes*. Lilian Lindsay's address to the Society of U.C.H. on Lee Rymer, and where possible the original papers and accounts as reported in the dental and medical journals.

THE SIXTY-SIXTH ORDINARY MEETING

At this meeting, held in the Maurice Bloch Lecture Theatre, Royal College of Physicians and Surgeons of Glasgow, on 26 March 1971, Dr. H. P. Tait, Joint Honorary Secretary, read a paper entitled:

HEALTH SERVICES IN INDIA AND BURMA: THEIR EVOLUTION AND PRESENT STATUS

A—INDIA

Rao (1968) in his panoramic review of the history and progress of medicine in India brought his story up to 1964. The purpose of this paper is to outline subsequent changes and developments in the health field and to indicate problems still existing and the targets set by the Union Government during its fourth Five-Year Plan (1969–74).

HEALTH ADMINISTRATION

The provision of health care services to the people of India is a basic responsibility of state governments and to some extent of municipal corporations of the larger cities. The Union Government is responsible for this provision in Union administered territories.

(a) *Central Administration.* The Union Government, through the Ministry of Health, generally has largely advisory and supportive functions. It initiates national programmes, e.g. malaria eradication and family planning, partially or totally financing such programmes. To her great credit India was the first country in the world to adopt family planning as a matter of national policy and for a time a special Family Planning Department functioned. Realization that the effectiveness of family planning activities could be greatly facilitated by integration with maternal and child health services, the Union Government in 1968 fused these two services into a Department of Family Planning and Maternal and Child Health under a commissioner. The family planning programme, however, continued to be directly financed from the centre. From that year the Ministry of Health comprised two main divisions—the Department of Family Planning and Maternal and Child Health and the Directorate-General of Health Services concerned with all other aspects of health services, including medical and health education, nursing, and the vitally important subjects of nutrition and supervision of food supplies.

(*b*) *State Administration.* Operating through State Health Departments responsible to State Ministers of Health, the autonomous position of these departments results in variations from state to state respecting staff organization, extent of health services

offered, and programmes carried out. All participate in nationally initiated programmes, e.g. smallpox eradication, which are financed by Union Government.

(*c*) *Local Administration.* Bearing in mind that some eighty per cent of India's population is rural, the field unit for health care is the 'Community Development Block'. There are presently over 5,000 such blocks. In most blocks there has been established a primary health unit based on a primary health centre and three subcentres. At these centres general medical clinics, maternal and child health activities, health education, family planning and special programme work are carried out through medical, nursing and ancillary staffs. Groups of ten to fifteen blocks comprise a district, usually served by a hospital.

(*d*) *Municipal Administration.* In the larger cities municipal corporations operate their own health services, financed by the city with assistance from state and Union governments. The extent of municipal health services varies from city to city, some, e.g. Madras and Bombay, having very complete services.

MEDICAL EDUCATION

India is still desperately short of trained doctors. To date there are ninety-three medical colleges in the country. The Fourth Plan proposes a further ten colleges being started bringing the annual output of doctors from the present 9,000 to about 10,300. In 1968–69 it was estimated that there were 102,000 doctors in India, a ratio of 1 doctor to 5,200 population. By 1974 with an estimated 138,000 doctors, the ratio will be 1: 4,300. Distribution of doctors will, however, probably remain uneven and most will be engaged in private practice. With an urgent need for medical teachers the Fourth Plan proposes a stepping-up of postgraduate teaching at the four postgraduate centres which will be strengthened by more equipment and teaching staff.

EDUCATION OF NURSING AND PARAMEDICAL STAFFS

Improvements have taken place in the numbers and educational facilities for these staffs but much remains to be done. Developments and targets in this field are shown in the following table:

Table 1

Education of Nurses and Paramedical Staff

Paramedical Worker	1965–66	1968–69	1873–74 (targets)
Nurses	45,000	61,000	88,000
Auxiliary Nurse-Midwives	22,000	34,000	54,000
Health/Sanitary Inspectors	18,000	20,000	32,000
Pharmacists	48,000	51,000	66,000
Radiographers	700	1,300	11,300
Laboratory Technicians	2,000	3,200	8,600

HOSPITAL BEDS

From 185,600 beds in 1960–61, the number rose to 255,700 by the end of the Third

Plan and a target of 281,600 total beds has been set during the Fourth Plan. Included in this Plan is the improvement of hospital facilities, particularly at subdivisional and district hospital levels by incorporation of specialist services.

RURAL HEALTH CENTRES

At the beginning of the Fourth Plan there were almost 5,000 primary health centres throughout the country but 340 development blocks had none. About fifty per cent of the primary health centres had bed accommodation but only twenty-five per cent had residential accommodation for staff. This lack has posed great difficulties in recruitment of doctors and nurses to rural areas. Arrangements under the Fourth Plan are designed to establish machinery for speedy construction of buildings and improving facilities at centres for staff.

SOME PUBLIC HEALTH ACTIVITIES

(*a*) *General Sanitation.* Eighty-four per cent of India's population still draws water from unprotected wells or polluted tanks and streams. The death rate from intestinal infections is about 360 per 100,000 population, caused mostly by polluted water and lack of basic sanitation. This is a measure of the magnitude of the problem of general sanitation facing the country. Progress of necessity is slow in a country with a rapidly increasing population, of limited resources, competing demands and the drive for rapid overall progress. It is against such a background that the Central Public Health Engineering Research Institute at Nagpur (established 1959) set out to design sanitation equipment that would be easy to operate, require minimum capital outlay, and could be made out of raw indigenous materials. With international assistance this objective is being steadily pursued.

(*b*) *Malnutrition.* This constitutes one of the most serious problems especially in women and children. Protein-calorie malnutrition and vitamin/mineral deficiency diseases are the major nutritional disorders, all aggravated by population growth and recurrent famines following poor monsoons. International agencies have assisted in launching applied nutrition programmes and the Nutrition Research Laboratory at Hyderabad has made readily available cheap recipes for nutritious diets. Mehta (1967) pleaded for more active steps to be taken by the poultry industry to popularize consumption of unfertilized eggs and extension of the fishing industry to improve sources of protein. But custom and religious beliefs present serious obstacles to quick improvement in these directions.

(*c*) *Maternal and Child Health.* In rural areas this activity is primarily the responsibility of nursing personnel with the medical officer in charge of the rural health centre co-ordinating activities. In urban areas the health care of mothers and children is mainly provided by a special service maintained by local governments and/or voluntary agencies. Considerable progress has been made in providing health care for these two groups of the population and this is reflected in steadily declining maternal and child death rates.

(*d*) *School Health.* A health service for schoolchildren hardly exists. Where it does it is rudimentary and far from the realization of its true objectives.

(*e*) *Control of Communicable Diseases.* Special programmes have been launched

nationally to control and ultimately eradicate certain important diseases. Assistance is given by international organizations, especially W.H.O.

Malaria. The national eradication programme was launched in 1958 and good progress was made until 1963–64 when a setback occurred mainly from administrative, operative and technical difficulties. The original programme, scheduled to stop in 1967–68, is likely to go on until 1975.

Smallpox. The programme, launched during 1962–63 was originally a three-year one, but expectations were not realized as the vulnerable birth to fourteen-year age group and migratories remained unvaccinated. In 1969 there were 18,694 reported cases of smallpox in India. The intention in the Fourth Plan is to strengthen staff, especially vaccinators, at block and district levels to ensure primary vaccination of newborns and revaccination of susceptibles at three-yearly intervals. Arrangements are already in hand for the production of freeze-dried vaccine at four Indian institutes in an effort to make the country self-sufficient for supplies.

Tuberculosis. The Madras trial of domiciliary treatment of this disease proved so successful that it was adopted in the district tuberculosis control programme. There are fifteen training and demonstration centres in the country. During 1968, eight million B.C.G. vaccinations were performed and from January to June 1969, over four and a half million vaccinations had already been done. In 1968–69 there were 502 tuberculosis clinics and these are to be increased to 582 by 1974 and beds for the treatment of tuberculosis, numbering 35,000 in 1968–69 are to be increased to 37,500 by 1974.

Trachoma. Control of this disease was begun during the Third Plan because of the high infection rate of defence services recruits.

Leprosy. Under the national programme 182 control units and 1,136 survey, examination and treatment centres had been set up by the end of the Third Plan. Doctors and paramedical staff are trained at the Central Leprosy Teaching and Research Institute, Chingleput, and at Nagpur Medical College.

FAMILY PLANNING

This receives and will continue to receive the highest priority under the national programme financed by Union Government. The 2.5 per cent annual increase in India's population has been largely due to steady diminution in the general death rate (14 per 1,000 in 1969) but a sustained high birth rate (41 per 1,000). Life expectancy is now fifty-two years compared with thirty-five in 1950–51. The crucial importance of family planning is recognised by increasing public interest and the enormous government expenditure in effort, organization and education.

The present aim is the reduction of the birth rate from forty-one to twenty-five within the next ten to fifteen years. In the mass education programme already launched, the strategy is to bridge the gap between knowledge and adoption of family planning measures by couples in the reproductive age groups. The pill, introduced in 1967 as a pilot experiment, has not been adopted widely as yet.

AYURVEDIC, UNANI AND OTHER MEDICAL SYSTEMS

These indigenous systems receive strong support from prominent politicians and other national figures. During the Third Plan, when official recognition was given to

these systems, research units were set up and controlling bodies organized. Included in the current developments are studies in education in these systems, the compilation of Ayurvedic and Unani pharmacopoeiae, the establishment of a central medicinal plant garden at Poona, and a series of surveys of medicinal plants.

CONCLUSION

India still has enormous population, health and social problems but the energy with which she is tackling these is greatly to be admired. In other fields, too, e.g. education, considerable advances have been made. School enrolment in 1950–51 was approximately 23.5 million children; in 1968–69 it was estimated at 74.3 million.

B–BURMA

The political and social history of Burma dates from the eleventh century A.D. with the foundation of the city of Pagan by King Anawrahta and the extension of his rule by conquest to the Irrawaddy region. He also introduced Theravada Buddhism to the country. During the days of the Burmese monarchs court physicians were employed but the ordinary folk relied on the services of indigenous and other practitioners of the healing art. From 1826 when British influence was first felt in Burma, culminating in the complete annexation of the country in 1886, western medicine was introduced and steadily extended. Civil, mission and voluntary hospitals were founded for the Burmese people. A medical school for training licentiate or subordinate native doctors was opened at Rangoon in 1907. In 1924 a medical college was founded at Rangoon General Hospital. The heads of this college, all members of the Indian Medical Service, were mostly trained at Edinburgh University Medical School and the course, lasting for seven years, for the degree of M.B., B.S. Rangoon, was based on the Edinburgh medical curriculum. This Burmese medical degree was recognized by the General Medical Council of the United Kingdom in 1937.

Following Burma's separation from India administratively in 1937 and her attainment of a measure of self-government, the Burmese Ministry of Health came into being. It had two separate departments—an Inspectorate-General of Civil Hospitals and a Department of Public Health. By 1939, under the Inspectorate there were 315 government hospitals with 9,364 beds, 541 doctors, 636 nurses, 138 midwives and 326 compounders while under the Department of Public Health there were 46 doctors, 100 public health inspectors and 317 vaccinators. Voluntary schemes for maternity and child welfare were also in operation in the main centres in the country.

Woodruff (1967) has described the disastrous effects of World War II on Burma's health services and has paid warm and deserved tribute to her great efforts to build, develop and reorganize these services following Independence.

The overriding problem facing Burma is financial. It is this and this alone which restricts planning and development of health and social services even with international aid from various agencies, e.g. W.H.O., U.N.I.C.E.F., etc. The spirit of independence is strong and the great attribute of the people is their fervent desire to build the nation through their own efforts. Bearing this in mind the achievements of Burma are quite remarkable in the health field.

Today her population numbers twenty-seven million, of which over eighty per cent are rural and forty per cent are children under fifteen years. From 1954 to the present, the life expectancy at birth of a Burman has risen from forty-one to fifty years and that of his wife from forty-four to fifty-two. But the health, longevity and productivity of the people are still hindered by shortage of trained doctors and nurses and by the prevalence of malnutrition and communicable diseases such as malaria, tuberculosis, leprosy, trachoma, etc., all of which are currently the object of special programmes. The health service is a completely unified one with no artificial barriers between curative and preventive and social medicine. In this lies much of the strength of Burma's health organization.

Following Independence (4 January 1948) the problem of rural health care received urgent attention. Doctors were in very short supply and it was foreseen that this situation would remain so for many years to come. After much debate the concept of training health assistants for work in rural areas was evolved instead of waiting for sufficient doctors to be educated. Thus a system of health centres in rural areas with health assistants attached was developed with a plan to set up a rural health centre for each unit of fifteen village tracts, a centre to cover a population of between 15,000–40,000, with an average of 25,000. The staff planned for each centre was a health assistant, lady health visitor, three to five midwives, and a vaccinator. This rural health scheme was launched in 1953 with the ultimate aim of having 800 rural health centres throughout the country, a target already surpassed with the figure standing at 882 by the end of 1970. Staffing of the centres has just kept pace with their development.

HEALTH ADMINISTRATION

On 1 January 1965, the Burmese health service was completely reorganized. It is a service available to all, free of charge, but as in Britain, a small proportion of the population can opt for private medical care from the handful of doctors engaged in private practice, mainly in the larger centres.

(*a*) *Central Administration.* The Ministry of Health is the central department concerned with the planning and implementation of government policy relating to health. The executive body is the Directorate of Health Services with a director as head, assisted by four deputy directors for hospitals, public health, disease control and laboratories respectively. The deputy director for public health is assisted by three assistant directors for rural health, for maternal and child health including school health, and for epidemiology. Also under this deputy director are sanitation, health education and the scheme for the training of health assistants. The deputy director for disease control is assisted by assistant directors for epidemics, and special campaigns against leprosy, malaria, tuberculosis and trachoma. A nursing chief, responsible to the director for all nurse and midwife training programmes and recruitment, is also based at the Directorate. In January 1970 the health services of other government departments and public bodies such as railways, labour and social security were amalgamated with the Directorate of Health Services.

(*b*) *Divisional Administration.* The country is divided into six administrative divisions, some of which are sub-divided. It is the intention of government to create nine

divisions in the near future, some of the present sub-divisions being of considerable size. Each division is in charge of an assistant director who has one or more deputies and a divisional health officer responsible for environmental hygiene and epidemic control work in the division.

(*c*) *Local Administration.* Each division is composed of a series of township areas (284 in all in the country) of varying size, each in charge of a township medical officer who may be assisted by a health officer for public health work. The township medical officer is responsible to the divisional assistant director for all medical and health services in his township as well as administering and taking an active part in the work of his township hospital.

In the rural areas are the health centres and associated sub-centres, each rural health centre being in charge of a health assistant. He in turn is responsible for all the personnel and work at his centre and sub-centres and comes under the jurisdiction of the township medical officer.

MEDICAL EDUCATION

There are only 3,000 trained doctors in Burma giving a ratio of 1 doctor per 9,000 population. Most are in government employ but about 500 are engaged in private practice. The three Institutes of Medicine at Rangoon (1924), Mingaladon (1963) and Mandalay (1955) respectively together turn out about 350 doctors each year but this number will soon be increased when the Institute at Rangoon enrols a further 100 students annually. A college of dental medicine was opened at Rangoon during session 1964–65, the first batch of students graduating in 1970 and thereafter being attached to divisional hospitals and school health service teams. The college is now training dental assistants as well as undergraduates.

EDUCATION OF NURSES AND PARAMEDICAL STAFFS

(*a*) *Nurses.* The shortage of all grades of nurses is acute and forms one of the major problems facing Burma's medical administrators. There were only 2,600 general trained nurses employed by the Directorate of Health Services in 1969, and these were mainly in hospitals. There are four schools of general nursing. Other grades of nurses include lady health visitors and midwives, both grades being trained especially for work in rural health centres. Orientation courses are given to all nurses engaged in special campaigns, e.g. leprosy. A nursing aides scheme is presently being considered.

(*b*) *Paramedical Workers.* A school of paramedical science was recently established at Rangoon General Hospital for training laboratory technicians, radiographers, pharmacists and physiotherapists.

The most interesting group of paramedical workers is the health assistant category. A school for training health assistants was opened at Rangoon in 1951, the first students qualifying in 1953, the year in which the rural health service was begun. The average annual intake of students, all men and all of high school standard, is 100. After qualification each health assistant is allotted to a rural health centre where he is under the authority of the township medical officer and has a clearly defined set of duties. It was a privilege to meet many of these health assistants and to observe their work, the standard of which was of a very high order.

Vaccinators, also trained at the health assistants' school, take a three-months' course before being placed in a post.

Health education is receiving more and more attention nowadays and probably no more carefully than among the new nations of the world. Burma had a hygiene publicity section established within the Inspectorate-General of Civil Hospitals in 1886. In 1952, a Health Education Bureau was set up in the Directorate of Health Services. This bureau, in charge of a chief health education officer and a staff of assistants undertakes training courses for all classes of health personnel as well as conducting campaigns and other health education activities.

HOSPITALS

In 1968 official returns for hospitals showed that there were 346 throughout the country with 20,619 sanctioned beds. These hospitals ranged from large general and specialist hospitals in the main centres to small township hospitals of sixteen beds. A recent development in accord with government policy has been the establishment of small sixteen-bedded hospitals interposed between the township hospitals and rural health centres of townships. Such hospitals, called station hospitals, are in charge of a doctor assisted by at most two nurses. A station hospital may itself constitute a station health unit or in combination with a nearby rural health centre. These units and staff come under the administrative control and supervision of the township medical officers.

New hospitals have been built or are in the course of construction since the above official figures were published and by the end of 1970 at least 370 hospitals were in use partially or completely.

SOME PUBLIC HEALTH ACTIVITIES

(*a*) *General Sanitation.* Water supplies, as in India, are largely unprotected, and intestinal infections therefore commonplace. Hospitals, especially the larger ones, have made their own arrangements for piped water supplies. U.N.D.P. has recently sponsored the survey, planning and construction of pure water reservoirs for three large centres. On the Directorate of Health Services staff a chief engineer and assistants attempt to co-ordinate the activities of several agencies responsible for environmental sanitation.

(*b*) *Malnutrition.* Surveys among different population groups have indicated the wide prevalence of nutritional deficiencies, all of which constitute a significant public health problem. A Nutrition Project was accordingly set up by government to study the problem and advise on preventive and remedial measures. A nutrition department of the Burma Medical Research Institute was established in 1963 and extensive investigations have been carried out by this department, particularly on infantile beri-beri, and since 1967, on research aspects of the government's endemic goitre control programme.

(*c*) *Maternal and Child Health, including School Health.* In Burma these services constitute a single activity. In rural areas the work is carried out by the staffs of the rural health centres. In urban centres teams of workers, headed by a medical officer operate from health centres. Dramatic results have been achieved in this field of

health endeavour. In 1957 the maternal and infant death rates were 6.4 and 164.3 respectively and in 1969 1.2 and 65.4.

(*d*) *Control of Communicable Diseases.* Special programmes have been launched nationally to control certain of the more important of this group of diseases, assistance being given by United Nations organizations, especially W.H.O.

Malaria. This disease still poses a formidable problem in many parts of the country. An eradication programme was inaugurated in 1951 but did not become national until 1957. In 1969, W.H.O. was invited to review operations and advise on their further development.

Smallpox. A pilot programme was begun in 1963 and extended nationally in the following year. This has proved to be one of Burma's most successful communicable disease control programmes ever undertaken and by the systematic nationwide process of vaccination and revaccination the country has been free from indigenous smallpox since 1967. Two small outbreaks in towns bordering on East Pakistan in 1968 and 1969 were satisfactorily contained and no spread occurred.

Tuberculosis. In 1951 a government tuberculosis centre was set up at Rangoon. Gradually the centre has developed into the Union Tuberculosis Institute for guiding technically the implementation of the national anti-tuberculosis campaign started in 1966–67. A B.C.G. vaccination scheme begun in 1952 has been steadily expanded and now includes routine vaccination of newborn infants in divisional and other hospitals.

Trachoma. After surveys in 1963 revealed a high incidence (eighty per cent) of this disease in Central Burma, a control programme was established for that part of the country in the following year.

Leprosy. The worst affected parts of the country are Central and Northern Burma. A national control scheme was started in 1958 and this employs the largest staff of all communicable disease programmes.

Filariasis. Following the establishment of a filaria research unit at Rangoon a control programme was launched there in 1969 as the initial stage of a national one.

Plague. This disease occurs particularly in Rangoon and in Central Burma and a special plague study unit has recently been established at Myingyan.

FAMILY PLANNING

The government does not undertake any form of family planning scheme at the present time.

AYURVEDIC MEDICINE

A school of Ayurvedic medicine exists in Rangoon and many practitioners operate throughout the country. In 1970 a study group toured Indian Ayurvedic centres with a view to extending such educational facilities in Burma.

GENERAL CONCLUSIONS

It is hoped that this brief sketch of the recent progress of medicine in India and Burma will convey something of the great efforts these two countries, with many

similar problems yet so different in so many other ways from each other, are making towards the betterment of their people's health.

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Numerous official papers were also consulted in the preparation of this article.

THE SIXTY-SEVENTH ORDINARY MEETING

This meeting was held in the Crichton Royal Hospital, Dumfries, on 5 June 1971. Papers were read by Dr. Allan C. Tait, Physician Superintendent of the Hospital and Dr. R. A. Robinson, Consultant Psychiatrist. Dr. Tait spoke on:

HISTORY OF CRICHTON ROYAL

I am not expert in medical history; like any other consultant, I know only something about my own specialty, and about my own hospital. Encouragement may be drawn, however, from the fact that the history of this hospital reflects much of the history of psychiatry in the last 150 years. It is not unnatural for a psychiatrist to be more interested in people in history rather than in the processes of history itself; so this paper will be anecdotal rather than conceptual, and informal in its approach.

At the turn of the eighteenth and nineteenth centuries, the care and treatment of the insane were in general abysmal. Those unfortunates whose illness made them disturbed and violent were often confined in prison-like circumstances, with the brutality which is generated by fear. Those whose illness rendered them fatuous rather than furious, in terms of one eighteenth-century classification, were left to die neglected, or, if they were lucky, accommodated in poorhouses or segments of small general hospitals; the community, as a whole, cared little. Earlier in the eighteenth century in fact, the citizens of Dumfriesshire hit on the superficially ingenious stratagem of escorting lunatics northwards, and gently propelling them across the Ayrshire border. This policy was rendered nugatory by the identical cunning of our southern friends in Cumberland.

I will not dwell on these unhappy circumstances. As always, there were some people —doctors and laymen—who were conscious of such abuses of human rights and dignity; and some of these lived in, or had connexions with, Dumfriesshire. They were responsible, directly or indirectly, for the foundation of this hospital in 1839. To them I shall later return. But while doctors are no doubt important, hospitals exist for patients; so the first person to mention, by name, is the first patient to enter the doors of Crichton Royal, on 3 June 1839.

Mary Candlish, aged thirty, was a pauper, taken from the North Block of Dumfries Royal Infirmary—'where little appears known' of her—and we have here her case record, written by the first Superintendent, Dr. W. A. F. Browne. From another set of his records we can identify his scheme of clinical examination: it covered, under