



IN the last week of July 1964, the 20th International Geographical Congress met in London. It was at 11 a.m. on Tuesday, 21st July, that Her Majesty the Queen, accompanied by Prince Philip, opened the Congress in the vastness of the Albert Hall, referring to her own special interest in the geography seen from the air on her numerous Commonwealth journeys. Gathered in the hall were 2,000 geographers from some sixty countries, together with a large number of their friends. There is a Congress every four years: the last to be held in Britain was in 1928; the next is planned for Delhi in 1968 under the Presidency of Professor S. P. Chatterjee of the University of Calcutta and Chairman of the Indian National Atlas Commission.

What is Geography? The Chairman of the Organising Committee, Professor Dudley Stamp, told the Albert Hall gathering that geography studied the relationship between man and his surroundings or environment. It is a vast field and usually an individual geographer will restrict his main work to certain aspects. If he studies relationships in the past it is historical geography, the present, human geography, and if he begins to look to the future he is really concerned with physical planning. Some geographers

MAPS OLD AND NEW

BY
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STAMP

specialise in a certain part or region of the world (regional geography), some in special aspects of the environment such as climate (climatology), or the form of the land (geomorphology).

But no other subject attempts to study man and his activities in relation to this background as a whole. The geographer is particularly interested in *where* things happen, or, to use more technical language, "areal distribution." Now the best way, often the only way, of recording *where*, is on maps. So the map is sometimes described as the "principal tool of the geographer." But there are maps of many different kinds and for many different purposes and a considerable part of the work of the Congress was devoted to discussing maps and map-making.

Between the four-yearly Congresses, work is carried on by the International Geographical Union through a series of commissions, the members of which are drawn from many nations. Some commissions are set up to study a special problem, others continue work over long periods. No less than seventeen commissions presented reports to the London meeting. There is a commission on Ancient Maps which has been preparing catalogues of maps from the

Middle Ages and where they may now be found. There is a commission on a World Population map, encouraging member countries to prepare a uniform series of maps showing where people live. The commission on a World Land Use Survey is concerned with maps to show how the peoples of the world use their land—work which is especially important in the new countries of Africa. Another commission is on National Atlases, which can show the natural resources of a country. Among the fine national atlases which were shown and discussed was the great National Atlas of India, the important National Atlas of Uganda, the Atlas of Canada, the Atlas of Australian Natural Resources and the wonderful National Atlas of Britain, published last year by the Oxford University Press.

After the Congress in London many members went to Edinburgh to attend the First Congress of the I.C.A.—International Cartographical Association—which is closely linked with the Geographical Union, where they learnt more of how surveys are carried out in the field and how the maps are actually drawn and printed. The cartographers visited the Ordnance Survey in London and Southampton, the map printing works of George Philip and Son in London, and John Bartholomew in Edinburgh, as well as others. More and more use is now made of photography from the air, and we are even getting photographs of large areas taken from satellites.

There is a new and very promising development in map-making which was demonstrated at a special exhibition entitled "Britain Makes Maps" which was held partly in the Geological Museum and partly in a hall opposite, and was seen by about 100,000 people. The shape, for example, of most countries does not change, yet a lot of time is spent in drawing that shape over and over again for different maps on different scales. It is now possible to use complex machines by which a needle can be run over the outline of the country and a record made on a reel of magnetic tape. Then the tape can be "played back" and the outline of the country reproduced. But why stop at the outline of the country? Many other features from a map can be similarly recorded on tapes—for example, place names—and then reproduced when required.

Somewhat similar is the method by which facts are recorded on cards by means of punched holes, and later the cards can be used to make up maps. There is now a Botanical Atlas of Britain containing a series of maps showing the distribution of many wild plants. These maps have been produced from a series of record cards.

At the exhibition were also some wonderful new maps of the floor of the ocean. We used to think the deeper parts of the ocean were smooth tracts covered with mud or ooze, now we know that there are also steep-sided mountains, deep valleys and rocky ridges. On the floor of part of the Indian Ocean, for example, submarine volcanoes have poured out masses of "pillow lava", so called because the molten rock has solidified in masses exactly like bed-pillows.

But what about maps as research tools? Many countries do not as yet have detailed maps at all, or very few. It used to be a very slow, expensive and laborious process, first to set up base camps and then for parties of surveyors to cut their way through forest, bush or jungle, trying to get to high points from which they could get a view over the country, and so make outline



Interpretation of photographs is essential in modern map-making.

Above: Mr. E. O. Iba from Lagos, Nigeria, learns how to use a stereoscope at the Directorate of Overseas Surveys. When two adjacent photographs are examined through the stereoscope, detail can be seen in relief.

Left: The impression of mountainous relief shows up well in this photograph of a hill-shaded drawing of Mount Kenya being inspected at the Directorate of Overseas Surveys.

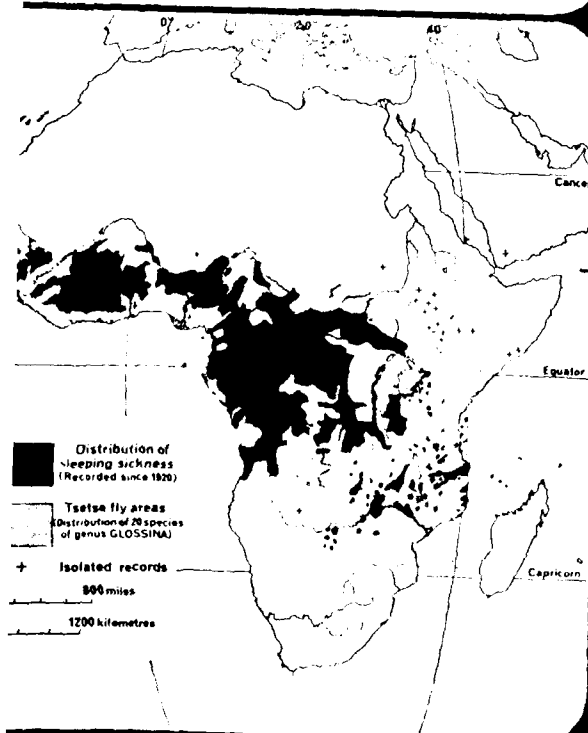


so everywhere there is pressure of people on the land, hence the need to have maps of land resources.

Of course we have long had geological maps showing the distribution of minerals. Now special attention is given to hydro-geological maps which show resources of water underground: where there are underground streams, how far below the surface are pools of water which may be brought to the surface and aid the watering of crops and animals. Then different sorts of soil maps are being made: by combining maps of the relief and drainage of the land, soil, water, the natural vegetation and present land use, we can construct maps of "land potential". These are very helpful in many of the developing countries of the Commonwealth wanting to know how they should plan their future development.

A very important new field of study is being called medical geography. If, for example, we mark on a map all the points where people die of some particular disease we find often there are strange irregularities. For example, cancer of the stomach is a serious killing disease in parts of the British Isles. The maps show it is particularly bad in the hilly parts of Wales, and now the doctors want to know why. If we make maps of disease over a period of years we find some are spreading—like bilharziasis in Africa—while others are being checked—like malaria and sleeping sickness.

A great international war is being fought against pests which have plagued mankind for thousands of years, such as locusts. At the Anti-Locust Research Centre in London detailed maps are kept showing the movement of locust swarms. We can now trace them back to their breeding grounds and so there is hope of taking action, as it were, in their homelands before they start off on their destructive invasions. So in this field, as in so many others, the map has become a new weapon to help mankind improve conditions of life and work. □



There are maps of many different kinds and for many different purposes. A variety of techniques is used. Top row, far left: The late Professor P. A. Buxton prepared this detailed map of the tsetse fly areas and the distribution of sleeping sickness in Africa.

Aerial photography has an important role in mapping and survey work. Different types of film highlight different characteristics.

Top row, centre: Conventional panchromatic film picks up shadow detail well.

Above: The same scene taken with sensitive infra red film makes water appear black. This is a useful aid for the delineation of water, creeks and sandbanks. Britain's Ordnance Survey uses this method to map low water marks as it is better than the conventional ground survey owing to the comparatively short periods of time in which the survey can be done.

Britain's Directorate of Overseas Surveys helps developing countries overseas at their request in the basic surveying and mapping of their territories.

Bottom row, far left: An aerial view of Moyamba Town, Sierra Leone.

The map is a research tool in medicine. Mapping the incidence of disease reveals not only the pattern of death, but can test whether that pattern corresponds with the pattern of other factors in the environment such as climate or industrial concentrations.

Left: Map of Lung Cancer (men) in Britain 1954-58, generalised. All parts in black have an incidence of deaths from this disease greater than the national average. This is essentially an urban disease. Almost every urban area is picked out from its rural surroundings, but the prosperous south east has incidence up to 120 as a whole (20 per cent above average).



The tea gardens of Sylhet, with women picking the tea leaves; most of Pakistan's tea estates are located around the Sylhet area of East Pakistan



Inside a Pakistan tea factory: tea leaves piled on the floor for grading and packing after being rolled and roasted

PAKISTAN'S ACCENT ON AGRICULTURE

AGRICULTURE constitutes the base of Pakistan's economy; more than 80% of her 95 million people depend on agriculture and 71% of her total foreign exchange is derived from exports of agricultural products. In view of its importance under Pakistan's Third Five-Year Plan, increased expenditure has been allotted to the agricultural sector.

Targets of the Plan in agricultural production are: rice, over 13 million tons; wheat, over 5 million tons; minor food grains, 1½ million tons. The total production of food grains is envisaged to be over 20 million tons, an increase of 25% over production in 1964/65.

THE major long-term objectives of the agricultural development programme are to increase the income of farmers, to achieve self-sufficiency in food requirements to the extent compatible with other needs of the economy, to promote agricultural development and such crop and livestock production patterns as will utilise most economically the human, land and water resources of the country.

The total cropped area is expected to go up to 64.6 million acres by the end of the Third Plan.

The use of chemical fertiliser is the most important factor in raising crop yields and increasing the income of farmers: this will be the spearhead of the agricultural development programme.

Plant protection is another major project: about 20% of the cropped area should be covered by the end of the Third Plan.

The distribution of improved seed will be streamlined and more emphasis will be laid on modernising the existing farms and

equipping them to increase the production of nucleus and foundation seeds.

INCREASED mechanisation, agricultural education and research, expansion of storage capacity, improved marketing, development of fisheries, afforestation and expansion of credit facilities are some of the other major items of the programme.

In the reclamation of land under water and salinity, 800 miles of embankments have been constructed along the Bay of Bengal in East Pakistan, protecting about 14 lakhs acres of low-lying delta lands. The embankment also provides drainage during the monsoon and flood protection to standing crops.

Construction work on the world's largest spillway at Mangla in Pakistan has entered the second phase with the commencement of the concrete placing process in the upper stilling basin area of the channel. The Mangla Dam contractors hope to complete the spillway structure by 1966: when completed a continuous flow of a small quantity of water through the gates will guarantee the year round supply to the areas along the river at present suffering from the fluctuations of the river flow.

THE Mirpurkhas Sugar Mills of Karachi have placed an order worth over £1 million with Fletcher and Stewart Ltd. of Derby and Scotland. The British firm, one of the world's leading manufacturers of sugar machinery, supplied the factory for the Premier Sugar Mills at Mardan, Pakistan, which is the largest sugar factory in Asia, producing nearly 500 tons of white sugar a day.



A sugar-cane crop in the recently reclaimed Thal area



A fruit seller in Quetta



A young shepherd boy in the Khyber area of West Pakistan



The Taunsa Barrage for irrigation of hitherto arid areas



Village women at work husking rice in Sindh

THERE is a large building near the main block of the University of London which has twenty-three names carved high on its facade, and balconies decorated with gilt rats, snakes, mosquitoes, ticks, fleas, lice, mice, and tsetse flies. A stone medallion above the entrance depicts Artemis, the Greek goddess who traditionally eases the pain of childbirth, and her brother Apollo the sun god.

This is the home of the London School of Hygiene and Tropical Medicine, the only school in the Commonwealth entirely devoted to the preservation and promotion of health in countries of all climates. The 23 names commemorate famous pioneers of tropical and public health.

Laymen tend to think of tropical disease as a fevered branch of medicine distinct from other kinds; but health evolution follows roughly the same pattern everywhere. The only difference is that some countries have largely overcome diseases caused by dirt, inadequate or polluted water supplies, insects, and malnutrition. They are free to devote more attention to a later stage of health evolution, which includes problems of respiration, degeneration, mental disease, the care of the aged, and industrial health. They have a duty to advise and assist those parts of the world where effective immunisation, the supply of hospitals and clinics, and the education of people in the essentials of good health, still have some way to go.

The London School of Hygiene and Tropical Medicine has played an important part in the promotion of health research and education ever since it was founded by a distinguished Fellow of the Royal Society, Sir Patrick Manson, in 1899. Manson made his greatest contribution to medical knowledge when he proved what had been suspected, that insects carry and spread disease.

He discovered that filariasis, a worm infection which is still troublesome in India, Ceylon, and some Pacific Islands, is transmitted by culicine mosquitoes. The discovery encouraged other researchers who showed that malaria, plague, sleeping sickness, yellow and typhus fever, are transmitted by insects, and paved the way for the economic development of vast areas of Asia, Africa, and Central and South America, which otherwise would have remained unhealthy for systematic development.

INITIALY the School was known as the London School of Tropical Medicine, and it received its present name by Royal Charter in 1924. In 1931 it became a School of the University of London, and in 1934 the Ross Institute, which had been founded in 1926 to honour and further the work of Sir Ronald Ross on malaria, was incorporated as a department of tropical hygiene.

Here are some of the present-day activities of the School:

RESEARCH. The School carries on a wide range of research. For example, it has its own extensive laboratories, breeds its own insects, and has access, through the Hospital for Tropical Diseases, to patients in London who corporately suffer from a wider range of diseases than the people in any single part of the tropics.

TEACHING. Postgraduate medical students from many countries attend the School to improve their knowledge and do research while studying for their Ph.D. (Doctor of Philosophy) or taking one of numerous diploma or specialist courses.

ADVICE. Experts from the School advise bodies such as the World Health Organisa-

MAN AGAINST DISEASE

The work of the London School of Hygiene and Tropical Medicine



Dr. M. G. R. Varma, who was born in India and is now on the staff of the School, studies a jar of ticks which can transmit virus diseases to man

tion of the United Nations, providing them with much of the scientific basis, and the first-hand knowledge and experience, vital to the success of large-scale health campaigns.

WORK OVERSEAS. Members of the staff of the School travel overseas often, and some are assigned to special research tasks. The Ross Institute has branches in India, Ceylon and East Africa, where it advises, undertakes field work, and educates local personnel.

The prevention of disease is a lengthy and often discouraging process, involving teachers and administrators equally with doctors and research scientists. When Scotsman Sir Ronald Ross proved in 1898 that a type of malaria found in birds was transmitted by anopheline mosquito, he produced a paper modestly entitled: "On a new way to prevent malaria." Perhaps he guessed at the decades of effort, trial and error that would be needed to make prevention work.

In the early days, if you wanted protection from malarial mosquitoes you slept under nets at night and drank quinine. Entire populations could not take even these simple precautions, and it was only when powerful insecticides such as DDT were developed in the last 20 years, that the total eradication of malaria became a possibility.

The first major campaign aiming at the control of rural malaria was launched in British Guiana, South America. In four years the coastal belt was cleared of the disease



In Zambia Mr. I. F. Keymer, on the staff of the School and studying for his Ph.D., inoculates a rat with blood from a shot kudu, from which trypanosomes that cause sleeping sickness were isolated. Left: In London Dr. W. E. Ormerod, who is investigating the resistance to drugs by trypanosomes, indicates a graph to Professor P. C. C. Garnham, FRS, head of the Department of Parasitology



and the mosquito was almost completely destroyed.

Since then the World Health Organisation has succeeded in abolishing malaria as a serious threat in regions inhabited by 339 million people. Another 728 million have benefited by eradication programmes: in Ceylon, for example, spraying of house walls with DDT has reduced infant malaria deaths by 30,000 a year.

However, all is not plain sailing; it never is, in the kind of work that engages the

Mr. George Kinoti, of Kenya, with tanks containing snails responsible for bilharzia, a worm disease that affects millions of people in Africa

Below: Mrs. Barbara Sawyer, a technician, extracting mosquito pupae from a bowl. For research purposes the School breeds many malarial mosquitoes



as standard procedure, and is used everywhere. Now the team is studying fundamental aspects of resistance in practically every insect of medical importance—insects such as flies, bugs, lice, and blow flies.

The head of the Department, Professor D. S. Bertram, is trying to sterilise insects so that they cannot reproduce. He said: "Radio-mimetic compounds which have been used in cancer therapy with limited success have been shown in the laboratory to sterilise some insects. Unfortunately the toxicity of these mutagens, as they are called, is a serious problem in thinking of practical applications."

His research is beset with hazards, but it could conceivably be that in the future it will be possible first to reduce mosquito populations by using insecticides and then follow up by introducing sterilised mosquitoes. As each mosquito mates only once in its life, a large number of the native mosquitoes who mated with the sterilised newcomers would fruitlessly expend their seed. In theory a combination of insecticides and sterilisation could reduce mosquitoes to manageable numbers.

ALTHOUGH Ross, Manson, and other pioneers, discovered many details of the cycle of malaria infection, nobody knew what happened to the parasites of the disease after their deposit in a human body and before they reappeared in the blood stream.

In 1948 a British scientist, Colonel H. E. Shortt, FRS, in collaboration with the present head of the School's Department of Parasitology, Professor P. C. C. Garnham, FRS, solved this mystery.

Working in Nairobi, Kenya, Professor Garnham had discovered monkey malaria parasites in liver. The two men working together then discovered parasites experimentally first in the liver of monkeys, then in the liver of man.

One of the Professor's co-workers, a chief technician and class demonstrator at the School, Mr. William Cooper, volunteered to be infected with a special form of malaria by the bites of about a thousand mosquitoes. Nine days later he submitted to a laparotomy, a major operation in which a piece of his own liver was removed in the interests of medical science.

Mr. Cooper "stained" cut sections of his own liver, revealed the malaria parasites present in their thousands, and subsequently produced coloured illustrations, for teaching purposes, that are classics of their kind. He died in May 1964, fortunately not as a result of his sacrifice.

One important result of Professor Garnham's discovery, and subsequent work, has been the development of drugs which attack the malaria parasites in the liver and not, as had previously been the case, in the blood stream.

YET another aspect of malaria research is centred in the Ross Institute, which is concerned with the toughest, longest-lived anopheline mosquito, the curse of many parts of Africa, *Anopheles Gambiae*.

Every day thousands of Londoners walk along the street outside the School unaware that in converted coal cellars beneath the pavement is the world's largest collection of living cultures of mosquitoes.

In the tropics the insects are induced to lay eggs on pieces of filter paper which are then sealed in polythene envelopes and air-

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mailed to London. At the School the eggs are placed in plastic bowls half full of water where they hatch and become larvae. The larvae shed their skins four times and turn into pupae, which are placed in netted cages and develop into adult, man-biting mosquitoes.

Identifying mosquitoes is itself an important service, and the Ross Institute acts as a reference laboratory to the World Health Organisation in "typing" *Anopheles Gambiae*. The only way to identify the different types is to cross specimens by artificial mating techniques and observe the characteristics of the male offspring, which give a clue to the identity of the parents.

By crossing mosquitoes and examining them and testing their reactions, workers at the Institute hope to shed light on why control efforts in Africa are nowhere near as effective as could be desired. And they hope to answer questions such as why malaria in Southern Rhodesia is at a low level although *Anopheles Gambiae* inhabits the region.

MALARIA eradication is an important but far from exclusive part of the work of the School, which can best be summarised in two sections: research in London and work overseas. First London...

The School's Department of Clinical Tropical Medicine, under Professor A. W. Woodruff, is housed in the Hospital for Tropical Diseases. "Prevention begins in knowledge of disease acquired at the bedside," says Professor Woodruff. And he gave this example.

It was noticed in the ward at the hospital that patients admitted with complications arising from sickle-cell anaemia had suffered an attack of fever before the complications developed. This suggested that fever might be a factor of importance in this hereditary abnormality of the red blood cells, which can affect up to 40 per cent of some African tribes.

At the hospital, radioactive chromium was injected into the veins of selected patients who had the disease, where it mingled with their blood. Small amounts of blood were taken from the patients and put into a small test tube surrounded by a crystal, so that its radioactivity could be measured.

The experiments proved that fever did bring about changes in the blood of sicklaemia victims. But comparative tests were needed, and so the scene shifts overseas to Kampala, Uganda, where collaborative studies are proceeding with Professor D. J. Jelliffe in the paediatrics department of the medical school. A clinic has been organised in which one group of sicklaemia patients is prevented, as far as possible, from contracting fever. There are significantly fewer complications among these patients than in unprotected people. Thus another item had been added to the storehouse of medical knowledge.

In the various departments of the School there are many members of staff and post-graduate students engaged on a bewildering variety of specialised research.

Here, in the Department of Entomology, is Dr. B. R. Laurence, investigating what happens to filarial parasites within the culicine mosquito that carries them. Recently

he returned from a three months' visit to Nigeria, where he studied insects spreading disease in villages in an area chosen for field study by medical students of the University of Ibadan.

Here is Dr. M. G. R. Varma, who was born in India and is now on the staff of the school, studying ticks which can carry viruses and give them to man.

In the Department of Parasitology George Kinoti from Kenya, who graduated as a zoologist at Makerere College in 1962, and has worked for the East African Common Services Organisation at Mwanza, is studying snails that transmit bilharzia, aiming for his Ph.D.

And Mrs. P. Nelson, graduate of Colombo University, Ceylon, who has already gained a Distinction in the School's Diploma of Applied Parasitology, shares a room with a fierce, caged, Ceylonese Rock Squirrel, and takes blood tests from its tail. She is taking



Spraying insecticide on to houses in Australian Papua and New Guinea. Millions of mosquitoes are killed, but some can resist chemical attack

a Ph.D. on the parasites of animals found in Ceylon, including monkeys.

In the Department of Human Nutrition eleven students, including two from India, two from Pakistan, one from New Zealand and one from Fiji, are studying for the London University Diploma in Nutrition.

Other departments of the School—Bacteriology, Medical Statistics and Epidemiology, Occupational Health, and Public Health—all have vigorous and diverse research programmes; all take overseas students; and all have real significance for the tropical countries.

Overseas, members of the staff of the School come and go and play an important part in research projects.

The Ross Institute concentrates on practical disease prevention and the training of people who are going to do practical work. Recently it carried out research in Tanzania (formerly Tanganyika and Zanzibar) into a type of bilharzia, proving it to be a much more important source of ill health and death in the tropics than had been thought.

Bilharzia is a worm disease that can be contracted by washing, bathing, or fishing, in water where minute organisms discharged by snails penetrate the unbroken human skin.

Today, with irrigation schemes bringing great economic benefits but adding to the possible sources of infection, bilharzia, in

the view of the Director of the Ross Institute, Professor G. Macdonald, "may be the greatest price Africa has to pay for development."

AFRICA has two types of bilharzia but there was argument whether one of them, a urinary type, was very important. The World Health Organisation asked Professor Macdonald, and his Institute, to settle the matter, so a survey was set up, in co-operation with the East African Institute of Medical Research, into a cross-section of the population in part of Tanzania.

It included an examination, which involved the taking of elaborate X-rays, of all the pupils at certain schools. "In some of the schools," said Professor Macdonald, "up to eight per cent of children aged 8 to 14 proved to have a form of internal damage, revealed on X-ray, which in Britain would be regarded as extremely grave."

The survey settled the argument that this disease is "one of the most significant to children in Africa", a conclusion that will speed and intensify research into the problem.

A parasitologist from the London School has been overseas studying the parasites of African game, which is a reservoir of human and veterinary disease. Another has been in British Honduras where he studied a parasitic disease called Leishmaniasis—otherwise known as "chicleros' disease" because it affects the chicleros who "tap" the resinous sap, chicle, from which chewing gum is made.

A lecturer from the Department of Clinical Tropical Medicine is in Dar es Salaam helping in the training of medical assistants to handle day-to-day outpatient work in rural areas. And a lecturer supported by the Leverhulme Trust is on secondment to Makerere College engaged on research into anaemia.

Nutrition students spend part of their time working on field problems of nutrition in Nigeria. The London course is associated with the University of Ibadan, and when students complete it successfully they receive a certificate bearing the crests both of the London School and the Nigerian University.

Occasionally the running battle with disease produces moments when the background of unremitting work is dramatised in very human terms and hits the headlines.

Professor Woodruff's department did a small survey in East Africa into oncocerciasis, or river sickness, that can cause total blindness, and in January 1964 the Professor and an ophthalmic surgeon flew out to find two victims of the disease to bring to London for research and treatment. They picked upon Mr. Shauri Ndege, aged 60, who was blind, and Daniel Sembe, aged 57, who had very slight vision in only one eye.

"We thought there was a good chance of restoring their sight," says Professor Woodruff, "but the process was all very largely experimental. We also hoped to make important advances in the understanding of the disease, which is caused by parasites carried by flies that breed near rivers."

Results of the many experiments made during the treatment of the two Africans in London are still being analysed. What is not in doubt, however, is that the sight of Shauri Ndege and Daniel Sembe HAS been restored. When they flew home they saw their native land and their loved ones for the first time since they went blind, four years ago. They carried a message of hope for the millions who still suffer from disease. □



General view of the buildings of University College. Part of the construction was financed by the British Government

Above right: London University Hall, one of the University College buildings

University College, Dar es Salaam, was officially opened by the President of the United Republic of Tanzania, Mwalimu Julius Nyerere, on 21st August, 1964, when L.I.B. degrees of the university were presented to the first twelve graduates of the College.

University College is one of the constituent colleges of the University of East Africa, the two other colleges being at Kampala (Uganda) and Nairobi (Kenya).

The new college is eight miles from Dar es Salaam and the area is now known as "University Hill". The college started functioning in 1961, without a building of its own. Then the Tanganyika African National Union party generously offered its headquarters.

At the same time work started on the new premises for the college and the first phase of the project is now complete. It has cost almost £1½ million; the second phase, scheduled for completion by 1967, is expected to cost a further £2 million.

Help has come from many sources including the British Government, whose latest offer of aid, made last year, amounted to £800,000. At the opening ceremony the first hall of residence was named, by the President of the United Republic, "London University Hall", to mark the long, special relationship which has existed between the Universities of London and East Africa.

Right: A graduate receives her degree from President Nyerere. Below: Dr. W. K. Chagula, Registrar, and Mr. R. C. Pratt, the Principal of University College, awaiting the arrival of President Nyerere. Bottom: Students in their colourful gowns at the opening ceremony



UNIVERSITY COLLEGE, DAR ES SALAAM



ENJOYING LIFE IN BRITAIN

Trade Unionists, educationists, school children, and a young pilot with a taste for adventure . . .



1. Scout from Singapore

1. Scout from Singapore: Mark Yu shows two Scouts his collection of 450 badges which he has collected from all over the world. He was attending the 38th annual reunion of the 1st Gilwell Park Scout Group in Essex, England.

2. Trade Unionists from Malaysia visited Southmead Hospital in Bristol during their tour of England and were delighted to meet Teoh Ah See, a Malaysian student nurse at the hospital. From right: Miss Kalthum binti Haji Hamzah, Mr. John Gurusamy, Mr. Robert White, and Mr. Mas Junid bin Mas Amin.

3. Four Thai Governors visited Stibington Primary School in Northamptonshire during their tour of Britain. Here, the headmaster explains the use of models in teaching. Looking on, from right: Mr. Yudth Nunkakdi, Governor of Lopburi; Mr. Vitoon Chakkapark, Governor of Smutprakarn; Mr. Sawasdi Meechien, Governor of Patlung; and Mr. Nard Montasevee, Governor of Choburi.

4. Enterprising Indian Librarians: Mr. Chanchal Singh (left) and Mr. Dosanjh have together built up a library of over 1,200 Indian books which they mail to clients all over Britain. The library is run from a house in West Bridgford, near Nottingham. Picture shows the librarians helping two visitors to choose from the children's section.

5. Young Indian Painters have brought a new method of painting to a school in Leeds. Ignoring paint brushes, they dipped their fingers into the paint and applied it directly to the paper. The rest of the class quickly followed suit. In this picture Didas Singh and Gurder Singh teach a classmate their finger painting technique.

6. Educationists from Ceylon: Youth Club music instructor Mr. Mark Bonwell-Clode invites Mr. K. Don Ariyadasa to play one of the Club guitars at the Sice HY Youth Club in Swansea, Wales. Mr. Ariyadasa was one of a party of educationists from Ceylon on a visit to Britain.

7. Doctor from Pakistan: Dr. Nabibakhsh Qazi, Professor of Persian at the Sind University in West Pakistan, has chosen Cambridge University in which to conduct his research into the fundamental links which united east and west ten centuries ago. His work, carried out with the aid of a British Council bursary, calls for a knowledge of six languages. In the picture Dr. Qazi talks to Professor Arberry (left), Professor of Arabic.

8. Civil Servants from Pakistan arriving at London Airport to spend a month in Britain as guest of the Commonwealth Relations Office. From left: Mr. Eusuf, Mr. Haque, Mr. Nazir, and Mr. Qarni.

9. Government Officials from Vietnam visited the Royal Mint in London which prepares coinage for many countries including Vietnam. In the picture two of the officials are holding bags of newly minted 2,000 Dong.

10. Indian Girl with a taste for adventure is 22-year-old Juliet Thomson: after obtaining a degree in Philosophy from London University, she bought a 20-year-old Auster aircraft to fly back to India. Picture shows her talking to her co-pilot Mr. Harris.



5. Young Indian Painters



7. Doctor from Pakistan



8. Civil Servants from Pakistan



9. Government Officials from Vietnam



6. Educationists from Ceylon



10. Indian Girl Pilot



2. Trade Unionists from Malaysia



3. Governors from Thailand



4. Enterprising Indian Librarians

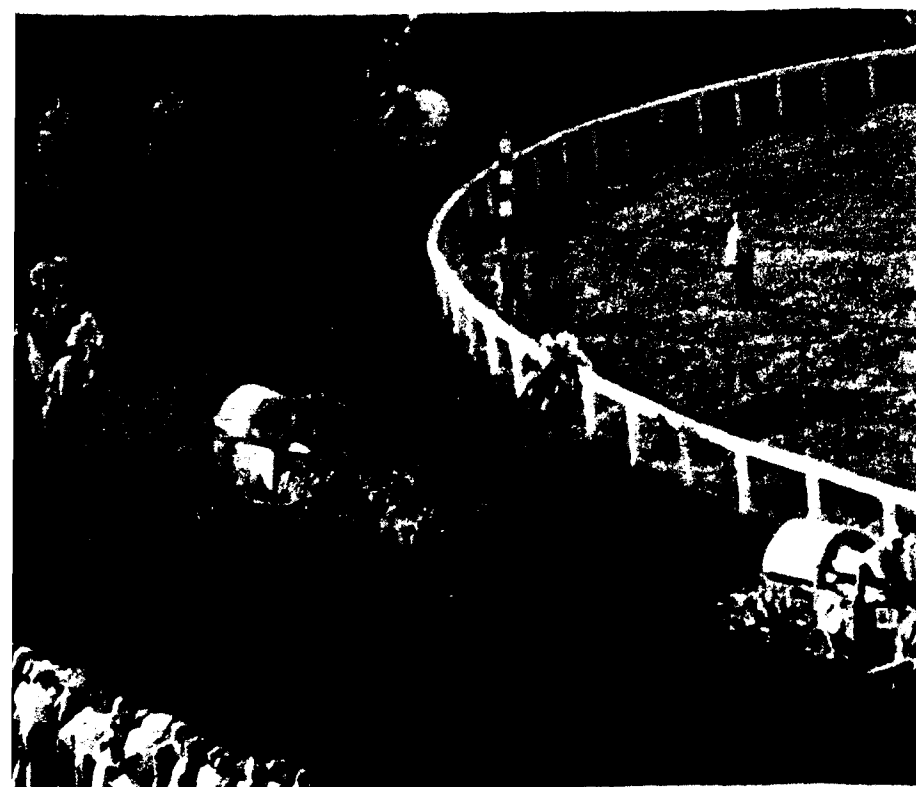
Stampede week starts with a six-mile parade through the down-town area. Cowboys, Indians, bands, floats, cowgirls, with the citizens of Calgary in colourful western wear, combine to produce an unforgettable spectacle



Right: At the drop of the flag, the barrier will lift and a wild bronco and its rider catapult into the arena



Below: Four-horse chuckwagon race presents one of the most thrilling events. Race starts with loading of wagons, then into a series of figure 8 manoeuvres, followed by a helter-skelter round the arena



Right: Perfect co-ordination of rider and horse in the brahma bull-roping event



Far right: Bareback and saddle bronc riding is judged not only by the time a rider stays on; the judges evaluate both the rider's and the horse's performance

CALGARY STAMPEDE



Left: It was never a real friendship —from the bronco's point of view anyway—so parting is not such sweet sorrow

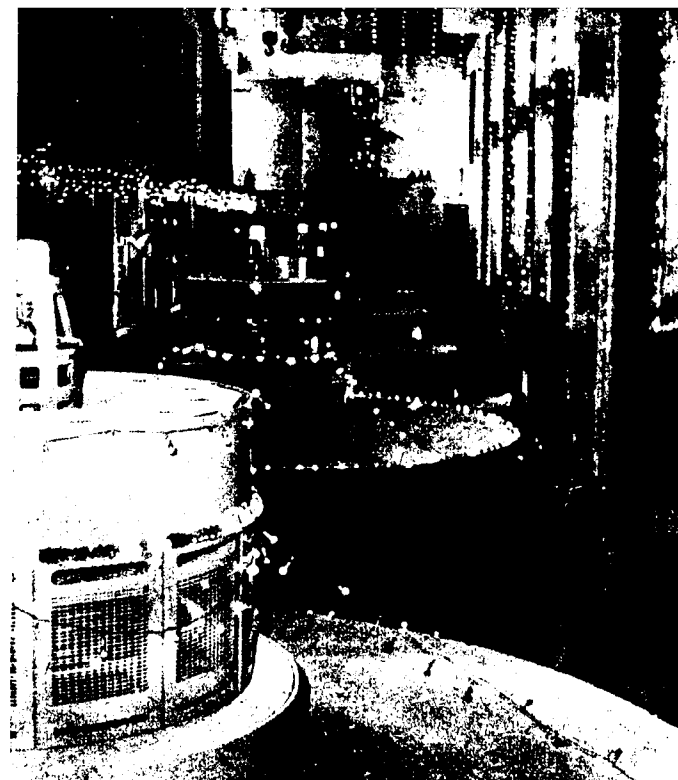
Below: Wild cows are released. The cowboys team up in twos, to be first to catch and milk a cow



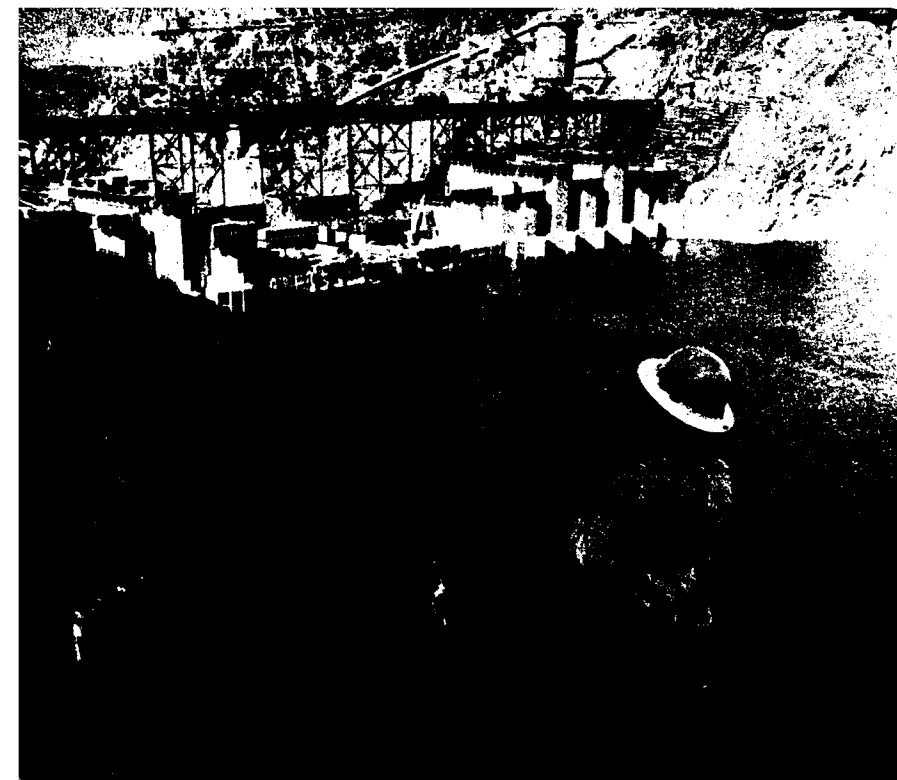
In 1912 a young cowboy by the name of Guy Weadick proposed an annual stampede in Calgary, centre of Canada's beef cattle industry. This event, combined with the annual fair, became the Calgary Exhibition and Stampede, today claimed to be the greatest outdoor show on earth. Although Canada is now predominantly an industrial, not an agricultural, country, and getting more so every day, the cattle numbers on the prairies are at an all-time high of nearly six million head. The ranching industry has its climax in stampede week when Calgary, the "cowtown", as it is called, brings Wild West pageantry to life



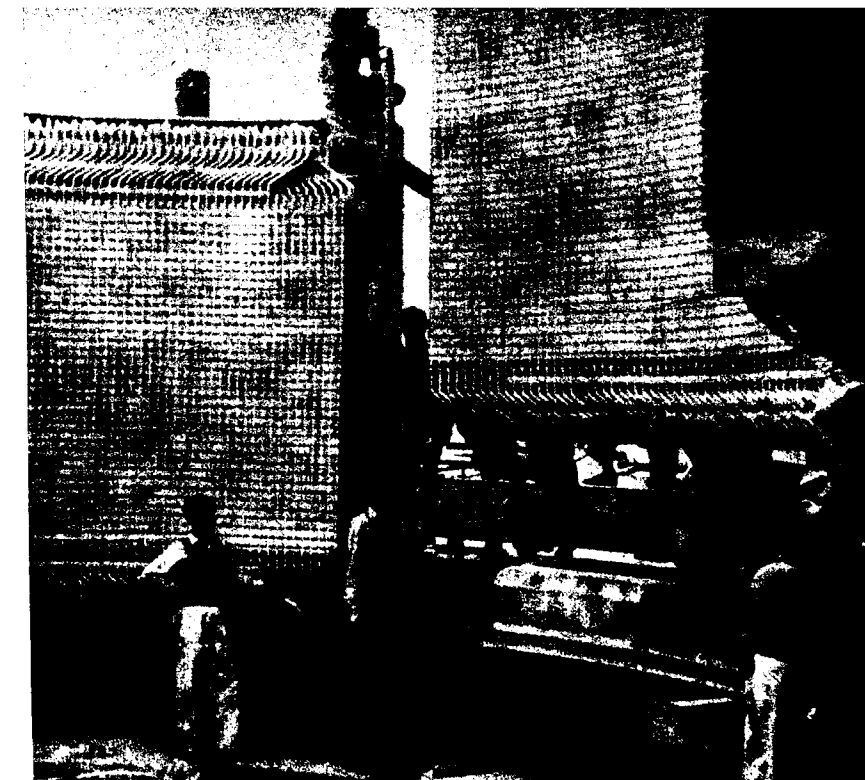
Three shifts worked round the clock to complete the dam : here, the morning shift at work near the power station



An interior view of the power house at Bhakra: combined installed capacity with Ganguwal and Kotla is 604,000 kilowatts



The lake behind the dam : Associated Electrical Industries Ltd. has supplied five 90 MW generators for the hydro-electric power station



Construction work on the generators at one of the power stations : here, section quarters of the stator being placed in position

FACTS ABOUT INDIA'S BHAKRA ACHIEVEMENT



A view of the Nangal Hydel Canal. In the foreground, right, the Ganguwal Power House

The Bhakra-Nangal Project was started after independence and on 17th November, 1955, the late Prime Minister Nehru placed the first bucket of concrete. The project was conceived by Sir Louis Dane, the Lieutenant Governor of the Punjab in 1908, and planned in 1911.

Its name is taken from two villages, Bhakra and Nangal, in the Himalayan foothills.

Over six million acres of land will be irrigated by the Bhakra Dam and Nangal Canal.

Over half a million kilowatts of power are generated. Nearly 700 miles of main canals and their branches are contained in the project.

Over 8,000 workmen and several hundred engineers were employed at peak periods, all recruited, trained, supervised and paid by the Indian Government.

A 740-ft. concrete dam forms part of the scheme and is the highest in the world.

The waters of the Sutlej contained in a vast lake could meet the domestic needs of India for a year.

The concrete poured into the foundations of the dam would be enough to make an eight-foot-wide concrete road round the world at the equator. The total amount of concrete used is three times more than the material that went to make all the seven pyramids of Giza.

Agricultural produce, estimated at over Rs. 1,000 million a year, will be produced as a result of the increased irrigation.

New villages with a population of over a million are expected and employment brought to over 3 million families.

Orders for equipment used in the building of the dam were given to British firms, including switch-gear, main transformers and auxiliary equipment.

Main generators were manufactured and supplied by the Associated Electrical Industries of Britain. The size of these units can be judged from the fact that the rotating parts of each generator weigh over 400 tons.

Transformers to feed the Nangal Fertiliser Factory were supplied by the English Electric Company. These transformer units are the largest single units ever transported over the Indian railways.



The Bhakra Dam : to lay the foundations, digging to a depth of 190 ft. below the river bed was necessary



Control room of the power house of the hydro-electric power station at the dam



View of the gorge and river. Lord Attlee, former British Prime Minister, said about the dam, "It is a symbol of India's progress and a great tribute to her engineers. No single project can do more to help India's progress."

TWO BRITISH WOMEN, BOTH OF THEM WIVES AND MOTHERS, EACH BRILLIANT IN HER OWN SPHERE, WHO WON INTERNATIONAL FAME IN 1964

Nobel Prize Winner

PROFESSOR DOROTHY CROWFOOT HODGKIN learned she had been awarded the 1964 Nobel Prize for Chemistry when staying in Accra, where her husband is Director of the Institute of African Studies at the University of Ghana. The Nobel Prize is the highest international award and Dr. Hodgkin is only the third woman to win the coveted £19,000 prize in its 63 years' history.

The award was made—in the words of the Royal Swedish Academy of Sciences—"for her determination by X-ray techniques of the structure of important biochemical substances". Dr. Hodgkin had "shown exceptional skill in which chemical knowledge, intuition, imagination and perseverance had been conspicuous". A scientist who has known her for many years said less formally: "Dorothy is a wizard at seeing what others miss. X-ray crystallography needs a tremendous amount of intuition and sheer hard work. The prize is a just reward for the brilliant and painstaking work she has put in over the past 30 years."

But young Dorothy Crowfoot (as she then was) very nearly became an archaeologist rather than a scientist, and archaeology is still listed with "children" among her hobbies. She was born in Cairo when her father, Dr. J. W. Crowfoot, was with the Egyptian Ministry of Education. He later became Principal of Gordon College, Khartoum, and Dorothy Crowfoot inherited his interest in archaeology, spending early summer holidays excavating in the Near East. But soon after she entered Somerville College, Oxford, in 1928, she became interested in the exciting mysteries of chemistry.

After leaving Oxford, she joined J. D. Bernal in the newly established crystallography laboratory at Cambridge. It was there, in 1933, that she took the first X-ray photographs of a protein—pepsin—crystals of which were brought from Sweden. This led to the discovery that proteins were highly organised molecules whose structure could, in principle, be attacked by the methods of X-ray crystallography.

Today, a Fellow of Somerville College and Wolfson Research Professor of the Royal Society since 1960, Professor Hodgkin heads a 14-strong research team at Oxford University's Chemical Crystallography Laboratory. She is one of the brilliant school of crystallographers in Britain who analyse molecular structures by examining the pattern cast by an X-ray picture of crystals of the compound. She was one of the Oxford scientists who helped to develop the new British wonder drug Ceporin.

Scientists depend on work like that of Dr. Hodgkin for a clearer understanding of how a substance is built up. It is then possible to make the substance artificially, saving money and time in waiting for natural chemicals to form.

Particularly important is Dr. Hodgkin's analysis of penicillin (for which she was elected to the Fellowship of Britain's Royal Society in 1947) and her eight years' work on the vitamin B₁₂. A liver extract for combating pernicious anaemia, the vitamin



was first isolated in 1948. But it was not until the work of Professor Hodgkin, with researchers in Cambridge under Sir Alexander Todd and industrial groups in Britain and America, that the enormously complex molecule was known and the way laid open to synthesising it by chemical methods.

In X-ray crystallography, the investigator must find the arrangement of atoms in three dimensions from the directions in which the electrons that surround them scatter X-rays. There is no set course from data to conclusions. Thousands of X-ray pictures are studied which give the distribution of electron densities and a sort of contour map is produced giving the position of atoms and their relationship in space.

Professor Hodgkin's genius lies in her capacity to relate a crude pattern in two dimensions to an imagined arrangement of atoms in three dimensions which could give rise to that crude pattern. She arrives at a correct initial interpretation—on occasion running counter to preconceived ideas of chemists—sticks to it and by an elaborate and painstaking technique arrives at a detailed and accurate picture. The technique is difficult to apply and in complicated cases it makes heavy demands on the investigator.

Once asked about this ability or intuition and whether women could imagine three dimensions better than men, Professor Hodgkin could not agree. But she thought for a while and said that perhaps women were better at thinking of two things at once,

because they spent much of their lives doing so.

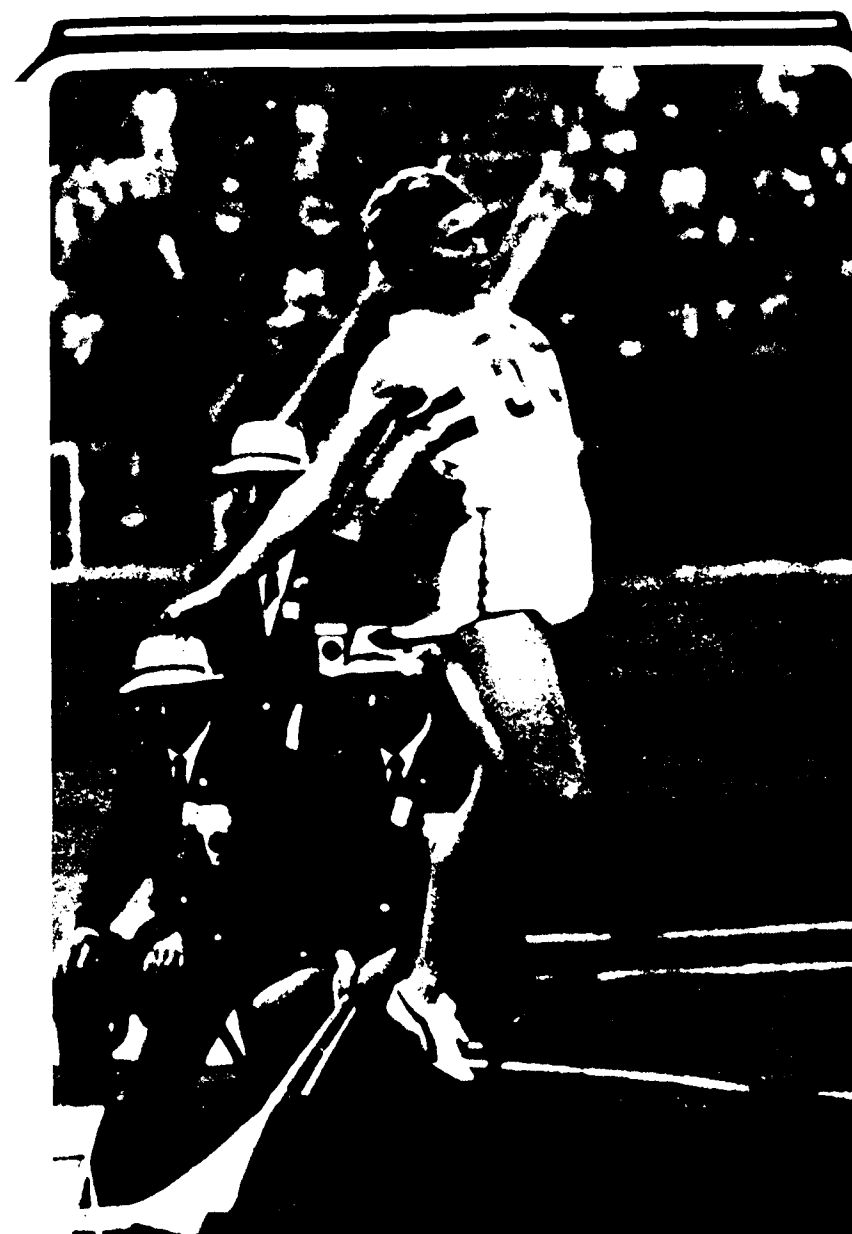
Dr. Hodgkin, at 54, has demonstrated this capacity in her own life. In 1937 she married the historian Thomas Hodgkin. They have three children and three grandchildren. She has combined the responsibilities of family and research without skimping either, and her orderly mind thrives in an atmosphere of clutter and clatter.

She can work anywhere, and friends visiting her home in Oxford will see her doing so surrounded by children playing the guitar, flute and gramophone, while a dozen or so guests and friends conduct simultaneous conversations. Her sister and five children now share the Oxford house.

Dr. Hodgkin's own children are scattered through the world. Her eldest son Luke, married with three children, is on a teaching attachment at Algiers University after making a brilliant start in mathematical research at Oxford and Princeton. Her daughter Elizabeth, who is 23, is teaching in Zambia, while 18-year-old Toby is doing a year in India as a V.S.O. (Voluntary Service Overseas) member.

There are many causes Dr. Hodgkin hopes to support with her prize money. When told of the award, she said, "I would like to set up a scholarship scheme at Oxford. And I'd like to contribute something to the cause of peace and relieving famine."

* Marie Sklodowska-Curie won a Nobel Prize in 1911 and her daughter, Irene Joliot-Curie, in 1935



In the spacious lounge of her flat overlooking the Market Place in Henley-on-Thames, Oxfordshire, Mrs. Mary Rand smoked, after a meal bursting with carbohydrates (allegedly the ruin of slender figures) and said: "I'm lazy. Fortunately I don't have to train very hard."

A timid knocking on the street door revealed children asking for their autograph books, which Mary had taken in and methodically signed. The telephone rang three times in five minutes—journalists wanting interviews; a friend with congratulations: "What does it feel like, Mary, to have three Olympic medals hanging round your neck?"

In Tokio in the 1964 Olympic Games Mary Rand, aged 24, who used to match her speed and skill with four elder brothers, launched her elegant body 22 feet and 2 inches in the long jump (picture above), setting a world record and winning the gold medal. She won a silver medal in the five-event pentathlon and a bronze team medal in the 100 metres relay. Lazy indeed!

She explained that she doesn't ENJOY physical effort any more than any housewife with husband, child, housekeeping and shopping on her mind enjoys walking nine miles a day (the estimated average) doing what has to be done. "But I have always been what they call a 'natural' athlete," she said, "and I made up my mind to win something in the Olympics."

So, during the winter before the Games, watched by baby daughter Alison from her

pram, she ran circuits of a 550-yard pebble track in the afternoons, and miles on the roads with her husband, an Olympic sculler, in the evenings.

Two evenings a week she went weight-lifting, and on Saturdays she indulged in five or six 600-yard runs in neighbouring woods.

There was also a season of competitive athletics in Britain and Europe before the Olympic Games, all of which Mary Rand survived while remaining elegant, house-proud, a mother, and without giving up her carbohydrates.

This baker's daughter who, as a school-girl, won an athletics scholarship and regularly beat the boys, has kept both her feminine charm and a level head. She faces a problem which few housewives have to face: shall she, with her great talents, continue in athletics, or, having beaten the world, should she hang up her track shoes?

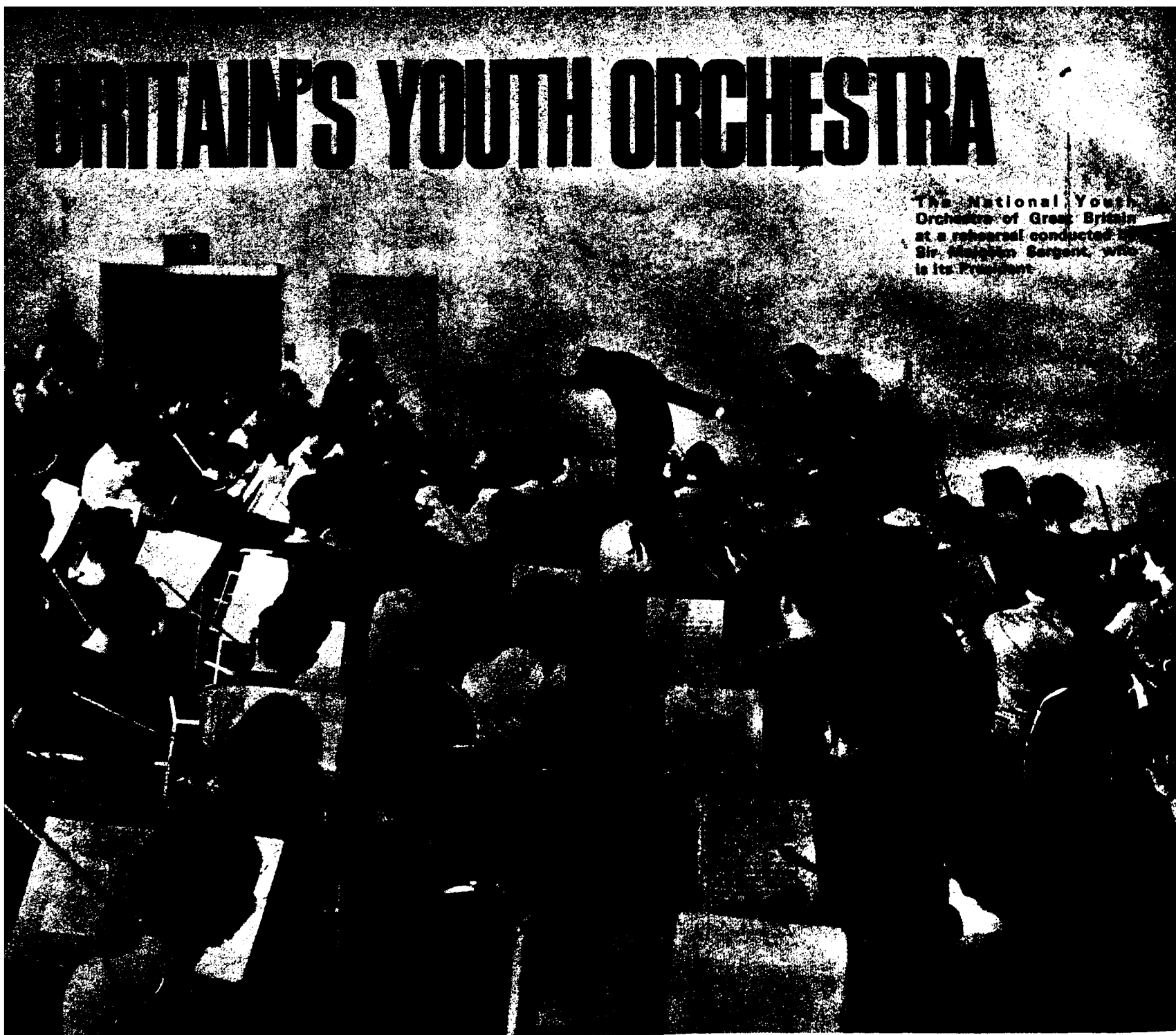
"I'm naturally restless," she said. "I must be on the go. I've made many friends in athletics, seen the Commonwealth, travelled the world. It's hard to end such a chapter and open another."

Whatever she decides, the year in which she won three medals and lunched with the Queen will be one she will not forget.

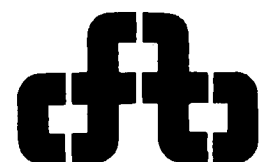
Mrs. Mary Rand on the gold medal plinth in Tokio (above right) and (right) shopping with her baby daughter back home in Henley-on-Thames, where she lives in a flat overlooking the old Market Place

Gold Medal Winner





The National Youth Orchestra of Great Britain at a rehearsal conducted by Sir Malcolm Sargent, who is its President.



ASPECTS OF
COMMONWEALTH
ART

The National Youth Orchestra of Great Britain has been chosen to appear at the first Commonwealth Arts Festival to be held in Britain from 16th September to 2nd October, 1965. This invitation not only recognises an orchestra which has earned an international reputation, it pays tribute to its Founder and Musical Director, Dr. Ruth Railton (right) who is doing so much for Britain's young musicians



MISS JENNIE LEE'S appointment as Britain's first "Minister of Leisure" recognises the fact that increasing automation and rationalisation mean more spare time for the people than ever before.

As Parliamentary Secretary to the Ministry of Public Building and Works (her official title), the new Minister is now busy preparing a report for the Prime Minister. She is surveying the whole of British cultural life and how it is supported both publicly and privately. The work of such bodies as the Arts Council, the Royal Fine Art Commission, the projects supported by the Department of Education and Science, the work all over the country of local societies and local authorities will be studied.

Whatever else Miss Lee includes in her report, the work of Dr. Ruth Railton, founder and director of the National Youth Orchestra of Great Britain, will inevitably figure. A musician of the first rank who has studied with Toscanini, Bruno Walter and Cantelli, Dr. Railton has built up a school and an orchestra which has won national and international recognition and has raised the musical standards of young people and the levels of opportunity for young musicians throughout Britain.

Dr. Ruth Railton originally intended to be a dancer. For many years she studied with Anna Varenka and for a short time with Anna Pavlova, but after an accident which



damaged her legs she decided to make music her career and won a scholarship to the Royal Academy of Music, London, in 1937.

Her experience with the young people of Leicester in the Midlands during the war, when she spent much of her time playing at concerts, teaching and conducting, convinced her that much musical talent, particularly in the provinces, was going to waste—mainly through lack of encouragement and good teaching.

She determined to start a National School, a boarding school for the training (and general education) of the most talented young musicians in the British Isles. Everyone she approached foresaw tremendous difficulties, especially that of finding enough money, so she decided to start the school on her own. Putting down £500 as security—her savings from concert fees—she founded the National Junior Music School of Great Britain in January 1947.

There was no chance of buildings for the full-time boarding school she had originally hoped for, so Dr. Railton decided to do three short terms' work during school holidays in borrowed premises, each time culminating in an orchestral concert. The school soon became better known as the National Youth Orchestra of Great Britain.

Early financial difficulties began to be overcome. Dr. Railton established good relations with local authorities; musical



and local authority teachers reminding them of the closing date for applications. New applicants come for auditions in early spring and may be as young as 13 and certainly no older than 16, for young people must be members for at least two or three years, preferably longer, in order to benefit from the tuition. They stay with the school until they are 20 years old or until they go to a musical college. Auditions can take place in a candidate's home town, but all finalists, who are auditioned in December, must come to London for one or two days. Even if they are unsuccessful, they benefit from hearing the work of their contemporaries.

Candidates come from all types of school—grammar and secondary modern schools as well as from the public schools. The National Youth Orchestra numbers between 120 and 130 young people, but when it meets as a school there can be as many as 160—for composers, conductors and pianists also attend.

For the past 17 years, the school has been held in a different centre in the country and has helped to raise musical standards and the level of opportunities in the chosen area. But this year, Dr. Railton decided such a policy was no longer necessary—such has been the improvement in musical education and understanding. Thanks to a generous promise by the Croydon Education Authority to provide accommodation every time the school meets, Croydon, on the outskirts of London, will become its permanent base. Many more distinguished musicians will be able to teach at the school now that it is to be held within easy reach of London.

A school term consists of ten days' intensive musical work. General classes for different instruments are held in the mornings. After lunch there is a compulsory one hour's rest or exercise in the fresh air—blowing a horn is hard physical work. An orchestral rehearsal is held from 5 to 7 p.m., and each term a different concert is prepared. After this the young people do not actively participate again, although there will probably be a recital or talk after supper.

Five or six concerts are given each year at centres throughout Britain and concerts have been given in Europe and Israel. Plans for this year's season include two concerts at Christmas, a concert at the Royal Festival Hall, London, in honour of the orchestra's president, Sir Malcolm Sargent, who is celebrating his 70th birthday; and an appearance at the Commonwealth Arts Festival next September.

There are now no major orchestras in Britain that do not contain former Youth Orchestra members; while 75 per cent of all scholarships to music colleges are won by Dr. Railton's pupils. She can look back on many changes in musical education. Brass and wind instruments are now the most popular with children, and no child is deprived of the opportunity of learning an instrument owing to its cost, as local authorities are most generous. While 20 per cent of her pupils take up music as a profession, those who do not do so have, thanks to Dr. Railton, acquired a skill and a pleasure which will last all their lives.

Dr. Railton's genius lies in her remarkable understanding of each child in the orchestra, in her practical and imaginative skill as an organiser, and above all in her powers of leadership which affect all who work with her. Her work has won the respect and devotion of the staff of eminent musicians who, serving the school, not only teach but also share their musical experience with the children. □

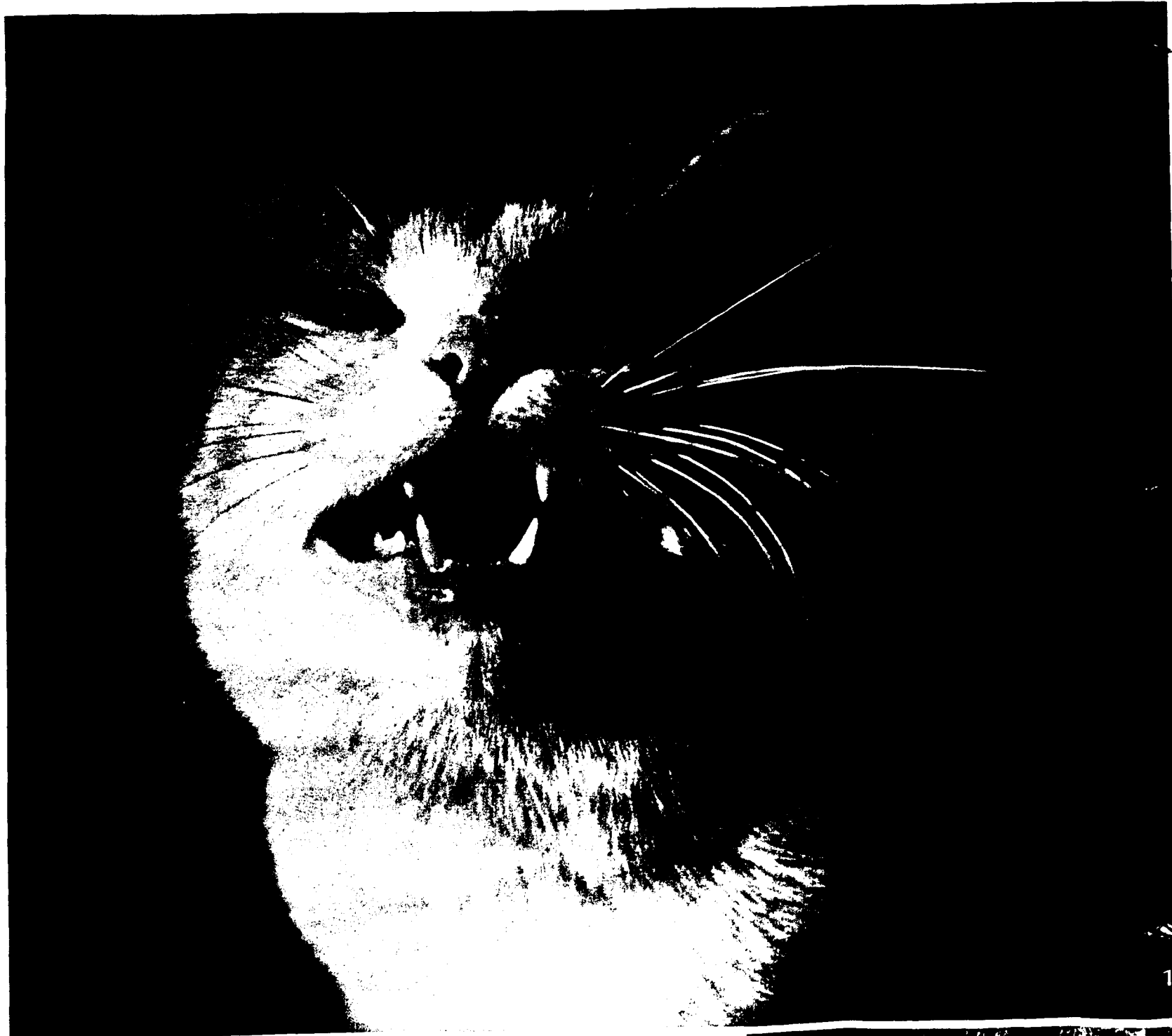


bodies raised donations; the well-known industrialist, Sir Stuart Goodwin, became an influential patron; a grant emerged from King George's Jubilee Trust; and *Daily Mirror Newspapers* offered financial support. The Mirror Group has recently provided fresh accommodation, to the delight of the small administrative staff of the orchestra, who now have two reception rooms, a working room and percussion instrument storerooms so that auditions can now take place on the premises—enjoyed also by the circulation department of a magazine which occupies the floor above.

Dr. Railton and her staff see their work as that of running a school rather than as creating a fine orchestra. Musical education for candidates before they join the school is supervised throughout the year. This requires the closest co-operation between the school staff and music teachers in the provinces and requires a knowledge of where the best teaching is to be found. A boy may be brilliant on the violin but may want to learn a second instrument for which there is no local teaching; a good teacher may retire or leave a district. In such cases, the school finds other tuition and, when needed, arranges for it in one of the big provincial centres—such as Manchester College.

Over 1,000 candidates are auditioned each year—no mean feat of organisation. Circulars are sent out annually to schools

READERS PICTURES



1 Laughing tabby
Akhtar Hussain, 14/42 New Dharampura, Lahore, 15, W. Pakistan

2 Playing the ndiro, a native musical instrument
Udofia A. Inyang, M.B.S.S., P.O. Box 62, Ikot Ekpene, Nigeria

3 Collecting shellfish
Thum Sai Thiam, 46-48 Campbell Street, Penang, Malaysia

4 Children with flowers
P. M. Subba Raja, Jawahar Street, Rajapalayam, South India

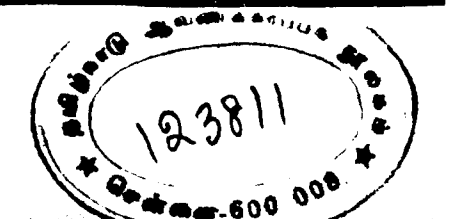
5 Shoeing cattle
T. M. G. Samat, Office of S.E.W.D., P.W.D., Terrington Square, Colombo, 7, Ceylon

6 Pineapple seller
Evans Kariuki, P.O. Box 468, Nakuru, Kenya

7 Fishing in River Murray
J. S. Keallery, 7 Coorara Avenue, South Payneham, South Australia

8 At the circus
Mok Siu Hing, C.L., 93 La Paix Street, Port-Louis, Mauritius

Readers are invited to send photographs which they must have taken themselves. Address and description of the picture should be marked on the back. A guinea will be paid for each photograph published. Photographs, which should be addressed to the Editor, COMMONWEALTH TODAY, Hercules House, Hercules Road, London, S.E.1, will not be returned unless requested.



PRAWN TRAWLING IN CEYLON

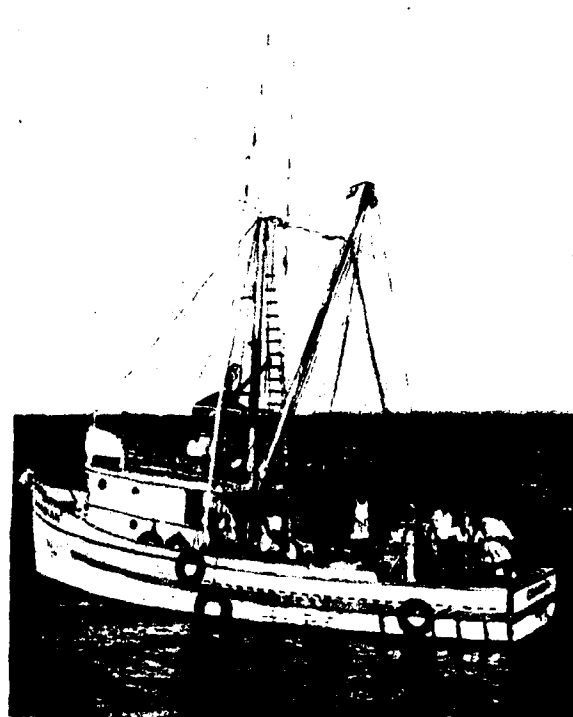
Prawn trawling in Ceylon is not only possible, but can be extremely lucrative, judging by the experiments carried out under the instructions of the Assistant Director of Fisheries, Dr. Weerakoon.

Not all sea beds are trawlable: if the ground has outcrops of coral or other rock, the trawl net will be caught and torn. And where the ground is suitable there may not be sufficient prawns to making trawling worth while.

Until recently, trawl fishing for prawns was limited to a few places along the coast: off Negombo and Chilaw for example.

In 1963 Captain Pyne started exploratory trawling using the Fisheries Department's 42-foot boat, the *Canadian*. Off Karukkapanne a narrow strip of suitable ground was located about half to one mile offshore. Here, in the course of 43 tows, Captain Pyne caught 404 lb. of prawns and 5,018 lb. of fish. Every hour he dragged the net over the bottom of the sea bed brought him 11 lb. of prawns and 136 lb. of fish.

Off Mullaitivu, Captain Pyne was bringing in 50 to 56 lb. of prawns a tow and sometimes between 500 to 1,000 lb. of fish. And it must be remembered that, being engaged in exploratory fishing, he could



Above: the cod end of a trawl net with about 400 lb. of fish
Left: the Fisheries Department's boat, the *Canadian*

never settle down to steady fishing in any location where he found a particularly rich catch: he had to move away in the process of charting the grounds. That he should, nevertheless, bring back almost 150 lb. of prawns and 1,870 lb. of fish for each full night's fishing indicates the promising prospects for the future.



Sorting the catch: nearly 2,000 lb. of fish can be caught on a night's trawling

BRITAIN AND THE COLOMBO PLAN



Miss Chaiwasie, the 6,000th Colombo Plan student, has arrived in Britain. Srinuan Chaiwasie of Thailand, a lecturer in physics at Chulalongkorn University in Bangkok, is on a two-year course at the Battersea College of Technology in London.

Since the inception of the Colombo Plan until mid-1963, Britain has committed over £400 million in gifts, loans, credit and technical assistance to the less-developed members of the Plan: this is in addition to the substantial flow of private investment which, from 1958 to 1962, was estimated at £129 million.

During the next five-year period, 1966-1971, Britain will contribute £15 million for technical assistance: an increase of 50 per cent over the present contribution.

FATTENING FISH IN HONG KONG

Fishing is one of the main primary products of the British Crown Colony of Hong Kong and its fishing fleet of nearly 10,000 junks is the largest of any port in the Commonwealth.

Now a new, rapidly expanding rural fish industry has developed: millions of silvery fish fry are being fattened in specially built ponds to make a significant contribution to Hong Kong's food production.

The fry, the size of an average paper clip, are caught around the Colony's coast or imported from China. In over 350 ponds, covering more than 1,000 acres, they are fattened. The ponds vary in size from one

to ten acres and yield just over one ton of fish per acre per year.

All the fish are fresh water varieties; they are fed on rice bran, dry peanut cakes and soya bean meal with a special ration of green grass for the grass carp.

The fish need a year to reach full growth, but some pond owners start harvesting after six months if there is a big enough demand. Catching the fish for market presents no difficulty with the fish swimming almost nose to tail. Each time the net comes up it is bulging with healthy fish fit for a Chinese banquet.



Two little children who live on board their parents' junk, admiring some small fish they have caught. Their father is a sea fisherman one of the 80,000 people who draw their livelihood from the sea



Pond fishermen using a bamboo sieve to grade fry for sale to fish roasters



New ponds like these near the market town of Yuen Long are being built at the rate of 100 a year to fatten fish in Hong Kong's new rural industry



Mr. Lam Tat Wing of the Yuen Long Fisheries Co-operation Society with a couple of carp caught in one of his ponds

The Falkland Islands



Stanley racecourse—the Christmas meeting



Stanley, East Falkland, where half the people of the Islands live

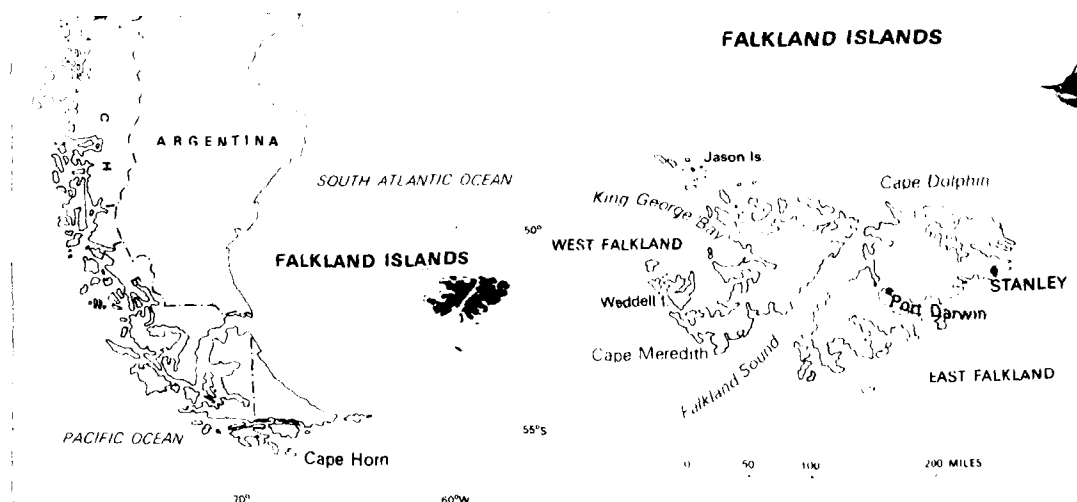


Sheep are brought from one of the outlying small islands

Set in the South Atlantic, 480 miles north-east of Cape Horn, lie the remote group known as The Falkland Islands. The two large islands (East and West Falkland), and some 200 small islands, consist of hilly, treeless moorland with outcrops of bare rock—a total area of 4,618 square miles. They are rarely free from the sweeping high winds for which the climate is notorious: the Islands enjoy a temperature which seldom climbs above 21 C (70 F) or drops below -7 C (20 F).

Yet this small British dependency with a population at the last census in 1962 of 2,172 persons is a healthy and prosperous community. Falkland Islanders regard themselves as British (over 98 per cent of them are British subjects) and wish to retain their connection with Britain. There has been a continuous British settlement since 1833.

Virtually all the land of the islands is divided into sheep runs, for almost the entire income of The Falklands comes directly or indirectly from sheep farming. Life in the Camp, as the part of the Islands outside Stanley is called, has something in common with life in the Australian outback. Roads scarcely exist; the homesteads are connected with Stanley, the capital and only town, by two-way radio; the doctor if necessary, will fly in by aeroplane; and the



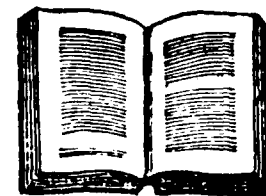
schoolmaster will arrive on horseback and stay for a week or so before moving on to the next station.

About half the land is owned by The Falkland Islands Company—a British enterprise which was founded in 1851 and has played a very large part in developing the islands. Wool production has climbed from 3½ million lb. in 1938 to over 5 million lb. at a value of over £1 million in 1963. Production is expected to go up even more since the survey made in 1960-61 by Mr. A. R. Wannop, Director of the Hill Farming Research Organisation in Scotland, under a

Colonial Development and Welfare Scheme, which should lead to further improvement of pastures.

There is complete full employment on the Islands. Family Allowances and Old Age Pensions are paid; education is free and compulsory up to 14 years; and there is tax relief to assist further education.

The Falklands has an important radio research substation and at Stanley, where half the people live, an aerial has been erected as one of a small network of British satellite Telemetry Stations spaced around the world. □



BOOKS



Johnny Ong

"Young tiger in a hurry"

Sugar and Salt, by Johnny Ong (*Times Press, Anthony Gibbs & Phillips, 1964, 18s.*). "In the village," says Johnny Ong, "we had a proverb: He who tasted sugar and salt has tasted life." This is the basis of this first novel, the story of the little Malayan village in which Johnny Ong was born and bred.

The author has already established himself as a national writer—a fact recognised by his inclusion in the 1965 editions of "Who's Who in Malaysia"—although he is still only 23 years old. He began writing when he was 13, and his schoolboy writings, done in the early hours of the morning after homework, earned him the money for school fees and books. In 1958 he won a scholarship to the Malayan Teachers Training College at Kirby, near Liverpool, England. It was there he wrote "Sugar and Salt".

In Malaysia, people call Johnny Ong "The young tiger in a hurry"; his second novel "Run Tiger Run" is now ready for the publishers.

His future plans include a new collection of verse, a visit to Europe and, of course, a third novel, which he is calling "A Tiger in the Snow".

The world through young eyes

A World Elsewhere: Voluntary Service Overseas, by Mora Dickson (*Dennis Dobson, 1964, 30s.*). Mrs. Mora Dickson helped her husband, Alec Dickson, to found Britain's V.S.O. (Voluntary Service Overseas)—a scheme whereby young people voluntarily spend a year working for communities overseas. The book tells the story of the pioneer 18-year-old volunteers who served in 1959-1962. They came from all walks of life and found themselves in all kinds of circumstances. Their story is told in the words of the volunteers themselves.

through the letters sent home by 350 of them. What emerges is a picture of young men and women seeing the world through awakening eyes and finding themselves accepted by an adult—and sometimes strange—world, and required to do an adult's job.

Education in Nigeria

Nigerian Education, edited by Dr. Okechukwu Ikejiani (*Longmans, Nigeria, 1964, 25s.*). Four experts on education, Okechukwu Ikejiani of the University of Ibadan, Professor John W. Hanson of the University of Nigeria, Nsukka, P. Uduaroh Okeke, the Principal of Our Lady's High School, Onitsha, and J. O. Anowi of the University of Nigeria, have co-operated in this compilation.

First they deal with the foundations of the educational system in Nigeria and evaluate colonial education and the problems it created in independent Nigeria. They then concern themselves with the more urgent problems in Nigerian education today, such as those dealing with industrial and farming efficiency. There is a chapter on education and tribalism. The last four chapters of the book discuss Nigerian universities, their historical background, problems and the principles which should guide them.

This is a valuable book, not only for educationists in Nigeria, but for those in other developing countries as well.

Western Education and the Nigerian Cultural Background

by Otoni Nduka (*Oxford University Press, Ibadan, 1964, 13s. 6d.*). The British colonial regime which began in 1861 ended on 1st October 1960, the day that the Federation of Nigeria became independent.

In this book, Otoni Nduka discusses the points of contact between the British and the West in general and the indigenous people of Nigeria. These points of contact were not only political ones, they involved science and technology, economics, law, religion and education. Analysing the two cultures, the author describes the missionary, imperial and nationalist contributions to the development of Nigerian education.

Community Development: A Bird's Eye View

by Shri S. K. Dey (*Asia Publishing House, 1964, 18s.*). Shri S. K. Dey has been the Minister-in-Charge of the Ministry of Community Development, Government of India, since September 1956, with the additional responsibility for the co-operative movement transferred to the Ministry early in 1959.

As a concept of growth, consistent with democracy both in developed and developing countries, the Community Development Programme is now firmly established.

In India, it depends on three main concepts. The first is known as Panchayati Raj. This is democracy growing from the roots of the past but aiming to seek synthesis with the future—heralded by the Sputnik Age. The second is Sahakari Samaj—economic democracy aiming to achieve synthesis between the

private, public and co-operative sectors in the economy. The third is the chain of associate institutions based entirely on the voluntary effort of individuals gathered together for common purposes.

The author covers the evolution of community development and presents its philosophy and objectives in a concise form easy for the busy man to understand.

Books for children

The Great Plains and The Rivers and Lakes—both by Armand Denis, photographs by Des Bartlett (*Collins, 1964, 12s. 6d. each*).

These two picture books by Armand Denis, with excellent photographs by Des Bartlett, are in the series "My Life with the Animals of Africa".

"The Great Plains" describes the animals such as elephant, rhinoceros, giraffe and zebra and others that inhabit the great plains of Africa. Many of the stories are about the animals that Armand Denis kept as pets.

The second book describes the vast water life of Africa. Both will appeal to animal lovers of all ages.

Ghana in Pictures

by Lydia Verona Zamba (*The Oak Tree Press, distributed by Ward, Lock, 1964, 9s. 6d.*).

This is one of the titles in the Oak Tree Visual Geography Series. It is a book with an educational background which has been planned to give the reader a clear and up-to-date picture of Ghana. Containing over 100 photographs and text, the book gives information about the land, history, government, economy, the people and literature. Other titles are "India" and "Hong Kong".

Exploration of Africa

by Thomas Sterling, *Captain Cook and the South Pacific*, by Oliver Warner (*both published by Cassell, 1964, 21s. each*). The aim of the Cassell Caravel Books is to provide a new approach to history for the young reader. These two new books with Commonwealth themes, have recently appeared. The stories are told by text and illustrations—the latter being selected from paintings, drawings and prints of the period.

Finn the Wolfhound

by A. J. Dawson (*Penguin Books, 1964, 5s.*). This classic has now been published as a paperback by Penguin Books. The original version was some 20,000 words longer and contained material which is not so interesting to readers today.

The author, A. J. Dawson, when still a boy, went to sea as an apprentice and jumped his ship when it docked in Australia. For a time he was a farmer, then later, he joined the staff of a Melbourne newspaper before deciding to become an author.

On returning to England, Dawson also became a well-known breeder of bloodhounds and wolfhounds and it was one of his own dogs who provided the character for his book. It is an account of the relationship between a dog and his master, which results in a tale of high adventure set in England and Australia.

STAMPS

PITCAIRN ISLANDS



One of the most famous—or perhaps notorious—ships in British history is featured on the 1d. value of a new series of stamps issued in the Pitcairn Islands. The ship is H.M. Armed Vessel "Bounty" in which a mutiny broke out in 1789 while she was on a voyage in the Pacific. The commanding officer, Lieutenant William Bligh, Royal Navy, was cast adrift in an open boat with loyal members of his crew while the mutineers sailed off in the "Bounty" to find a refuge where they would be safe from discovery, for execution was the only punishment they could expect if they were arrested.

After settling for a time in Tahiti, nine of the mutineers, with a small number of Polynesian men and women, made their home on the lonely Pacific island of Pitcairn. Lying roughly half-way between South America and New Zealand, the

island had been discovered in 1767 by the British explorer Captain Carteret, and named after the young officer, Pitcairn, who had first sighted it.

Descendants of the "Bounty" mutineers still live in Pitcairn, making their living by fishing and growing fruit, which they sell to ships that call there.

The new series of stamps comprises twelve values and, as well as the "Bounty" on the 1d. stamp, a Pitcairn long-boat is featured on the 3d. and 2d. stamps. All the other values show Pacific wild birds in their natural colours.

The 1s. stamp depicts the black flightless rail, known as the chicken bird, which is found on Henderson Island, one of the three uninhabited islands of the group, the others being Ducie and Oeno. Bosun birds in flight are shown on the 10d. stamp. Also known as red-tailed tropic birds, these seek their food at sea, diving when out of sight of land to catch the fish they eat.

Among other birds featured in this handsome series are the red-footed booby, or Austin bird, on the 8d. value, the Pitcairn sparrow (6d.) and the fairy tern (4d.). The stamps have been designed by Mr. M. C. Farrar Bell and printed by the London firm of Harrison and Sons Ltd.

C. W. HILL

PICTURESCOPE

British Royal Naval frigate for Malaysia • Prime Ministers meet
• British Aircraft for Thai Airways • Buddha relic enshrined in London



The *Hang Tuah*, formerly the British Royal Naval frigate H.M.S. *Loch Lush*, was renamed and commissioned in the Royal Malaysian Navy at a ceremony at Portsmouth, England. Here, His Excellency Tunku Yalacob, Malaysian High Commissioner to Britain, inspects the guard of honour before the ceremony



Indian Minister of Defence, Mr. Chavan, assisted by Indian service officers, lays a wreath on the Tomb of the Unknown Warrior in Westminster Abbey, London. This was Mr. Chavan's first official occasion after arriving in London a few hours earlier for talks with British leaders



Getting together: the Indian Prime Minister, Mr. Lal Bahadur Shastri, and President Mohammad Ayub Khan (right), had talks in the President's house in Karachi



Mr. Fazlul Quader Chowdhury, the Speaker of the National Assembly of Pakistan, talked to Mr. Harold Wilson, the British Prime Minister (left), in London



President Radhakrishnan of India talked to Sir Alec Douglas-Home, former British Prime Minister (right), during his visit to London



The Prime Minister of Singapore, Mr. Lee Kuan Yew (right), met Kenya's Minister for Justice and Constitutional Affairs, Mr. Mboya, on arrival at Singapore airport



Mauritius Ministers of State for Finance, Mr. Davienne (right) and Mr. Tirvengadam (third left) examine a pump assembly during a visit to the Sume factory in Sussex, England



The first of four Hawker-Siddeley aircraft ordered by the Thai Airways Corporation is handed over to Air Vice-Marshal Perm Limpievasti at Woodford, England



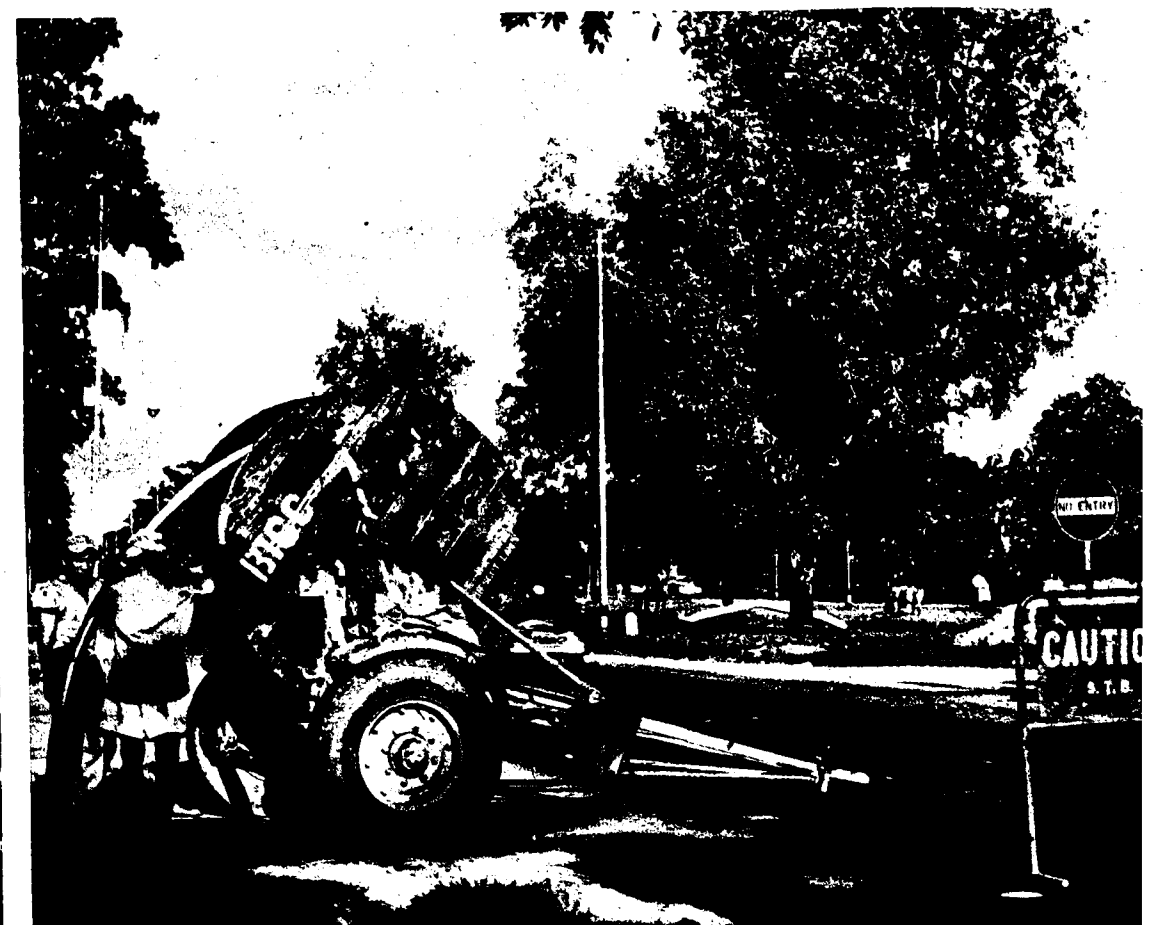
Yellow-robed monks stand in prayer in front of a relic of Buddha contained in a gold casket inside a silver casket during the enshrinement at a temple in the London suburb of Chiswick. The relic is a bone gathered from the ashes of the Buddha after his cremation and is the first genuine relic to be enshrined outside Asia



Mrs. Bandaranaike welcomed on her arrival at London airport bringing the Buddha relic from Ceylon

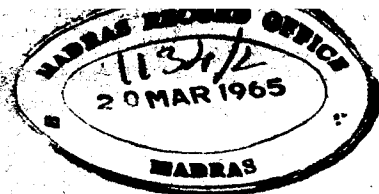


The Prime Minister of Malaysia, Tunku Rahman Putra (centre) entertained Princess Marina, Duchess of Kent (fourth right) to dinner in Kuala Lumpur during her Far East visit



Telephone cable manufactured by British Insulated Callender's Cables Ltd. and supplied to the Singapore Telephone Board, being installed on the Bukit Timah Road, Singapore

Prepared for British Information Services by the Central Office of Information
Printed in England for Her Majesty's Stationery Office by Samuel Stephen Ltd., London



Part of Zambia's Independence Day celebrations was a youth display at Lusaka's Independence Stadium, which President Kaunda presented new colours to the nation's Boy Scouts and Girl Guides

COMMONWEALTH TODAY





SIR WINSTON CHURCHILL 1874-1965

Descendant of famous ancestors, he helped to create the present and shape the future. For, if any one man could be said to have swayed our destinies, it was Winston Spencer Churchill, with his particular genius. A legend already in his lifetime, he was the greatest Englishman of our age.

Sir Winston's forceful life was studded with colourful, daring deeds. There was one striking quality which inevitably emerged. He would never capitulate. "Never give in! Never give in!" he reiterated. "Never yield to force." He was willing to talk and negotiate—but before threats he never surrendered.

History will record his many and varied moments: his greatest was in 1940 when the bastions of Europe were falling before the Nazi armies. He was the one man in England whose stature was great enough to take power in such a headlong crisis, and overnight he marshalled all Britain behind him.

With his tireless efforts and glowing eloquence he symbolised an indomitable spirit of resistance that inspired the nation when Europe was overrun. He ignored any possibility other than victory. He imparted his determination to the British people at a time when many others were fearing that Britain's doom was imminent.

War leader and statesman, soldier and parliamentarian, social reformer and painter, journalist, writer and historian in the classic tradition, he crammed many lives into his ninety years—the Churchillian era.

In politics he had his bitter reverses—but he never despaired. As lasting failure was unthinkable, he bided his time to

reappear on the scene when the people needed him. With his steel-hard toughness and abounding resilience he always recovered from his setbacks, and was magnanimous to his former opponents.

As he said of himself, he was a servant of the House of Commons—with an unshakable belief in democracy and all its principles. He accepted the decisions of the electorate without complaint even when they voted him from office in 1945 after he had been a prime architect of victory.

His unaffected gestures—the quick impish smile, the jaunty V sign, the inevitable cigar—they had a touch which linked him with the ordinary man. That touch he never lost. He responded as readily to the waves of half a dozen well-wishers on the pavement as he did to the acclaim of a massed gathering.

His activities on the stage of world events were so colourful that sometimes his other work is overlooked. However, he had great concern for the underprivileged and less fortunate, and he fought for social reform.

After the second world war he remained ahead of his times and urged the need for Western co-operation and the Atlantic alliance, and the strengthening of the ties of Commonwealth. Among the Commonwealth leaders he formed many deep and personal friendships.

Himself above the conventions of any particular society, he stressed the need for mutual understanding and tolerance between the Commonwealth's varied peoples, classes and creeds, as one of the safeguards for world peace and the future.

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Specially trained Health Visitors make daily journeys to remote parts of the countryside in the British Crown Colony of Hong Kong, bringing medical treatment. Here, Nurse Tang tells a little Cantonese boy a story about ducklings. Later she will visit his parents and talk to them about health education



Ceylon pilots, Captain Mawalegoda (left) and Captain Ferdinand (right), have a final word with the test pilot of Avro Whitworth at Woodford, Manchester, in England, before flying the Hawker Siddeley 748 to Ceylon. This is the first of a number of the aircraft to be delivered to Ceylon Airlines



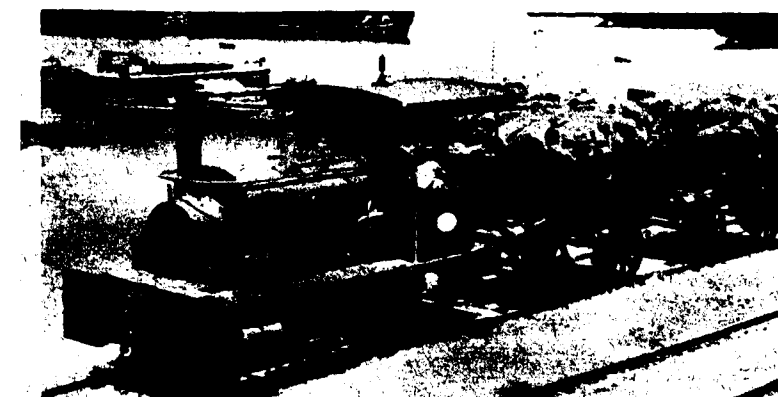
The Chief Scout of the Commonwealth, Sir Charles Maclean (centre), inspects Scouts at Jesselton prior to "turning the first sod" on the site of a new Scout headquarters in Sabah



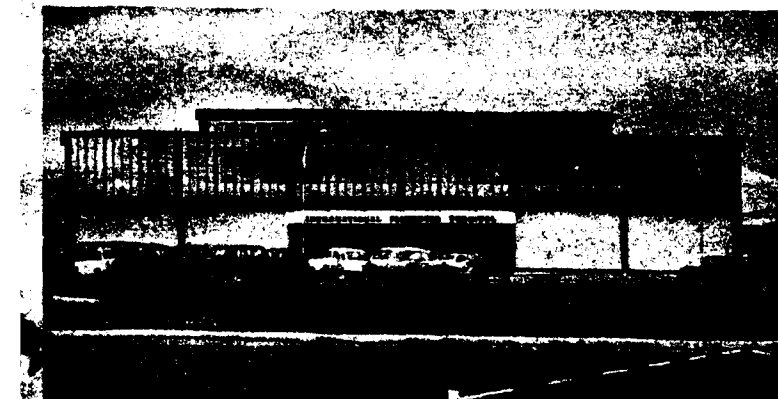
Norman Byham, a 26-year-old R.A.F. Corporal, from Ipswich, England, has been so interested in the boys of the Salvation Army Home in San Hock Road, Kuching, Sarawak, since he became their Cubmaster, that he has been visiting them two or three times a week, staying for up to six hours at a time. Here, he demonstrates to an admiring audience how to tie knots

PANORAMA

PEOPLE AND PLACES IN THE NEWS IN BURMA, SABAH,
HONG KONG, CEYLON, SINGAPORE, SARAWAK AND AUSTRALIA



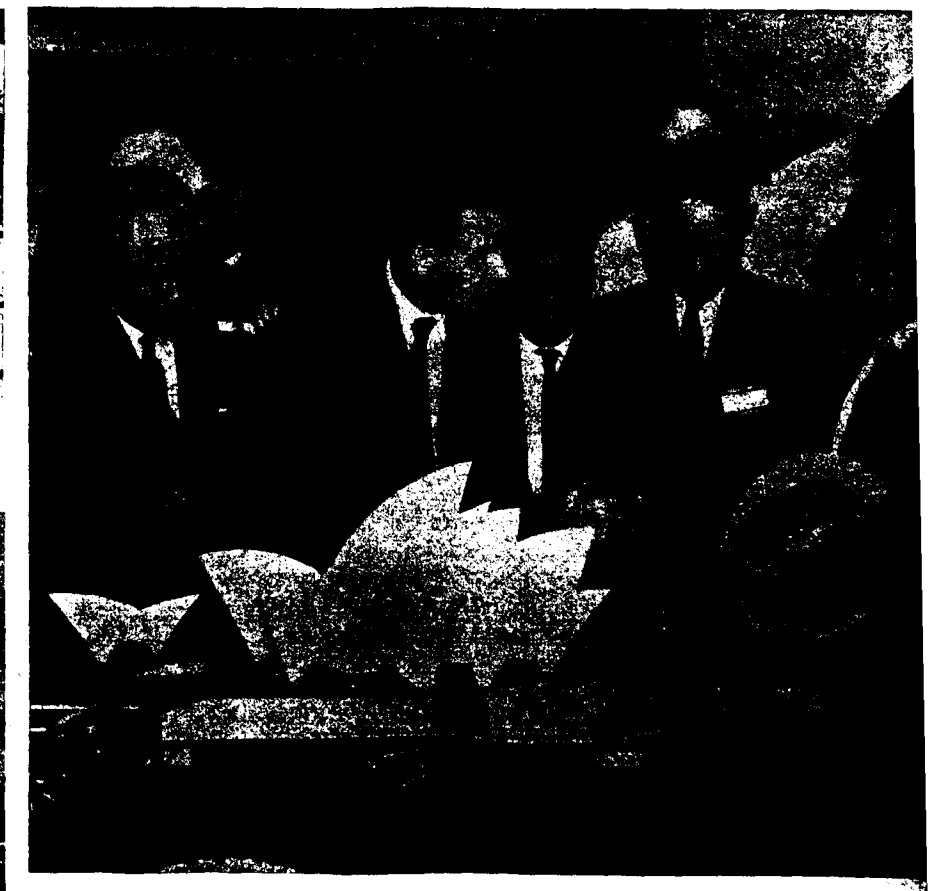
This 13-ton steam engine, manufactured by the Hunslet Engine Co., of London, has been chugging around Colombo dockyards since 1894—and it's still going strong and good for many more years



The new International Passenger Terminal building at Paya Lebar Airport, Singapore, was financed by the British Government



A young Burmese boy is initiated into the monkhood. It is compulsory for every Burmese boy to become a monk for at least a week

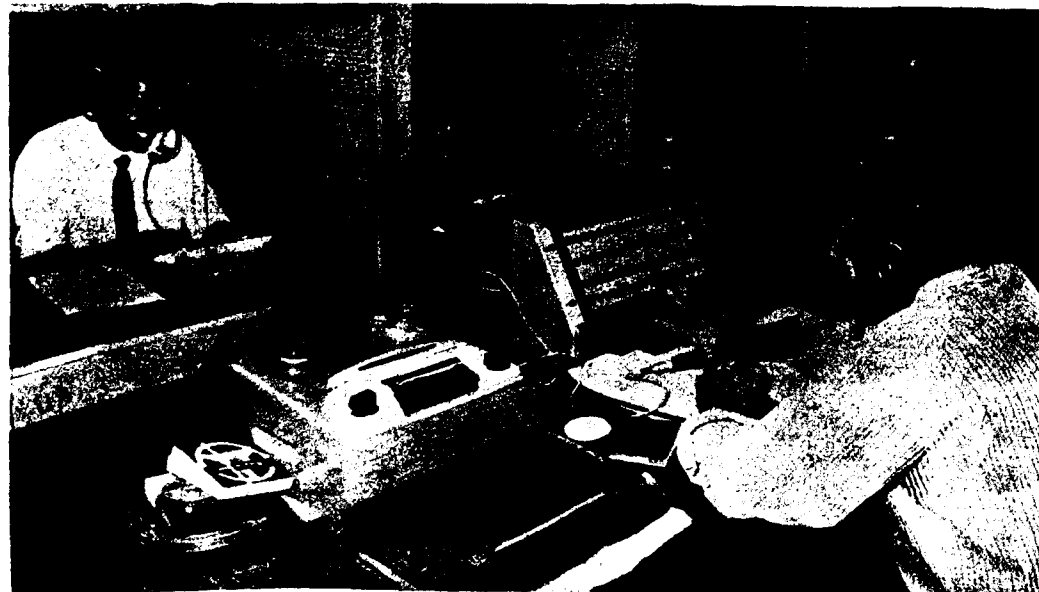


Over 20 countries were represented at the Asian Broadcasting Union's First General Assembly held in Sydney, Australia. Here, delegates inspect a model of Sydney's Opera House to be completed in 1968

LANGUAGE LABORATORIES

By Norman E. Willis, Editor, 'Visual Education'

acquiring the correct accent



Modern technological methods in teaching are now being applied in Britain and elsewhere in the Commonwealth to meet the demands for more and better education. The past few years have seen the progressive introduction of tape-recorders, closed-circuit and broadcast television, 8 mm film projectors, programmed instruction machines and overhead projectors, along with the development of established aids such as sound films, filmstrips and slides, and sound radio broadcasts.

But of all these new techniques, the one which has created most interest and achieved the most immediate results, has been the introduction of audio-visual (sound and sight) methods of language teaching. Much greater emphasis is being placed on the pupil's ability to *speak* fluently and confidently in the language he is learning. To achieve this, the language material is presented by the use of tape-recordings linked to projected pictures. There are several ways in which such methods can be employed, but there is a steady increase in the number of special "language laboratories" designed for the presentation of this type of language course.

Such a language laboratory will consist of a number of booths inside which the children or students are seated at their own individual tape-recording units. The teacher controls the class from a Console through which he is in full command of the lesson, listening to the students as they work, correcting individual faults, giving instructions and talking privately with any student who is in difficulty or requires particular attention.

The dialogue for the course is recorded by two or three native speakers in the language being taught. Each phrase is separated by a pause during which it can be repeated by the student. Still pictures illustrate each phrase, and are projected in synchronism with the tape.

The master tape-recording is played on the Control Console tape deck and is simultaneously recorded on one track of the tape in the students' units. At the same time the students, seated in the privacy of their booths, hear the recorded sound through their headsets and see the illustrations projected on the screen. During the pauses between phrases the students repeat the phrase and their attempt is recorded on the other track of their booth tape-recording units through the microphone which forms part of their headsets.

On playback the student compares his pronunciation with that of the master recording. He can go back and re-record his response any number of times until he—and his teacher—are satisfied with the results. During this work he can erase his own recordings any number of times, simply by making a new one. But he cannot erase the recording on the master track; this can only be done from the Control Console.

In this way the teacher has at his command the services of several "voices" whose native

Learning languages. Above left: a student repeats a phrase which is recorded on tape. Left: students in Uganda learn English by the same method, supervised by a British teacher. This British Council language laboratory is one of many installed in the Commonwealth



language he is teaching: voices which never tire, whose accent never lapses. The student, working in a degree of (at least apparent) isolation which overcomes his feelings of shyness and fear of ridicule by his fellows, can rely on those same voices to repeat, for him alone, each phrase as many times as he feels necessary to ensure comprehension.

The language laboratory can, of course, be used to teach any language at all. But it can have particular advantages for teaching a language like English which serves as a major means of communication throughout the world. The range of different types and ages of voices on the recording enables the student to get used to hearing spoken English from several different people. The master recording provides the teacher with a permanent "reference" for his own accent, ensuring that he keeps it in line with what is best in modern spoken English.

Many Commonwealth countries are now taking advantage of this method of teaching English. With the help of the British Council, language laboratories are now in use in Ghana, Nigeria, Sierra Leone, Tanzania, Uganda, Kenya, Basutoland, Malta, India, Pakistan and Malaysia and more will be installed. Most are to be found in teacher-training colleges or in centres where those who teach English can benefit from them. Overseas students in London attending courses in English at the British Council centre also use a language laboratory.

Although language laboratories look complex, they are quite easy for teachers to control and for students to operate. Modern British equipment has been developed in the light of intensely practical experience in English schools.

The headmaster of one of the first secondary schools in England to be equipped found that his 11-year-old pupils needed only ten minutes' instruction to become fully capable of operating the machinery. And although the teacher's Control Console is more complex, experience has shown that operation of the switches required soon becomes "second nature".

But a language laboratory is only as good as the course of recordings and pictures which it uses. It does not eliminate the need for the teacher—indeed it makes him more necessary than ever to act as guide and invigilator whilst work in the laboratory is under way; to provide intelligent and meaningful class-room work before and after the laboratory sessions; and to build on the solid basis of spoken language which use of the laboratory provides. It must be remembered that this method provides a sure and concentrated way of teaching the spoken language—which with a world-wide language such as English is a most vital necessity. But reading and writing in that language *must* be taught by traditional methods, although it has been shown that this task is made easier once the students are confident that they can converse in the strange tongue. □

School children like the new methods and learn to handle the equipment with ease. Language laboratories play an important part in adult education. Businessmen are among those who appreciate the speed with which they can acquire a foreign language.

GIBRALTAR THE ROCK



A horse-drawn carriage (top left) in "Gib's" main street where (bottom left) British sailors, and tourists, rub shoulders with Gibraltarians
Left: A huge man-made water catchment on the hillside
Opposite page: The Rock, which has 25 miles of roads tunnelled inside it. Beyond lies Spain

EVERY year nearly 120,000 ships, flying every known flag, pass in each direction through the Strait of Gibraltar, where Africa and Europe almost meet at the western end of the Mediterranean Sea. Dominating the Strait is the most familiar rock fortress in the world—Gibraltar, nearly three miles long, three-quarters of a mile wide, and towering 1,398 feet above the sea. The British flag has flown over "Gib" since 1704, and the 25,000 people of this tiny democracy continue to take great pride in their association with Britain and the Commonwealth.

Consistently Britain has prepared her dependent territories for the independence which so many of her former colonies now enjoy. Gibraltar has made considerable economic and constitutional progress, and in September 1964 her people chose a legislative council elected entirely by popular vote under a new constitution.

Gibraltar, however, is not on the verge of independence in the now familiar pattern. Her people do not ask for it, and this was made plain to the world by the chief member of the Gibraltar Legislative Council, Sir Joshua Hassan, and the Leader of the Opposition, Mr. Peter Isola, when they attended the United Nations committee on decolonisation in New York.

Sir Joshua said that Gibraltar wanted friendship with neighbouring Spain but did not want to be Spanish. She could not, because of her small size and lack of agriculture and minerals, become a fully independent self-supporting nation. She wished to continue her association with Britain. "This," he added, "is the free choice of the people of Gibraltar, and I, their spokesman, before this committee, am entitled and empowered to say so with the full backing of the whole of the people of Gibraltar."

When they returned to the Rock the two delegates found shops and offices closed and the entire population of Gibraltar gathered to greet their champions with roars of delighted approval.

Without agriculture, minerals, and with industry limited to fruit and fish canning, tobacco processing and coffee-blending, how does Gibraltar make a living?

Over many centuries of turbulent Mediterranean history the Rock has been valued as a military base—impregnable, easy to reach by sea (and latterly by air), with deep water harbours and a pool of local labour. Gibraltar has relied heavily on the presence of British military personnel and upon military expenditure, although Britain has also given financial aid to Gibraltar for development schemes.

The harbour has been developed for civil as well as military purposes. Many of the thousands of passing ships avail themselves of the repair facilities available.

Then there is the tourist trade. Direct flights from London bring holidaymakers by the hundreds. Most are "birds of swift passage", continuing to other parts of southern Europe or embarking for North Africa; but they stay long enough to see the legendary Rock Apes, of which it is said that as long as they thrive Britain will remain in Gibraltar; and they go on spending-sprees along Gibraltar's main street, which gets so crowded that no vehicle can move except in low gear.

Gibraltarians have adopted many British habits. For example, if you live on the Rock and want to play football, hockey, water polo, squash, badminton, tennis; or practise photography, drama, horticulture, archaeology, art; or take up rowing, swimming, music, chess; or keep cage birds; there is a club to welcome you. Even the policemen are carbon copies of the British-style "bobby".

Gibraltar has been a bastion of Britain and the Commonwealth for more than 250 years. She is likely to remain so, with the full consent, and indeed, the enthusiastic support of her people.





1. Indian air hostesses

LOOKING AT BRITAIN

Visitors from Commonwealth Asia come to see and study...

1. Indian air hostesses, after completing a six-week training course, are working for the BOAC Asian routes. From left: Miss Bina Tanwar, Miss Kalpana Gaur and Miss Anwar Quadir, at London Airport.

2. Members of the Royal Commonwealth Society, Miss P. Dimney and Miss D. Dimney, from Malaysia, meet Princess Alexandra, Patron of the Companions of the R.C.S. under-25 section, at a reception in London.

3. Burmese Information Officers, visiting Britain as guests of the British Government, examine an operations desk in the international control room at the B.B.C. Television Centre. Left, Captain San Win and U on Pe.

4. Pakistani CENTO student, Mr. Badruddin Anderabi, carries out a diagnostic examination of a turkey under the supervision of the Poultry Pathologist at the Central Veterinary Laboratory in Weybridge. Mr. Anderabi, from Punjab University, is in Britain for postgraduate training on a Central Treaty Organisation Fellowship.

5. Malaysian Parliamentarians visit the Palace of Westminster during their tour of Britain. Mr. Vanderfelt, Secretary-General of the Commonwealth Parliamentary Association General Council, points out the landmarks.

6. The Bishop of Hong Kong, the Rt. Rev. R. O. Hall (left), talks to the Rev. S. Y. Lee who, with his daughter, has come to London to serve as director of the new social centre for Chinese workers at St. Anne's Church.

7. Pakistani film star, Miss Norr Jehan (right), and dancer Miss Emmi Minwalla pictured in their dressing room in Bradford. With other Pakistani entertainers they were on an eight-week tour of Britain organised by the Lahore Social and Cultural Society.

8. Professor K. C. Mukerji from India, working in the laboratory of the Imperial College of Technology in London; he has been awarded a bursary to study for a year under the Royal Society and Nuffield Foundation Scheme.

9. Thai telephone executives welcomed on arrival in Britain by Mr. Ellis and Mr. Scott of the Associated Electrical Industries. Lieutenant-General Pachorn Nimibutr (left), Director-General of the Thailand Telephone Organisation, was accompanied by Mr. Chorn Kedcharoon, chief engineer.

10. Mrs. Bandaranaike of Ceylon, attended an Oxford University debate and was presented with a framed order paper of the famous Union debate of 1924 when her late husband helped to defeat a motion that "The maintenance of colour barriers is consistent with the progress of civilisation."



5. Malaysian Parliamentarians



6. Chinese social workers



Pakistani entertainers



8. Indian Professor



9. Thai telephone executives



10. Mrs. Bandaranaike at Oxford



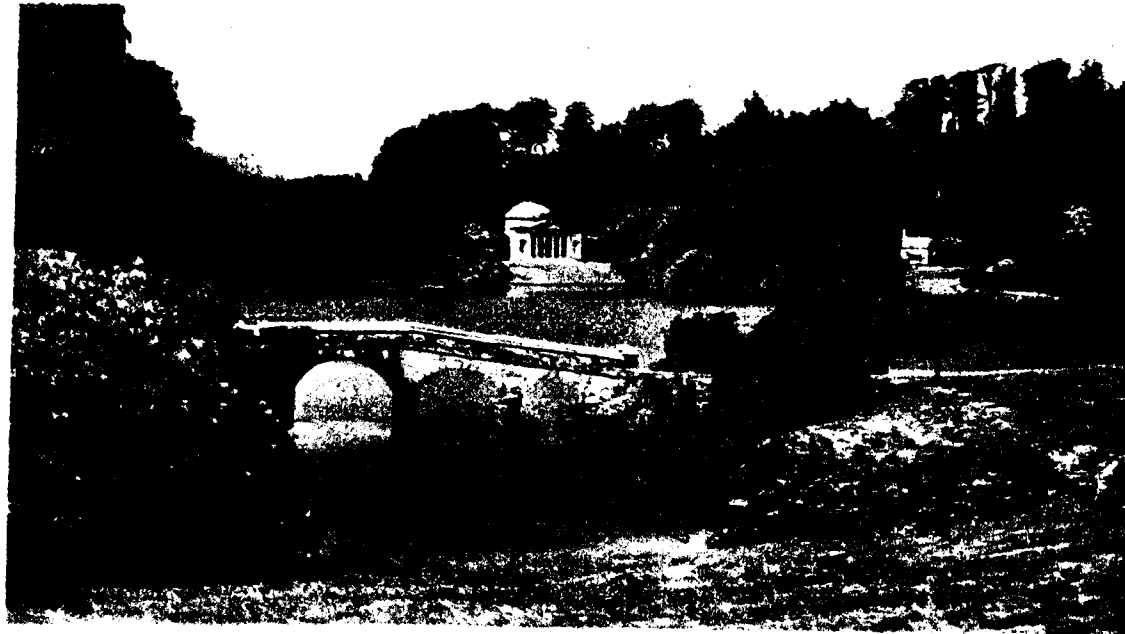
Britain in Trust

The National Trust owns 3½ miles of Hadrian's Wall and some of its best-preserved castles and forts. The Wall, originally 73 miles long, was built in AD 122 by the Roman Emperor Hadrian to keep the warlike Scots from invading England

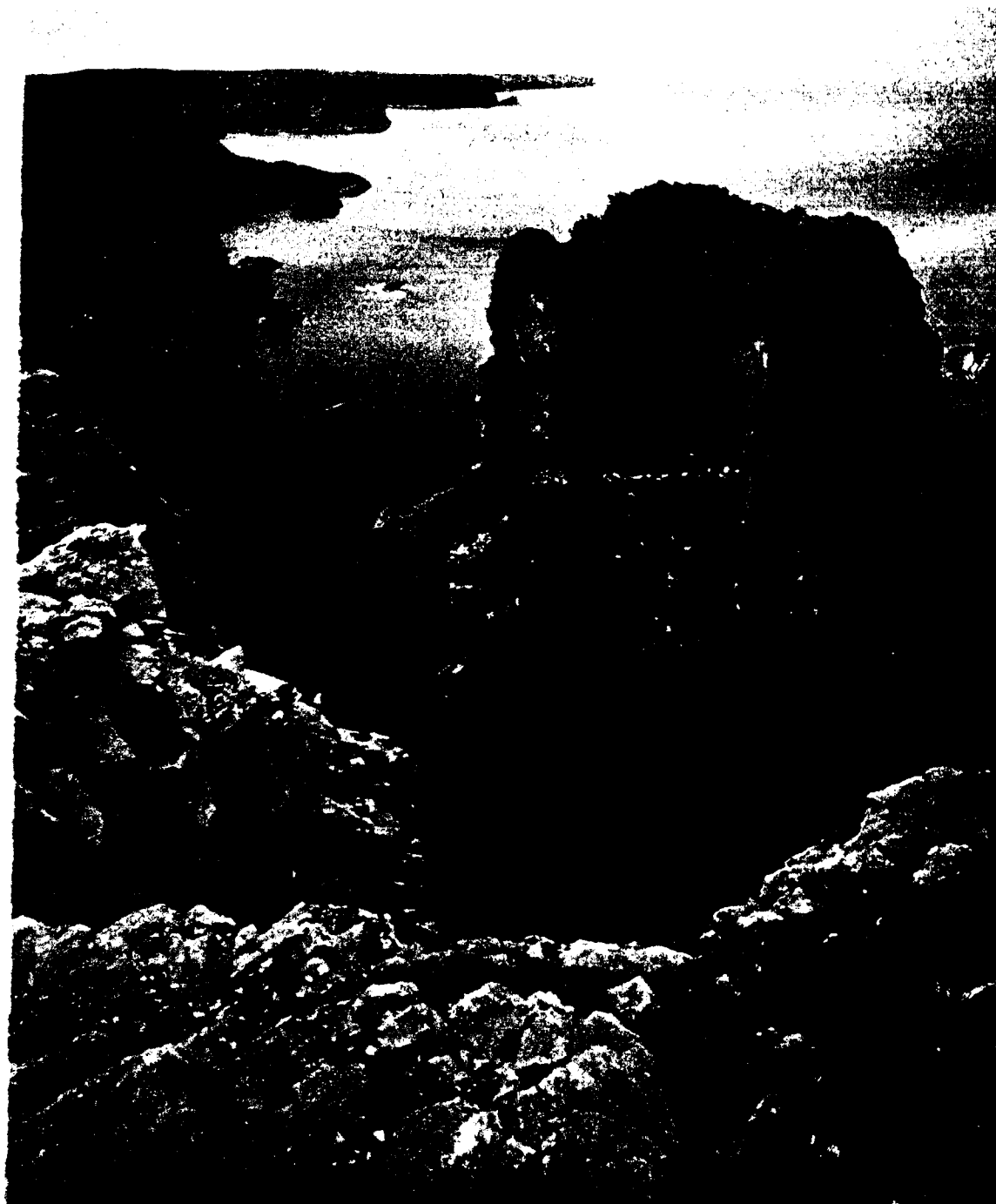
Stourhead, Wiltshire. Here the Trust owns 2,507 lovely acres and Stourhead House, which was built in the 18th century and contains many works of art including furniture by Thomas Chippendale. The House stands beyond the lake



Climbers on Great Gable, one of the many rock climbs classified from "easy" to "very severe" in Britain's Lake District. Most of this part of the country, immortalised by the Lake Poets, is a National Park, and within the park the Trust preserves many assets for the nation, including entire lakes and mountains



Part of the great Jacobean house called Blickling Hall, Norfolk, which was acquired by the Trust, with 4,500 acres, 24 farms and 123 cottages, twenty-five years ago



Stack Rocks, Pembrokeshire, South Wales, is typical of the remote, still untouched coastal scenery of Britain which the National Trust, with public support, tries to preserve



In well populated modern Britain space has to be found for new housing, industry, roads, power lines. It has to be done, if possible, without destroying the natural beauty, and the many places of historic and architectural value, which are the heritage of the nation.

The strongest of several bodies dedicated to preservation is the National Trust, which was started in 1895 by three people—a parson, a solicitor, and a woman welfare worker—who foresaw the growing threat of industrialism to the English countryside and ancient buildings. The Trust was incorporated as a charity with power to acquire and preserve for the nation places of interest and natural beauty.

The first land to be acquired was 4½ acres of cliff in North Wales, and the first house to come to the Trust was a 14th-century timber-framed Clergy House at Alfriston, in Sussex. Property was acquired by legacy, gift, and purchase with funds donated by the public, and in 1907 the Trust was incorporated by a special Act of Parliament which provided that its property should be preserved in perpetuity. In other words the Trust cannot sell or mortgage its land, which cannot be acquired compulsorily without the permission of Parliament.

In 1937 a further Act enabled the Trust to hold country houses and their contents, as well as open spaces and ancient buildings. Under this scheme the Trust has kept intact and accessible to the public more than 120 country houses with their irreplaceable collections of pictures, furniture and works of art.

Some of these houses are still occupied by the former owners, who are tenants of the Trust so long as they permit public access. Some are divided into flats, some used as schools and colleges, some as holiday homes or Youth Hostels. The former homes of such diverse people as Kipling, Coleridge, Wordsworth, Ellen Terry, Thomas Hardy, T. E. Lawrence, Carlyle, Beatrix Potter, and Bernard Shaw, are now owned by the Trust, whose properties include entire villages, over 500 farms, historic ruins and mills, abbeys, a mediæval inn and post office, the remains of the Roman Hadrian's Wall, an 18th-century cotton mill, bird sanctuaries and nature reserves.

The Trust owns more than 1,000 properties in England, Wales and Northern Ireland—there is a separate Trust for Scotland—and, with 350,000 acres, is the biggest landowner in Britain. A further 55,000 acres are protected from development by restrictive covenants. In 1963 the Trust spent £1,400,000 maintaining and improving its properties and £240,000 on administration.

The Trust is governed by a Council, some of whose members represent other bodies prominent in Britain's national life. Other Council members are elected by the 150,000 ordinary members of the Trust, who pay a yearly subscription of £2 and gain admittance free of charge to all Trust properties. Eighty-two local committees exist, comprising volunteers with expert knowledge of estate management, architecture, the fine arts, forestry, horticulture and publicity. They give their valuable services to the Trust for nothing.

Although the National Trust has existed now for 70 years, it still has an important role to play in the preservation of the best of Britain. In 1965 it has launched a £2,000,000 appeal—"Enterprise Neptune"—to prevent what remains of Britain's coastline from being developed and lost perhaps for ever. □

CARPET WEAVING

—one of the oldest crafts of Pakistan

BACK in the Stone Age they had leather carpets in Pakistan; they were made of sun-dried hide or skin, and later were dyed dark red and yellow. Those made in the Lower Indus Valley had colourful embroidered cloth stitched around the border.

Today there are five kinds of carpets made in Pakistan: Darees, Multan Khes, Bahawalpur rugs, Namdas and knotted carpets.

Darees are the most popular floor covering; they are made all over Pakistan in cotton, using various colours and designs.

Multan Khes, a speciality of the Middle Indus Valley, are thin cotton carpets. The yarn is hand spun and vegetable dyes lend a rich lustre to the colour.

Bahawalpur rugs are thicker than khes but have the same kind of geometric designs, although the colours are not as brilliant. White and black are usually used to produce striking effects.

Namdas, felt carpets, are commonly produced



Skilled Pakistani craftsman at work weaving a carpet with a typical design

and used in West Pakistan and are believed to have given rise to the art of knotted carpet weaving. They are made of pressed, rolled wool, usually have a white base and are richly embroidered with coloured silk or woollen threads. Designs are both geometric and floral. Namdas are cheap, durable and suitable for both indoor and outdoor use.

The knotted carpet industry was encouraged during the Mughal period. Lahore was the centre of the industry which was mainly a family

enterprise, but today carpets are made in organised workshops with good quality raw materials and fast dyes and are very durable.

As a result of Islamic influence, Turkish, Persian, North African and Pakistan (Lahore) carpets have a similarity of motif and technique. Nevertheless, each is distinctive in its own way. Local influences, indigenous raw materials and climatic conditions give Lahore carpets a character all their own.

Zafar Mansoor

NEWS NOTES



Mr. Yvon Dupuis, Canadian Minister without Portfolio presented Mr. Osman Ali with the report of Chittagong Hill Tracts Forest Inventory Survey

Canadian Minister without Portfolio, the Hon. Yvon Dupuis, visited Pakistan at the invitation of the Government. In Karachi he presented Mr. Osman Ali, Secretary, Economic Affairs Division, with a recently completed report on the Chittagong Forest Inventory Survey: a Canada/Pakistan Colombo Plan project.

Five Pakistan doctors who have just finished studying in Scotland have been elected members of the Royal College of Physicians of Edinburgh. They are: Dr. Muhammad Najeeb of Rawalpindi; Dr. Khawaja Jaleel of Lahore; Dr. Abdul Biloo of Karachi; Dr. Tahuddin Manjo of Karachi; and Dr. Mohammed Haque of Dacca. Election to the Royal College is conferred on doctors who have distinguished themselves in postgraduate studies.

Cotton production in Pakistan exceeded the current Five-Year Plan target of 2.3 million bales in 1963/64. Estimates for 1964/65 show that production may be as high as 2.6 million bales.

BICC contracts: a £270,000 contract for power and control cables and accessories for the Pakistan Mangla Dam project on the River Jhelum, about 50 miles from Rawalpindi, has been given to British Insulated Callender's Cables Ltd., by the West Pakistan Water and Power Development Authority. The cables are for the first three 100 MW generators in the power house at Mangla Dam—one of the largest earth-filled dams in the world. BICC have completed a contract for WAPDA for the supply and installation of 11 kV 3-core paper-insulated cables between Dhammandi thermal power station at Dacca, the capital of East Pakistan, and the new East



The "Fateh", first of two bucket dredgers specially built for Karachi Port Trust, starts on her journey down the slipway at Fleming & Ferguson's shipyard at Paisley in Scotland

Pakistan radio transmitter at Savar, 17 miles away. To avoid ditches and marshy land the cable has been routed along the embankment of a newly constructed road which will form part of the Asian Highway connecting Dacca and Calcutta.

Two bucket dredgers, built by the Scottish shipyard of Fleming & Ferguson Ltd., will help in the maintenance of Karachi as a port for giant vessels. The first dredger, the *Fateh* will sail out to Karachi

PAKISTAN'S FRONTIER TEA SHOPS

ALONG the north-west frontier of Pakistan you will find the mountain wayside teashops.

Under the simple mud-plastered roofs, spirals of smoke rise slowly from the top of huge brass samovars, surrounded by an infinite variety of teapots and little china bowls. The shopkeepers squat on the floor, filling each teapot with boiling hot water, and handing it over to one of the boys to serve the customers by putting a small quantity of tea-leaves and sugar in the pot along with the china bowls. The customers sit around the shop on unobtrusive pieces of furniture like wooden cots, netted with jute twine.

The tea is served without milk as it is not the usual black type but has leaves of bottle-green colour which give it its name of "green" tea. It is especially made for the frontier people and retains the green colour of the dried and roasted tea-leaves by some special process.

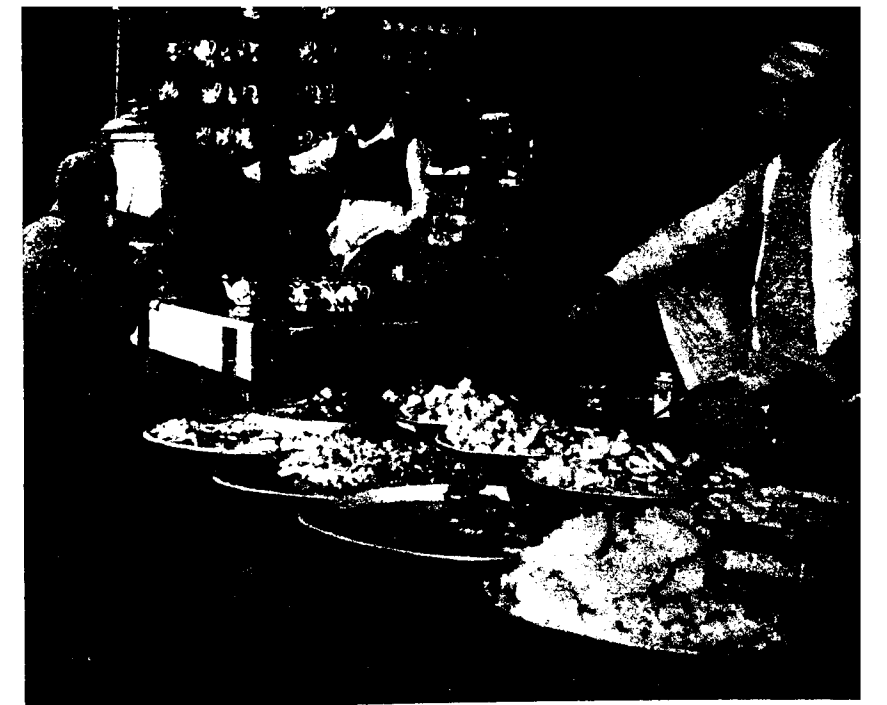
As the tribesman sits over his pot of tea, consuming bowl after bowl, he takes continuous puffs from the *chilam*, the locally made hubble-bubble provided free by the shopkeeper.

Often there is a stall adjoining the teashop where kebabs sizzle on the coals as they roast on their skewers, and minced meat cakes called *chappli kabab* are browned in huge frying pans on charcoal fires. For those in need of a heavier meal there are huge discs of bread served with a variety of fried sparrows, quails, chickens' legs and small fish.

Sometimes there is not enough space for all the customers inside the teashop, so the nearby boulders are occupied with equal ease.

But whatever the altitude you can be sure of finding a teashop with the tribesmen smoking their blues away amidst clinking china bowls.

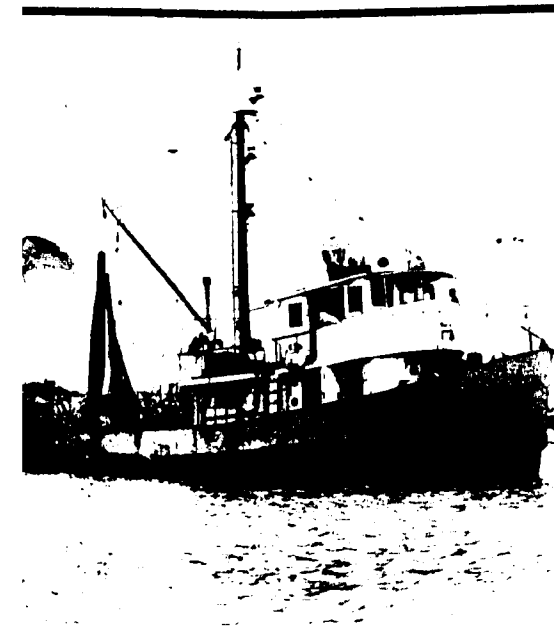
A. B. Rajput



Tea and snacks in the frontier area of Pakistan. The teashop on the left contains the usual array of samovar, teapots and crockery; the foodstall displays snacks to be served with the tea



A grocery shop in the frontier area selling a variety of green leaves and sugar



The trawler "Jalwa" recently undertook a survey of fishing potential in the rivers and estuaries near the Matiya and Sandwip islands. Here she is arriving in Dacca with her five-day haul of 8½ tons of fish

this spring and will be followed after the 1965 monsoon by her sister ship. The *Fateh* has been especially designed to operate continuously in all seasons, including monsoons.

Future outlook: within the next 20 years, Pakistan hopes to treble her national income and double the *per capita* income. It is also expected that full employment will be provided for the entire labour force and universal literacy will be achieved by 1985.



Typical teashop with the shopkeeper squatting on a platform beside a samovar of boiling water, the customers sitting on a jute-twined wooden cot

A scene from the ballet "Sleeping Beauty", with two of Australia's leading dancers, Marilyn Jones and Bryan Lawrence



The Australian Ballet

The year 1965 will be a memorable one in Australian theatre. For the first time a major Australian company will undertake a comprehensive international tour. The Australian Ballet performs at the Royal Opera House, Covent Garden, as part of the Commonwealth Festival of Arts opening in London and other British cities in September.

It was in 1911 that a touring company from Europe first took ballet to Australia. The touring Pavlova company of 1926 included a 17-year-old Australian youth, Robert Helpmann, and in 1939 the visiting international Ballets Russes Company gave the Australian

artist, Sidney Nolan, his first opportunity as a stage designer.

Two members of the latter company remained in Australia and laid the foundations for Australian professional ballet. Edouard Borovansky, a great mime, opened a ballet school in Melbourne in 1939 with 35 pupils; five years later he had hundreds. Helen Kirsova, who married an Australian, formed a school in Sydney and, like Borovansky, ran her own professional company.

The only large-scale company to persist into the 1950s was Borovansky's. It featured such accomplished dancers as Kathleen Gorham, Marilyn Jones, Elaine Fifield, and although it was disbanded and re-formed several times, it succeeded in keeping the flame of ballet alight in Australia.

In 1959 Borovansky died, and the following year the Australian Elizabethan Theatre Trust, which had been started in 1954 by public subscription to commemorate the first visit to Australia by Queen Elizabeth, joined with J. C. Williamson Theatres Ltd. to undertake the establishment of a permanent company.

In 1962 the Australian Ballet Company was born. Since then a host of internationally famous stars, including Dame Margot Fonteyn, Rudolf Nureyev, and the Dane, Erik Bruhn, have visited Australia as guest artists.

No ballet company, however, can thrive indefinitely on a diet of classical ballet alone. Ballet is a living art form, always eager to experiment, or it will wither and die. The vitality of Australia, the stimulus given to the arts by the strong contrasting colours of the Continent and the variety of the scenery, the sense of being a young and still-developing country, helped to ensure that the Australian Ballet would confidently look forward and develop native talents and themes.

Having absorbed the Borovansky Company, the new Australian Ballet Company was able to retain the services of Peggy Van Praagh, who made her name with Dame Ninette de Valois and the Sadler's Wells Theatre Ballet in London, as artistic director. Mr. Geoffrey Ingram, who was born in Melbourne and worked as a professional dancer, was appointed Administrator in 1963.

It was essential for the Ballet to set up its own school as soon as possible so that young dancers could be trained in a uniform style. A school was opened in February 1964 with 24

young dancers of talent, seven being boys of 15 to 19 years who had done their basic training at one or other of Australia's astonishing number of about 600 schools of ballet.

The Australian Ballet is therefore a very young company, but it has already some claim on international interest. At the 1964 Adelaide Festival there was given the world premiere of a new work on an Australian theme. It was the product of a very distinguished collaboration, produced and choreographed by Robert Helpmann, with decor by Sidney Nolan and music by another compatriot working in London, Malcolm Williamson. Unanimously acclaimed by public and critics alike, it is a work of considerable beauty and very real dramatic intensity, providing Australian leading ballerina Kathleen Gorham with every opportunity to display her impeccable technique and strong dramatic qualities. The name of the ballet is "The Display", a term used in ornithology to describe the efforts of the male bird to attract the female.

Other productions in the repertoire unfamiliar to European audiences will draw upon the wealth and variety of Australian talent. The distinguished Australian conductor, Charles Mackerras, provides his own special orchestration of Aubert and von Suppe for the gay "spoof" on Australia's major sporting event, the "Melbourne Cup". Set in the 1860s, it is a colourful ballet of horses and jockeys framed by all the Victorian gloriana of colonial Australia.

Distinct from this again will be the second work of Helpmann's mounted by the company—"Yugen". This ballet was due to have its premiere in Adelaide in February 1965, and the music was specially commissioned from the eminent Japanese composer, Yuzo Toyama.

Other works, either new to Europe or rarely seen, are "Just For Fun", by the English Ballet Master of the Company, Ray Powell, and "Jazz Spectrum", a colourful abstract of modern movement. In addition, of course, the repertoire includes the full-length "Swan Lake", "Giselle" and "Les Sylphides".

In November 1964, Australia's Minister-in-Charge of Commonwealth Activities in Education and Research, Senator J. G. Gorton, announced that the Government would give £A45,000 towards the estimated cost of sending the Australian Ballet, and the Sydney Symphony Orchestra, to the Commonwealth Arts Festival. A major factor in the maintenance of the Company in Australia has been the widespread support of leading business firms operating in Australia—firms such as BP (Australia) Ltd., Rothmans, and the Bank of New South Wales.

The Company looks forward eagerly to the experience of its first European tour, which will give it an opportunity to meet other Commonwealth artists and to display its own ballet to a wider audience.

In the words of the Company's Administrator, Mr. Ingram, speaking in London to a COMMONWEALTH TODAY representative: "In bringing itself to the critical notice of the European ballet public the Australian company does not attempt to represent a new or original school of classical dance. The Australian Ballet is a young and developing company. Its achievement is in the freshness and vitality of its approach to the individual art forms that comprise the theatrical complex of the ballet." □



"The Display" is an Australian ballet in which the mating dance of the native Lyre Bird is interwoven with human attitudes and aspirations. Top, opposite page: Robert Helpmann, producer and choreographer of the ballet, talks with Kathleen Gorham, Australia's leading ballerina, and Barry Kitcher, who plays the Lyre Bird. In the adjoining picture Miss Gorham is seen in a menacing scene from the ballet, and (above) in a climactic moment from the finale. This is Miss Gorham's greatest role to date

National Institute of AGRICULTURAL ENGINEERING

In April 1960 the Engineering Division of the National Institute of Agricultural Engineering (NIAE) at Silsoe, Bedfordshire, England, was asked to design and develop an agricultural toolbar with qualities that would be particularly valuable to peasant farmers in Asia and Africa. It would have to be an implement that could be pulled by oxen, able to tackle a great variety of jobs, and be relatively cheap and easy to maintain.

Money was provided for development purposes under the Colonial (now Commonwealth) Development and Welfare Scheme, and by the end of the year the first version of the toolbar was being tested in operation in Uganda and Tanzania. As a result of these tests a redesigned implement was developed and tested in The Gambia, Swaziland and Basutoland.

In January 1963 a British commercial firm made toolbars based on the Institute's design for use in Nyasaland (now Malawi), and in May field trials were organised in Northern Nigeria.

In June 1964, seventy of the bars, complete with ridgers, seeders, and other equipment, were ordered for The Gambia and introduced to farmers there with the assistance of a member of the Overseas Liaison Unit attached to the NIAE. The function of this unit, which is financed by the Ministry of Overseas Development, is to investigate the needs in developing countries for agricultural machinery, undertake the initial study of the problems involved, specify the type of equipment that should be designed to meet these needs, and assist the NIAE in the development of prototypes.

While The Gambia experiment was proceeding, another version of the toolbar, designed to clear higher-growing crops and more suited to conditions in East Africa, was being developed at the Institute. In November 1964, this was tested in Malawi. In December 1964, a further 100 toolbars were ordered for The Gambia with the prospect of more orders from other parts of Africa.

This timetable illustrates the painstaking development of one item of specialised agricultural equipment and is fairly typical of the work being done at the NIAE, which is one of a family of research institutes grant-aided by, and under the supervision of, Britain's Agricultural Research Council. Devices developed at the Institute for use overseas include a one-wheel-drive tractor and a small portable rice thresher which is being manufactured by a British firm and is proving popular in South-East Asia. A padi transplanter will shortly be tested in the Far East, and the Institute is helping another British organisation concerned with overseas agriculture, the Tropical Products Institute, in its investigation of cashew nut decortication.

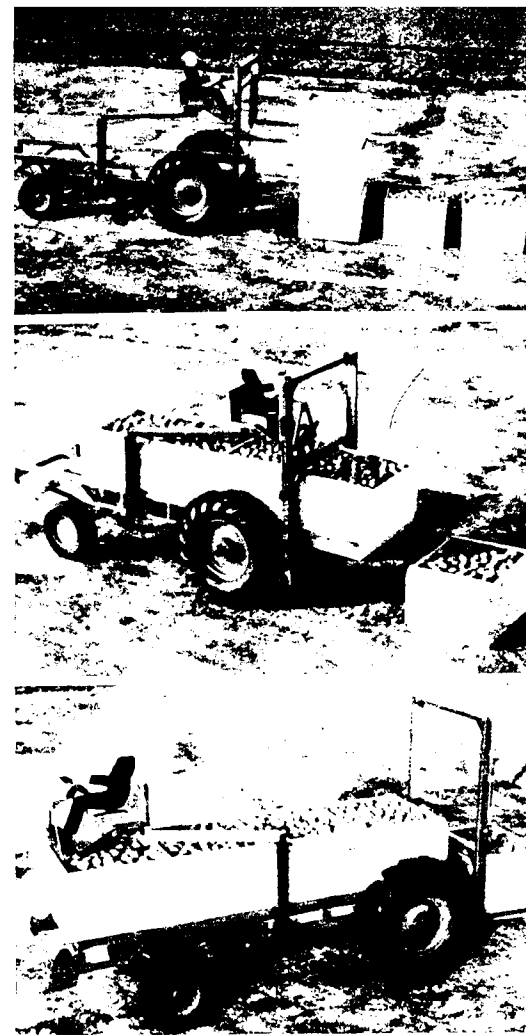
Most development work going on at the Institute, however, is calculated to benefit British agriculture, either directly through the development of new machines which may, ultimately, be taken up by commercial manufacturers or indirectly through the provision of new and better research tools, which enable other research workers in the field of agriculture to do their jobs more efficiently.

Situated in a converted large country house in 300 acres of parkland which is open to the public at week-ends, the Institute has a staff of about 360 and—apart from the Overseas Liaison Unit—is based on four functional Divisions: Engineering, Environmental Control, Mechanisation, and Information. The organisation is flexible, so that projects are readily

transferred from one Division to another and specialised groups of experts are formed and re-formed as required. Of course, the commercial farm implement manufacturers in Britain carry on their own intensive research and development, but the Institute still finds plenty to do particularly in development work in which commercial firms are not over-active.

Institute engineers were the first to design and build a relatively small grain drier. They developed a sugar-beet seed rubbing machine for research purposes which greatly saves labour—for unless a beet seed is "rubbed" it produces perhaps four plants, three of which have to be eliminated later. They perfected a humane rabbit trap, an automatic controller for grain driers, equipment to measure carbon-dioxide concentration in glasshouses, apparatus for measuring the performance of farm machines, and a machine for harvesting small plots of peas which reduces the time that has to be spent on a plot from two hours to four minutes. The Institute also pioneered the idea of hydrostatic transmission in tractors.

At the moment the Mechanisation Division is working on machines called self-loading vehicles, which, unlike tractors, are basically load-carrying vehicles. They are designed to pick up, transport and unload materials on the farm, and may travel at higher speeds than tractors on public roads. As over half the man- and machine-time on farms is expended handling materials, whether they be fertilisers or harvested crops, an efficient machine of this



A model of a machine being considered at the Institute for handling loads on farms and travelling on public roads. The vehicle approaches the boxes of potatoes (top picture), lifts them and stows them (middle picture), and finally the driver swings on an arm to the other end of the vehicle which is then driven away

type would be a boon.

A valuable service provided by the Institute is the testing of farm equipment, both prototypes of new machines—in which the test results are communicated to the manufacturer in confidence—and production equipment, when the results are published as test reports for users and supplied to all subscribers (the annual subscription is 3 guineas). Testing takes place under NIAE supervision on commercial farms and in the Institute's laboratories. In addition, a User Experience Survey is conducted on machines which have been purchased by farmers through normal trade channels, to obtain further information on durability and on the performance obtained by users in different parts of the country.

Manufacturers and importers may enter individual machines for test and they are from time to time invited to enter Series Tests (current examples are fertiliser broadcasters, balers and seed drills), which consist of machines of the same general class being tested simultaneously. Reports on the individual machines are published and in the case of Series Tests, a composite report is also usual. These reports help users to select an appropriate machine for a particular job and, when they have bought a machine, help them to get the best out of it.

An important factor in farm productivity is the good health of workers such as tractor drivers. A farm tractor is a functional, unsprung vehicle which transmits every jolt to the driver. Tractor drivers can suffer from deformities of the spine and stomach complaints as a result of their calling, and this is why small improvements in such things as seat design, for example, may have quite disproportionate beneficial effects. Tractors, indeed, can be lethal; they have large rear wheels, a high centre of gravity, and overturn easily on slopes or when attachments bog down in soft ground.

The Institute has been analysing the noise and vibration of a variety of farm machinery, including tractors, from a health point of view. It has been smashing two-ton weights, pendulum-fashion, against tractor cabs to test their strength and resistance to distortion should the tractor overturn and roll down a hill. A device has been developed which, fitted to a tractor cab, will prevent the machine from rolling and crushing its driver.

The 1962-63 annual report of the Institute lists more than 300 items of work being carried on in the various departments. Some of this research and development may benefit farmers everywhere, and some will interest only the specialist and the research worker. Some of it will be successful and some may come to nothing. All of it, however, in an age in which increasing mechanisation is an important factor in world food production, is necessary, and complements the work of very many other centres of agricultural research in Britain and the Commonwealth overseas. □



A one-wheel-drive tractor working in The Gambia. A petrol-engined model of this Institute brainchild has been in commercial production for some time, and in 1964 a diesel-engined version was tested. Right: Testing a device which prevents an overturning tractor from rolling and crushing—possibly killing—its driver. The Institute has done much work concerning the safety and good health of agricultural workers



This small portable rice thresher, designed at the Institute and made by a British firm, is proving very popular in South-East Asia where it is of great assistance to farmers in double-cropping areas where the time factor is important between harvest and transplanting. The Institute is developing a simple padi transplanter which will shortly be tested in the Far East, and an animal-drawn toolbar that has been widely tested in African countries

READERS PICTURES



1 2



3

Readers are invited to send photographs which they have taken themselves. Address and description of the picture should be marked on the back. A guinea will be paid for each photograph published. Photographs, which should be addressed to the Editor, COMMONWEALTH TODAY, Hercules House, Hercules Road, London, S.E.1, will not be returned unless requested.

1 Local transport S. M. Lucy, P.O. Box 2470, Musa Yar, Adua Street, Lagos, Nigeria **2 Young woodman** Miss A. Fey, Unu Boys' School, Makwanu, North Malaita, British Solomon Islands **3 Siesta time** P. V. Subramaniam, 10 Chinnakadai Street, Tiruchy-2, S. India **4 Hedge sparrow at nest** David G. Long, The Green, Gavinton, Duns, Berwickshire, Scotland **5 Happy faces in the padi field** P. Chan, P.O. Box 180, Kuala Lumpur, Malaysia **6 Ancient trees of Mughul Dynasty** Wasiullah Bahar, Munsif Quater, P.O. Comilla, East Pakistan **7 Patiently waiting** Stanley Lees, 10529 135A Street, N. Surrey, British Columbia, Canada



4 5
6 7



TEACHING TOPICS

Throughout Asia education is of prime importance; everyone is eager to learn . . . and British experts are ready to teach



Mr. Munro, an expert in Town and Country Planning, from the Ministry of Overseas Development, in conference in Penang with the State Planning Officer, Mr. Chung Weng Foo (sitting), and City Planning Officer, Mr. Lam Tim Fook of Georgetown



Mr. Frank Dent, a graduate volunteer, recruited through International Voluntary Service, teaching English in the College of Education at Soi Prasarnmitre, Bangkok. Mr. Dent, from Cheshire, England, is a graduate of the University of Hull



Mrs. Keable with some of her pupils at the Pure Life Society in Kuala Lumpur. She came to Kuala Lumpur for through International Voluntary Service and taught history to Indian and Chinese children



Adult education in a village near Calcutta: the women are learning to write (above)

A Punjabi girl takes her work outside into the garden to study (below)



Two Indian girl university students working for their exams in a student hostel in Madras. India's oldest universities—the Bombay University and the Calcutta University—have been established since 1857



In Ranikhera village, near Delhi, three volunteers—two nurses and an agriculturist—at work during a week's orientation programme. They are Service Civil International Volunteers from Britain working in India for at least a year



Advice and assistance in setting up the new optical workshop at the Indian Institute of Technology, New Delhi, is being given by British expert, Mr. W. E. James, senior technician in the Applied Optics Department of the Imperial College of Science and Technology, London. He is seen here with a group of students and members of staff



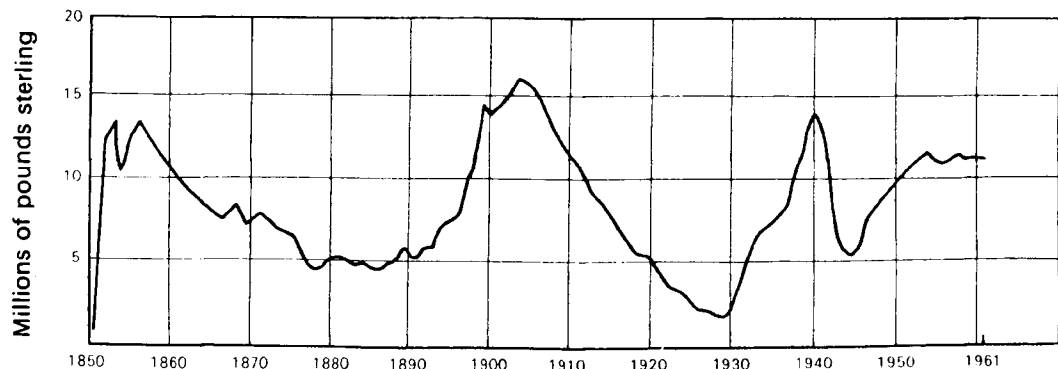
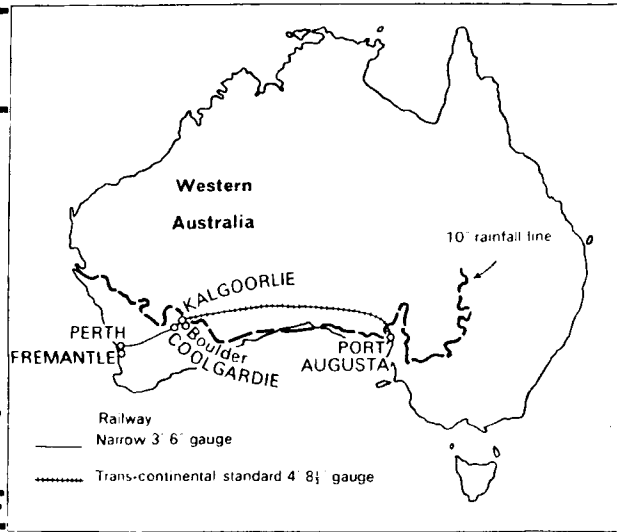
Eleven-year-old Jasmin Ansar is the first Pakistani and the first Muslim ever to attend Christ's Hospital, one of Britain's leading public schools. She was one of five out of five hundred girls who won £400-a-year scholarships



Miss Dorothy Spengler (left) midwifery adviser in the College of Nursing at the University of Medical Sciences in Siriraj Hospital, Dhonburi, Bangkok. Miss Spengler was recruited by the British Ministry of Overseas Development

GEOGRAPHY STUDY BY L. DUDLEY STAMP

KALGOORLIE AND COOLGARDIE



Graph showing value of the production of gold in Australia



Hannan Street, the main thoroughfare in Kalgoorlie

LESS than 300 years ago the great island-continent of Australia—three million square miles—was not only almost uninhabited but was also unknown to the peoples of other lands. For millions of years it had been cut off from the rest of the world's land masses by barriers of ocean. The animals and plants which evolved in that long period of isolation have given Australia a fauna and a flora, and consequently a scenery, which are unique. Amongst the animals, one thinks at once of the distinctive kangaroo, and amongst plants of the great range of eucalypts. The aborigines or native inhabitants of Australia are likewise very distinctive: they seem to be allied to the early cave men—Neanderthal or Mousterian man—of Europe, and may have fled to Australia when later types of man took possession of Europe and Asia. But they do not ever appear to have been numerous and when the white man discovered Australia very large areas were quite uninhabited.

Among the peoples of Europe the existence of great land masses in or beyond the southern ocean had long been a matter of firm belief. There was

somewhere a *Terra australis incognita*—Latin for unknown southern (australis) land. It was natural that when a southern land was discovered it should be called Australia. The first white men to sight the continent were probably the Dutch in 1606 and the Spaniards in the same year, followed some 36 years later by the explorer Tasman.

But there was little cause for excitement in the new discoveries—a forbidding coastline, often backed by desert; no settlements with which trade might be established, or any evidence of wealth or important natural resources. More interest was aroused when the great Captain Cook explored the fertile east coast in 1770. In due course small settlements were established, for one reason or another, on some of the more fertile or attractive parts of the coastlands, but the settlers had little reason to penetrate far inland from their coastland centres.

In the west Captain Vancouver took formal possession of the land in 1791, but not till 1829 did Captain Stirling establish Perth and Fremantle.

Then came what we should now call the major breakthrough. Gold was discovered in Victoria and

New South Wales in 1851. It was alluvial gold—that is to say, fine particles or gold dust, together with larger pieces or nuggets, in the sands of stream beds. Riches could be had for nothing: just washing or "panning" the river sands. Soon the gold rush was on. During 1851 to 1855, it is estimated that half a million migrants came to Australia hoping to get rich quickly. They penetrated towards the heart of the continent from many directions. Gold was discovered in many parts of Australia, but everywhere—as is the rule throughout the world—the alluvial deposits were soon exhausted.

It had taken thousands, perhaps millions, of years for the particles of gold to be washed out of the solid rock and accumulate, because of their weight, in the "pay streaks" of sands and gravels. Gold mining only becomes a major industry when the gold is traced back to its source in the solid rocks. The gold rushes of Eastern Australia had died down when, after some small earlier finds, gold was discovered in Western Australia at Coolgardie (1892) and Kalgoorlie (1893), and a new gold rush took place.

The gold was soon traced to the ancient crystalline bed rocks and the twin settlements, only a few miles apart, sprang up—Kalgoorlie and Coolgardie. They were on the desert margin and access was difficult. The famous Coolgardie Camel Express (which stamp collectors remember because of the special stamps issued) was in operation for some years, but soon the narrow gauge (3ft. 6in.) railway had reached out from Perth and its port Fremantle 380 miles away. Machinery for crushing the ore and extracting the gold was sent there in great quantities, the towns were laid out in broad streets, fine stone buildings began to replace the temporary shacks. By 1898 Western Australia led all the States in gold production.

But gold mining is always uncertain. A rich gold-bearing vein, when followed downwards, may suddenly peter out, a large ore body may become poor in gold content, so that the value of the gold does not cover the cost of working. Or there may be changes in world demand for gold. Look at the graph (left), which shows how Australia's output of gold has fluctuated. Up to the middle of 1964 about 182,000,000 ounces of fine gold has been extracted, out of which 65,000,000 ounces came from Western Australia—the greater part from the Kalgoorlie-Coolgardie area. Fortunately, before the first slump, Kalgoorlie had taken on a new importance. Before the days of air travel and the great development of roads and motor cars, the Australian Government sought to knit the several States more closely together by building railways. So a line—standard gauge of 4ft. 8½in.—was built from Port Augusta in South Australia, a thousand miles from east to west across the level and plains to Kalgoorlie in Western Australia. Incidentally it does not cross a single river, and has the longest stretch of absolute straight railway anywhere in the world.

When I first visited Kalgoorlie and Coolgardie—travelling across the continent by the railway from the east in 1925, the boom towns were a sad sight. The roads had been laid out but few completed. Among old decaying shacks one found an isolated permanent building—probably a bank. The towns had already made stupendous efforts to overcome natural disadvantages. Already in 1903 the Goldfield Water Supply system had become world famous; water was piped 352 miles from the Darling Ranges—up to 5,000,000 gallons a day. Yet Kalgoorlie and Coolgardie seemed on the way to becoming ghost towns. The 1900 population had slumped from 30,000 to less than 10,000 by 1930, and faith was being placed on the development of pastoral farming in the dry surrounding country.

But ore bodies of great extent were proved: as shown in the graph, gold production took a sharp turn upwards in 1930 and climbed to a new peak in 1940 when war conditions intervened. The war over, Kalgoorlie (with Boulder adjoining) and Coolgardie were on the up again, firmly established as the leading gold-mining area of Australia. Today they are fine flourishing cities: Kalgoorlie-Boulder had nearly 22,000 people at the last census (1961). Out of the million ounces of gold a year, or rather, over, which Australia now produces, between 80 and 85 per cent comes from Western Australia, most of it from the Kalgoorlie area.

BOOKS

Book notices prepared with the co-operation of the National Book League.

ARCHITECT'S VIEW

New Buildings in the Commonwealth: Editor J. M. Richards (*Architectural Press, 1964, 56s.*). The first half of this finely produced book is concerned with the three older members of the Commonwealth—Canada, Australia and New Zealand, which for the most part lie in the temperate zones. The second half covers the younger Commonwealth countries which lie, in a general climatic sense, in the tropics. This work illustrates by the use of photographs, sketch plans and texts, the buildings which are appearing in the Commonwealth and describes some of the local conditions which give these buildings their particular character.

The collection of material for the whole book would have been impossible without the help of those architects in each territory who made a preliminary choice and gathered together photographs and plans from which the final selection was made.

A GOOD TEXTBOOK FOR SCHOOLS

The Lands and Peoples of East Africa, by G. M. Hickman and W. H. G. Dickins (*Longmans, 1964, 14s. 6d.*).

This school certificate Geography is intended as an introduction to the geography of East Africa, and it should prove useful to those sitting the Cambridge Overseas School Certificate and to young teachers in Africa and elsewhere. But any intelligent reader might well like to have it on his bookshelf.

The physical and human problems of East Africa are discussed in the first section. These problems include those of rainfall, soils and their use, temperature, pests and diseases, relief and communications, as well as the diversity of peoples in East Africa. Part Two consists of studies of peoples and places, and is divided into regions: the coast of East Africa, The Plateaux and the Highlands. Part Three summarises the progress so far shown in these territories and considers the ways in which the land is used, the production for export, the development of industry and the distribution of population. This work also contains a selective book list for teachers and School Certificate Examination questions.

INDIA'S WISDOM

Facets of Indian Thought, by Betty Heimann (*George Allen & Unwin, 1964, 25s.*).

When Professor Betty Heimann, late Professor of Sanskrit and Indian Philosophy, University of London, died suddenly in May 1961, she left two unpublished books, "Hindu Thought in Illustrations", and the present collection of essays, "Facets of Indian Thought", which she wrote over a number of years.

Professor Dandekar of the Bhandarkar Institute, Poona, India, in his foreword describes Professor Heimann as one who had extraordinary insight into India's speculative wisdom and who presented the thought-world of India and the West in their proper perspective.

Consisting of a number of essays, each complete in itself, the book deals with the problems of Hindu metaphysics, religion, ethics, logic, mathematics, psychology, geography and etymology.

AFRICAN STUDIES

Africa and the Islands, by R. J. Harrison Church and others (*Longmans, 1964, 40s.*).

Four authors who have been in Africa on many occasions and for long periods have combined together to produce this book. They know much about the areas on which they have written, in fact three of them have taught in varied types of schools in Africa and Europe, and three again have held posts in African as well as British universities or training colleges. They have avoided the tendency to concentrate solely on Commonwealth areas, and by the use of texts, maps and photographs, have dealt with Africa as a whole.

Divided into two parts, Part One is concerned with African history, the physical environment, the peoples of Africa and their modes of life. Part Two, which constitutes a greater part of the text, is sub-divided into North-west Africa, North-east Africa, West Africa, Western Central Africa, East Africa, Southern Africa, and the African Islands of the Indian Ocean. This balanced and accurate survey forms part of an intermediate series of geographies under the editorship of Professor R. W. Steel.

STORIES FROM THE PAST

Maori Myths and Tribal Legends, by Antony Alpers (*John Murray, 1964, 30s.*).

The myths and legends of the Maori people—those Polynesians who moved to the cooler islands of New Zealand from "Hawaiki", the mythical Polynesian homeland—were first collected at a time when it was still possible to get them in good condition, when the scholar-governor Captain Grey was sent to New Zealand at the age of 32. Grey concluded that an understanding of the mythology of the people would make him a better governor so he decided to collect and study the legends and poetry of the Maoris.

In 1854 a book now called "Nga mahi nga tupuna" (The Deeds of the Ancestors), a collection of the Maori language of myths, legends and other stories, all of which according to Grey, were either written down from the dictation of their principal chiefs and high priests, or compiled from manuscripts written by chiefs, was published in London. In the following year, a translation was published by John Murray under the title "Polynesian Mythology and Ancient Traditional History of the New Zealand Race, as furnished by their Chiefs and Priests".

Antony Alpers, who is a New Zealander, wants to rescue the Maori myths from the children's bookshelf and make their qualities as widely known as they

deserve to be. In "Maori Myths and Tribal Legends", the stories are presented in modern English and illustrated by Patrick Hanly, another New Zealander.

The first part contains the mythology-proper of the Maori—those myths that he brought with him from "Hawaiki". This is followed by a selection of the best "canoe" traditions, the fabulous histories by which the various Maori tribes laid claim to their lands and recorded their descent from certain ancestors in their mythical homeland.

USEFUL HANDBOOK

Science For All: An annotated reading list for the non-specialist (*The National Book League, London, 1964, 9s. 6d.*).

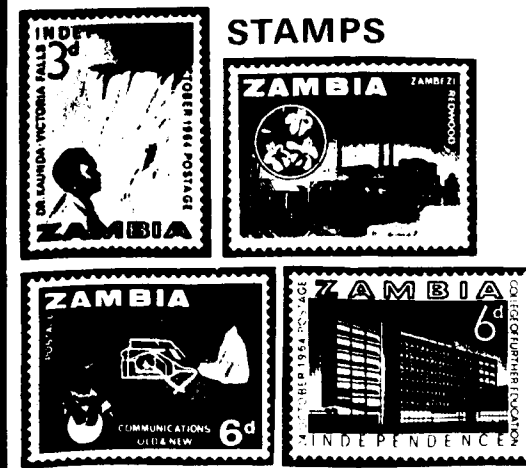
This book, which has been prepared in consultation with The British Association for the Advancement of Science, provides a selected list of books which will help the non-specialist to understand the scientific implications of the world in which he lives and the specialist to learn something about the activities of his fellow workers.

The list covers all the main sciences and includes sections on technology, automation, genetics and evolution. Each book mentioned is briefly described.

LEARNING ABOUT TEXTBOOKS

The importance of an adequate supply of textbooks was re-emphasised at the last Commonwealth Education Conference held in Canada. A number of students are now in London learning all aspects of textbook production. Their course covers editing and publishing, the size of market, cost of production and production methods and distribution. British publishers are co-operating with the University of London Institute of Education, and students are spending short periods with individual publishers to learn the practical side of the work.

The students, 14 in all (some of whom appear in the picture below), come from Barbados, Bechuanaland, Brunei, India, Malaysia, Nigeria, Pakistan, Tanzania and Uganda. Their course includes outside visits to book supply centres such as that of the School Equipment Division of the London County Council, where teachers can come and see the books they may want to order for their schools.



Formerly known as Northern Rhodesia, Zambia made history on 24th October, 1964, in being the first British African dependency to adopt a republican constitution simultaneously with the achievement of independence within the Commonwealth. Zambia is remarkable also in other ways. Although it lies

within the tropics, the general height of the land, between 3,500 and 4,500 feet above sea level, gives a drier and cooler climate than one would expect, with excessive heat only in the great river valleys which entrench the plateau. It is, moreover, one of the most beautiful countries in the Commonwealth, abounding in wild life and scenic attractions.

Perhaps the most striking of Zambia's natural wonders are the Victoria Falls on the Zambezi river, which marks the border with Southern Rhodesia. To mark the achievement of independence, three commemorative stamps were issued, and one of these showed the President of Zambia, Dr. Kenneth Kaunda, looking at the Eastern Cataract of the Victoria Falls.

The 6d. stamp of the Independence series has a view of the Lusaka College of Further Education, completed in 1962, and the third stamp, a 1s. 3d. value, depicts a Barotse dancer in her colourful dress and head-scarf.

Some of Zambia's main products and industries are featured on the definitive stamps which have now been issued for regular use. The durable Zambezi redwood is in great demand for railway sleepers, parquet flooring and panelling. A factory

processing this redwood is shown on the 9d. stamp of the new series. Other values feature copper mining, tobacco growing and cattle rearing, all of which make valuable contributions to Zambia's economy. The 3d. stamp also represents an increasingly important occupation, that of cotton-growing.

As in all African countries, the emphasis in Zambia is upon modernisation. The new 6d. stamp illustrates this by contrasting the old "talking drums", by which messages were transmitted over long distances, with the latest high-speed teleprinter. A radiographer at work in one of Zambia's modern hospitals, on the 1d. stamp, and a young child standing in front of a modern school, on the 5s. stamp, exemplify other aspects of the modernisation programme.

The Independence series of three stamps and the fourteen new definitive stamps are the first to bear the name of Zambia, so that they will start a new page in the collector's album. They provide an attractive and interesting introduction to one of the Commonwealth's youngest and most vigorous members.

C. W. HILL



His Excellency M. Abdullah Malikyar, Afghanistan Ambassador to Britain (left), is accompanied by Rear Admiral the Earl Cairns, as he goes to Buckingham Palace to present his credentials to Queen Elizabeth

PICTURESCOPE

INDIAN TRADE DELEGATION IN KENYA ● COLOMBO PLAN

EXHIBITION IN LONDON ● THAILAND'S FIRST PLANETARIUM ● MALAYSIAN

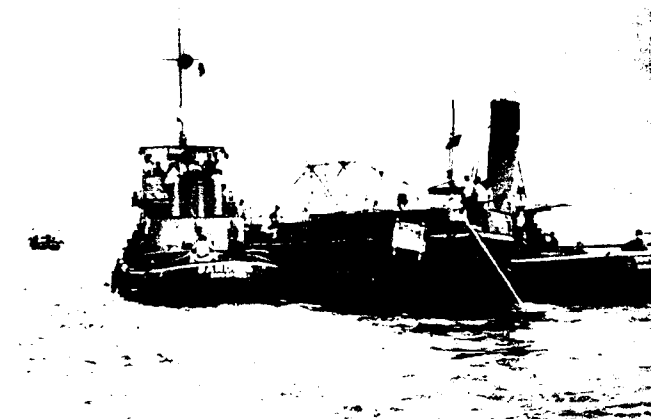
STUDENTS IN AUSTRALIA ● INDIAN SURGEON GOES HOME



The President of Kenya, Mzee Jomo Kenyatta (centre), met members of an Indian Trade Delegation visiting Kenya at his Gatundu home. On the far right is Mr. R. K. Tandon, Indian High Commissioner in Kenya



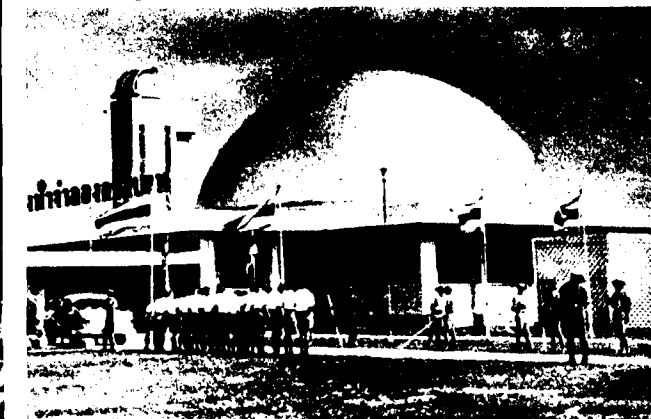
After six years' study and practice in Britain, Mr. Rabinorath Azariah and his wife and baby daughter return to India. Now a qualified neuro-surgeon, Mr. Azariah is seen here packing to go home: he took with him a case of basic brain surgery equipment which he will use in the Mirag Medical Centre in Western India



A converted steel lighter, lashed to two tugs, is being used to lay an 8,000-yard-long submarine telephone cable supplied by BICG to the Singapore Telephone Board for an underwater link to the island of Singapore



The Acting Pakistan High Commissioner in Nigeria, His Excellency Abdur Rauf Khan (left), talks to two Nigerian Co-operative inspectors before they left for Karachi for a study course under the auspices of the Pakistan/Nigeria Technical Assistance Programme



Thailand's first planetarium was opened by His Majesty the King in Bangkok. It is part of the Government's six-year educational development plan and cost over \$200,000



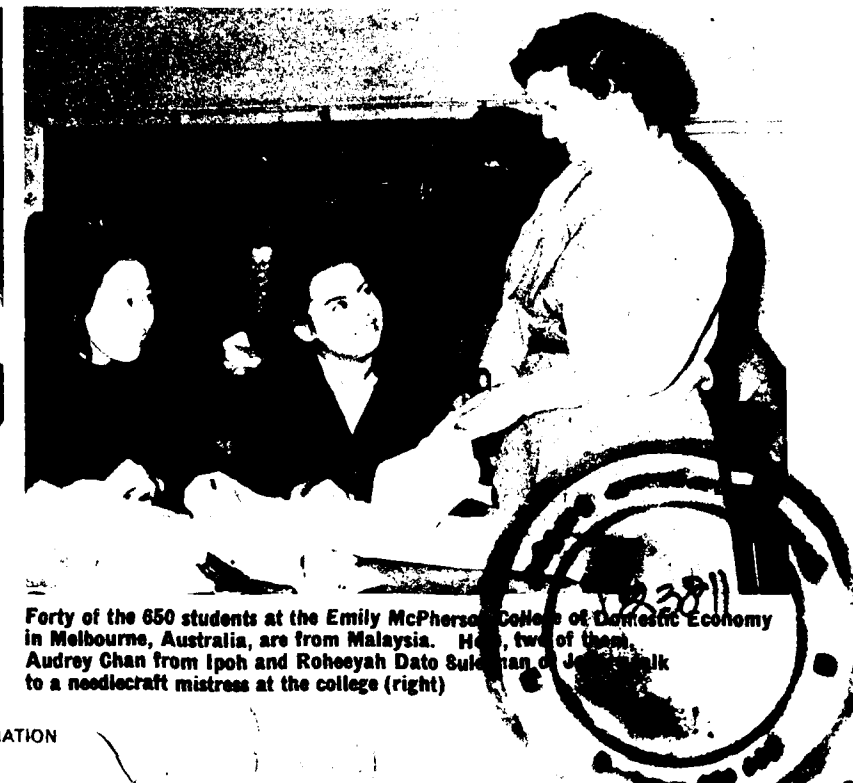
The Hong Kong Students' Association of Queensland, Australia, held a spectacular supper dance in aid of two charities: the Children's Hospital Foundation in Australia and the Wah Kiu Yat Po Junior Scholarships Scheme in Hong Kong. Here, 'Miss Pacific' is shown a Chinese dragon by medical student Mr. Kwan Yin Leung



Mrs. Barbara Castle, Minister for Overseas Development, talks to Mr. Goonetilleke of the Colombo Plan Bureau at the opening of the Colombo Plan Exhibition in London. Twenty-two Colombo Plan countries were represented in the exhibition



Visitor to the 'Flowers from many Countries' exhibition at the Tea Centre in London admires the display of flowers from Ceylon. Ten Commonwealth countries were represented in the exhibition, first of its kind held in London



Forty of the 650 students at the Emily McPherson College of Domestic Economy in Melbourne, Australia, are from Malaysia. Here, two of them, Audrey Chan from Ipoh and Roheeyah Dato Sultan of Johore Bahru, talk to a needlecraft mistress at the college (right)

RED FOR BRITISH INFORMATION SERVICES BY THE CENTRAL OFFICE OF INFORMATION
In England for Her Majesty's Stationery Office by Samuel Stephen Ltd., London

POWER FROM THE BOWELS OF THE EARTH



ALL over the Commonwealth, as standards of living rise, the cry goes up for more electric power. New Zealand is tapping that tremendous natural force which finds its most dramatic outlet in the eruptions of volcanoes, and is taming it to operate turbines supplying electricity to homes and factories.

Across New Zealand's North Island lies a fault in the earth's crust about 150 miles long and 30 miles wide through which steam and hot water seep to the surface from the magma, the intensely hot molten matter inside our planet. One of the most active of these areas is the wide, shallow Wairakei Valley, not far from the famous Rotorua Hot Springs. It is in this valley that the Geothermal Power Project has been developed, harnessing natural heat for the use of man.

No one knows for certain what goes on very deep underground, where molten and semi-molten matter generates explosive pressures, but scientists at Wairakei have gleaned enough knowledge to enable the subterranean forces to be harnessed to power turbines. In only two other places in the world is electricity produced from geothermal steam.

It was in 1951 that the New Zealand Government first decided to investigate the possibilities of geothermal energy. In 1952 the first boreholes were sunk at Wairakei, going down to about 3,000 ft.—although the average depth of the boreholes in use today is 2,000 ft. It soon became clear that a deep, fairly uniform mass of extremely hot water lies under Wairakei produced, it is thought, by the condensation of steam from the fiery magma.

Preparing the ground for drilling and for bearing the weight of heavy machinery was a problem, for the soft, pumice-like soil of the valley erodes easily in wet conditions and subsides. To counteract this tendency, large holes, bored at intervals over the site, were filled with concrete from giant mixers, and liquid cement was injected into the ground to a depth decreasing from 100 ft. adjacent to each well to 50 ft. about 30 ft. away.

On one occasion, after the drilling rig had been erected, a violent eruption, luckily at night, swallowed the rig and all the apparatus in a huge crater of boiling mud.

When the bores are drilled they are allowed to discharge vertically for some time, for safety reasons, since most of them throw rocks and stones hundreds of feet into the air. All men working near a new bore must wear protective steel helmets.

The bores are lined with stainless steel piping encased in thick concrete beds, and their discharge is controlled by valves which regulate the flow of steam and hot water. Safety valves are fitted that can tolerate pressures of up to 3,000 lb. per square inch, and the steam is either directed through a by-pass pipe into the atmosphere or led through large pipes above ground to the power stations.

The project covers 300 acres, and the power stations at present generate about a quarter of a million kilowatts of electricity. Some of the steam not used in the power houses is piped to domestic dwellings for central heating, and some of the hot water is used in open-air swimming pools. Excess water is led through open dykes into the nearby Waikato river.

In the early days of the project the continuous loud roaring of the discharged steam caused distress to workers and residents; but now large vertical concrete silencers, in pairs, are fitted to the bores, and



Opposite page: Wairakei, New Zealand, where man has tapped subterranean power and the earth breathes boiling water and steam. Left: These men preparing to "blow" a new geothermal bore are constructing a concrete casing which will act as a silencer when pent up steam roars into the atmosphere. Below: A power house at Wairakei, nearing completion. It measures 200 ft. by 200 ft. by 75 ft. high, and is finished in aluminium cladding and glass. Electric power from Wairakei is the cheapest in New Zealand.



their billowing plumes of steam are an eerie and dramatic spectacle.

Vegetation around the workings is slowly being destroyed by mineral deposits (mostly silica salts) brought to the surface by the steam. Defoliated pine trees, looking as though they had been coated with hoar frost, gradually die, fall and disintegrate. The grey soil is hot underfoot; wisps of steam curl upwards through the stunted native ferns and scrub, diffusing an aroma of stewing pine needles and grasses.

In one place the workmen have excavated a chamber in a hot bank, fitted an iron door to the front and so made an oven to provide instant hot lunches.

The project was planned in three stages. By the time the first stage was completed in 1960, seven turbines were producing 69,000 kilowatts, using in the process 2,000,000 lb. of steam and 15,000,000 lb. of natural hot water an hour. In the second stage six more turbines were installed, and in July 1964 Wairakei was producing 170,000 kilowatts, which represents more than 20 per cent of the North Island's total

generating capacity. The third stage has not yet achieved its full potential, but ultimately will bring the cost of the project as a whole to about £24 million.

A new system is being pioneered at Wairakei through which it is hoped to pump hot water from the well-heads to the power houses under a pressure of 100 lb. to the square inch, reduce it in pressure there, instead of underground, and "flash" the steam directly on to the turbines. This would provide additional power from steam which is at present being wasted.

Until the 1940s New Zealand was adequately supplied with electricity, since her rivers are fast-flowing and suitable for hydro-electric power production. But the enormously increased demand for power in the last 20 years, as industry grows, could not have been met without geothermal power, which is the cheapest form of electricity New Zealand has.

The Government is investigating possible new sources of geothermal power at Ngawha, in North Auckland, and at Ora-keikorako, near Rotorua. □

7½ centuries



In 1215 the great principle that government should be under the law was reaffirmed when King John, coerced by his barons, set his seal to Magna Carta. For the next 750 years the political leaders, the judges, the lawyers and the people of England were to continue the barons' struggle to tame and contain arbitrary rule—whether it be exercised by a king, an aristocracy, an army, a mob, or a bureaucracy. They used Magna Carta to buttress their legal arguments, to rally an opposition when tyranny threatened; and men understood the warning—not only in England but in all the English-speaking countries.

But those responsible for Magna Carta—known later as the Great Charter of the Liberties of England—could not have foreseen that it would become unique among the many similar feudal documents in mediæval Europe. It was quashed two months later by Pope Innocent III, but revised and reissued with Papal approval after John's death in 1216, to attract support for the young King Henry III. A further revised reissue was made in 1217, and this version, with some slight amendments made in 1225, is the one that became law.

The Great Charter of 1215 contained 63 clauses which confirmed the privileges of the barons, but not exclusively so, for the liberties of the Church were also safeguarded and measures included for the protection of merchants. The Charter imposed on barons the same reforms they demanded from the King. It granted privileges to "all freemen of the realm" and specific privileges could be interpreted by the courts of law—royal and local—to which barons, knights and freemen had access. Many provisions were stated in general terms, including the famous section 39, which laid down that no freeman was to be "taken, imprisoned, deprived, exiled, or in any way destroyed . . . except by the lawful judgement of his

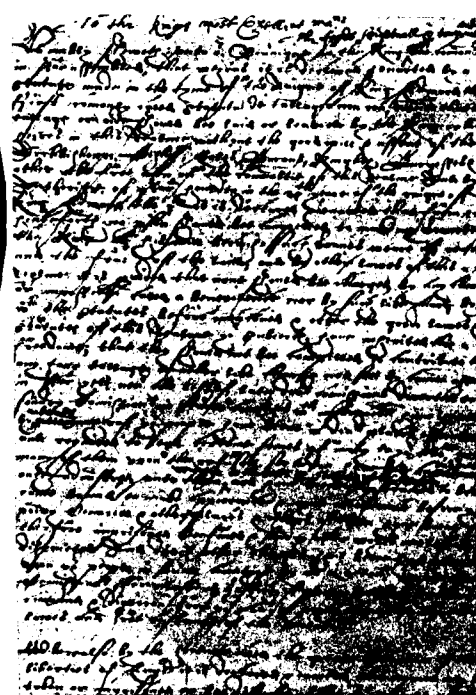
peers or by the law of the land". The importance of such clauses lay in the general insistence that the Crown's treatment of its subjects should come within the law and this law ensured both to individuals and the community certain rights which the King could not infringe. The need to guard the rule of the law which was recognised in 1215 is still recognised as supremely important in 1965.

Section of King John's Magna Carta, 1215

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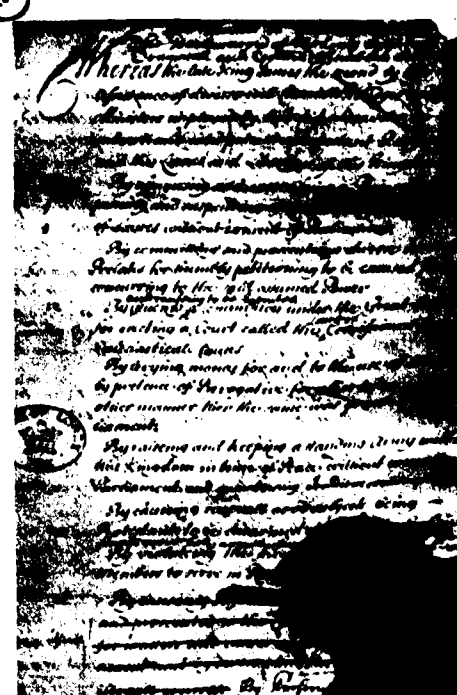
Charles I
(b. 1600, executed 1649)



Petition of Right, 1628



John Hampden, one of Charles' opponents (1594-1643)



The Declaration of Rights, 1689

From 1485-1603, under the firm rule of the Tudor monarchs, England was consolidated as a national, sovereign state. Administration was centralised, the scope and responsibilities of government extended. Parliament established privileges, such as freedom from arrest for members, freedom of speech, the right to decide disputed elections—all later to be tested. The Commons became the real forum of debate as the House of Lords assumed its modern form. By the 16th century, the Commons had 463 members drawn from the ranks of the country gentry who were well-versed in common law; experienced in local government.

Unlike the Tudors, who understood and influenced Parliament—ruling with a mixture of order and liberty—the Stuarts, in particular Charles I, failed to recognise the importance of Parliament, the strength of common law and the temper of the possessing classes. Charles, faced with a growing Parliamentary opposition to his attempts to extend royal powers, raised taxes without Parliament's consent and imprisoned those who refused to pay.

He clashed with Parliament, which re-discovered and acclaimed the fundamental law embodied in Magna Carta. It became the basis of the Petition of Right of 1628 to which the King was forced to give his assent. This declared that imprisonment without cause shown, forced billeting of troops and the subjection of civilians to martial law were illegal.

The civil war, the execution of Charles I, the Protectorship of Cromwell were revolutionary events, but through them England learned the value of a balanced power and the danger of upsetting it; that tyranny, whether exercised by a king or a party, was to be feared equally.

In 1688 after a series of inept policies and the use of what were considered unconstitutional powers to subvert the established Church, Catholic James II faced united opposition. His nerve broke and he fled to France, thus ushering in what is known as The Glorious Revolution.

A Convention (for only a King could summon Parliament), passed the Declaration of Rights which listed James' misdemeanours, recognised that as a result he was no longer King, and offered the Crown to his daughter Mary and her husband, the Dutch prince William. The Convention then styled itself a legal Parliament.

Once for all, Britain was declared a constitutional and Protestant state. The Crown was now below, not above, the law.

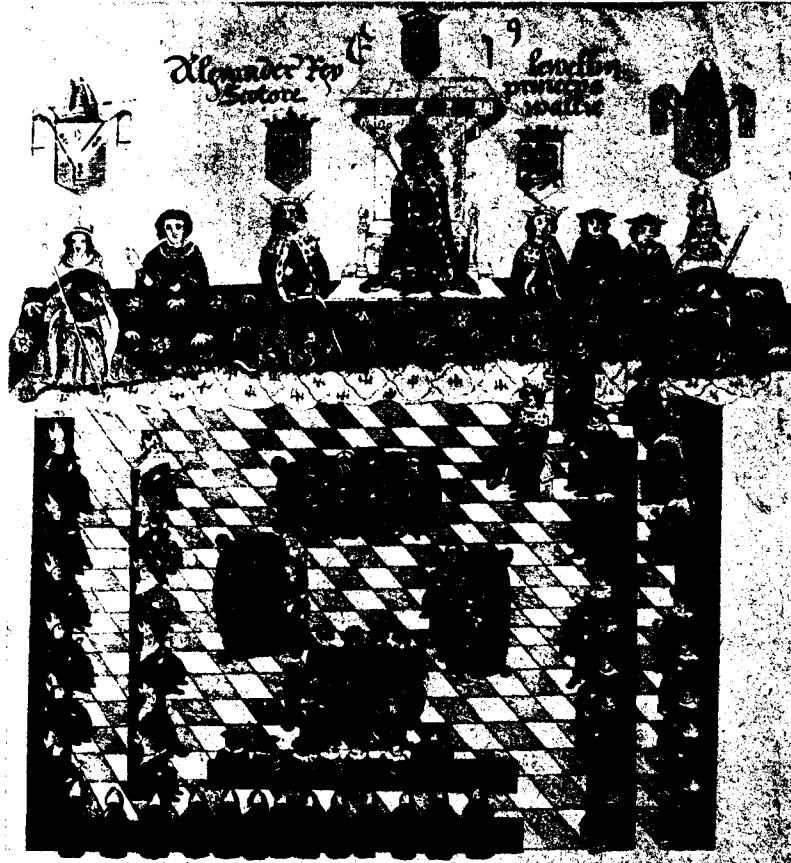
This year is the 700th anniversary of the first parliament in English history to which representatives of the towns were summoned. This was the 1265 parliament of Simon de Montfort, one of Henry III's most powerful subjects and the leader of a group of barons demanding reforms. The magnates' role as traditional advisers to the King through the great council was being undermined. The King preferred to rule through the King's council, a permanent body of officials, mostly lawyers and financiers, whose power had increased during the 12th and 13th centuries with the greater volume of government business, particularly judicial and administrative. But the King still had to call the great council when he needed to raise special taxes as Magna Carta had reaffirmed. The council could and did refuse its permission until the King agreed to discuss policy with its members.



Simon de Montfort (1208?-1265)

The term "parliament" was being used for the general assemblies or great councils at which Henry settled various judicial and financial matters. In the popular mind, parliament was associated with the dispensing of justice. de Montfort emphasised parliament's other purpose as a consultative assembly for discussing and determining joint decisions on matters of the greatest public importance.

This concept of parliament as a means of consultation survived and was later expanded by Edward I. By the 14th century, the Commons were being summoned regularly. Although in advance of his time, de Montfort had stamped the idea of Parliament as a primarily political assembly upon the English mind.



Edward I's Parliament of 1295



Sir Robert Walpole
(1676-1745)



William Pitt
(1759-1806)



Charles James Fox
(1749-1806)



John Wilkes
(1727-1797)

During the 18th century, The Glorious Revolution was being consolidated and that this was done so successfully owed much to the political theories on government and toleration expressed by the philosopher, John Locke. His assumption that civilised society is the result of a voluntary contract made by men to establish representative authority to enforce rights and guarantee security, was used to justify the exclusion of James II. The late 18th century was an age of great Parliamentary oratory; the brilliance of men such as Fox and Burke. England was learning the language of politics; the habit of treating government as a subject of reasoned discussion.

The Crown retained considerable powers, notably that of choosing Ministers. But the King still had to carry Parliament with him and could do so by exploiting his powers of patronage. Both Lords and Commons were susceptible to the favours—bishopsrics, titles, dignities, pensions and places—only a King could bestow. The fact that the First Lord of the Treasury was responsible for their distribution helped towards making the holder of this office the most important Minister of the Crown.

"Influence" spread to the elections to enable the return of government supporters to the Commons. But despotism was avoided, for those who could influence elections to the borough seats were for the most part private individuals—many of them members of the House of Lords which increased in importance during the century and stood as a bulwark against royal autocracy. These patrons had to approve government policies and before elections there was much subtle and skilful adjusting of interests and policies to gain support. In addition, the county seats formed a more independent corps of members in the Commons.

The Cabinet system began to evolve informally as a way of arriving at an agreed policy among the King's Ministers although even to this day it has no formal recognition in law. By 1718 George I had ceased to preside for, German by birth and upbringing, he understood little English.

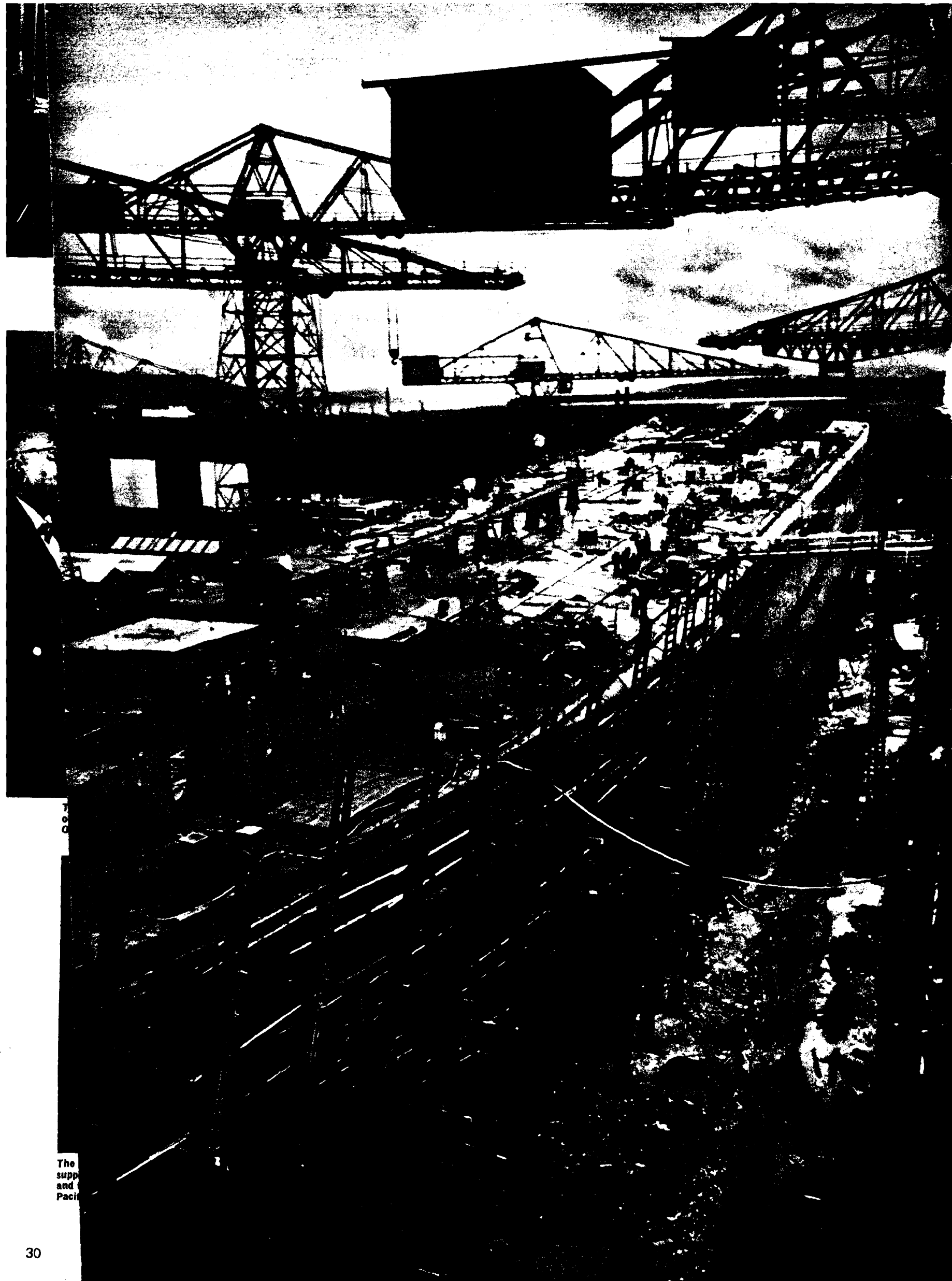
Sir Robert Walpole is regarded as the Minister who did most to further the system, while William Pitt was to become the country's most powerful First Minister of the period. Since the King never heard policy discussed, but merely his Ministers' decisions, his power was diminished.

Civil liberties were enlarged. Courts and judges were fully independent and adhered to the rule of law. In 1772, Magna Carta was again invoked to protect a negro slave being detained by his master on a ship in the Thames. Quoting "The Statute", the very institution of slavery was declared contrary to the law of England and he and 40,000 other slaves freed.

The courts upheld the rights of the radical John Wilkes, finding against the government for suppressing his attacks upon it and declaring that Secretaries of State had no powers of arrest or of seizing papers.

The American colonies had broken with England and parts of Magna Carta were to be incorporated into the Constitution of the United States. The Fifth Amendment which came into force in 1791, declares that no person "shall be deprived of life, liberty, or property, without due process of law" while the Fourteenth Amendment (1868) provides that in addition to the Federal Union itself, no State shall "deprive any person of life, liberty, or property without due process of law".

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