contemplated. Then, with production of an overall thermal efficiency of approximately 80 per cent, there will be a considerable saving in coal.

The technical developments which have been envisaged are not regarded as aims for the distant future. Vigorous investigations of gasification processes are being carried out in various parts of the world, and much is now known of the use of oxygen, slagging operation, powder techniques, hydrogenation, oil gasification and so on. What remains to be done consists mainly of selecting those elements which lead to the highest performance and integrating them into the pressure system. Without minimizing the effort required for this final stage, it is nevertheless believed that, with the Lurgi process as a basis on which to build, a flexible system of gas production could be made available in a few years.

MEDICAL RESEARCH COUNCIL

REPORT FOR THE YEAR 1952-53

A FEATURE of the report for 1952-53 of the Medical Research Council* is an article entitled "Medical Research in the Tropics", which discusses the origin and work of the Colonial Medical Research Committee set up eight years ago by the Secretary of State for the Colonies and the Medical Research Council, under the chairmanship of the Secretary of the Medical Research Council. During the eight years since the establishment of this Committee, new centres of research have been built at Fajara in the Gambia, Mwanza in Tanganyika, Oshodi in Nigeria, Kumba in the Cameroons, and Kerugoya in Kenya, and the Rockefeller Foundation generously transferred to the Colonial Office its virus research institutes at Entebbe in Uganda and Yaba in Nigeria. Research laboratories were built at Makerere College in Uganda, and support was given to research in Malaya and to work on malaria in Tanganyika. The Committee also advised that a Colonial Medical Service should be created, and, although this was instituted in 1949, recruits to it have been slow in coming forward.

Recently, however, the control of this Colonial research has been reorganized. It is not easy to disentangle from the paragraph describing this reorganization exactly what has been done; but the new arrangements provide "for decentralising to inter-territorial bodies the immediate scientific supervision of research schemes based in the colonies" and a "home-based organisation will continue to centre on the Colonial Medical Research Committee, whose terms of reference have been revised to accord with the newer concept of its duties". One is tempted to wonder, as one reads and tries to understand exactly how this complex organization works, which seems to the authorities to be the more important—the administrative machine or the men and women, at home and abroad, on whose devoted and unpublicized labours the whole organization, and also the health of a great many people, depend.

The rest of the Council's report follows the plan adopted during the past few years. It does not attempt to record the results of the work of the Council's separate research establishments, but gives only brief summaries, in the form of headings, of the

work of each department. For further information the reader is referred to the bibliography of papers published by individual research workers. The practice now is to discuss, under the title "Some Aspects of Medical Research", selected general trends of medical research "often from a broader standpoint than that of the contributions made by work within the Council's own programme", a practice which "inevitably omits mention of many investigations in which the Council's workers take part".

Following this practice, the present report discusses, in the section on "Some Aspects of Medical Research", high-altitude research and the Everest expedition, cell metabolism, peripheral nerve injuries, the diagnosis and treatment of virus diseases, the grafting of tissues, the biosynthesis and metabolism of some simple nitrogenous compounds, high blood pressure, the use of cortisone and adrenocorticotrophic hormone in rheumatic diseases, studies of twins, hazards in the use of pesticides, the use of hypothermia in surgery, and lipid metabolism. The section is a valuable one; but some readers, however much they welcome contributions of this kind, will regret that it is no longer possible to have reports of the work being done by individual workers. G. LAPAGE

FORESTRY IN THE GOLD COAST

REPORT FOR THE YEAR 1952-53

THE report for the year 1952-53 of the Forest Department of the Gold Coast* gives evidence that under the new governmental régime in the Gold Coast the forests and their well-being are not to be neglected. Twenty years ago the gazetted forest staff numbered twelve officers, mostly stationed in the south, the northern territories scarcely coming into forestry consideration by the forestry authorities. At present, so the Chief Conservator of Forests states, the sanctioned Colonial Forest Service is thirty-five officers. In addition, the sanctioned subordinate staff consists of twenty-four senior forest rangers and a hundred and twenty forest rangers with the necessary complement of forest guards. Such a trained staff will, it may be hoped, be continued under the new government.

The report shows most satisfactory progress. The formation of a working plans branch, concerned with the enunciation of the approved forest policy, points to this. In the report for 1948-49 (see *Nature*, 167, 598; 1951) it was stated that a new and detailed forest policy formulated in 1946 had been formally approved by the Governor in Council and that one of the chief aims was the management of permanent forest resources by methods that would achieve maximum productivity on the basis of a sustained yield. This is a familiar aspiration, often repeated in the past in forestry reports; but the Department is making considerable progress towards its fulfilment. The policy is briefly summed up under one heading—reservation—most of which has reached completion except in the Northern Territories. Management over 4,583 square miles of forest reserves has now been covered by enumeration surveys, mainly on a one per cent basis of sampling, and a working plans branch was set up during the year, the total area of reserves under working plans being 880 square miles.

* Committee of Privy Council for Medical Research: Report of the Medical Research Council for the Year 1952-1953. (Cmd. 9184.) Pp. v+269. (London: H.M.S.O., 1954.) 7s. 6d. net.

* Gold Coast Government Report on the Forestry Department for the Year 1952-53. Pp. ii+24. (Accra: Government Printing Department; London: Crown Agents for the Colonies, 1954.) 2s. 6d. net.

Under research, silvicultural research work in the high forest zone has reached a successful stage which will enable results to be placed at the disposal of the working plans branch. Under local authority forestry the introduction of a new system of local government has necessitated a revision of the forest reserve rules and by-laws. Here the necessary amendments have been made in order to enable alterations in the by-laws to be made. The destruction of forest land by farming has increased owing to the high price offered for cocoa; it is estimated to have been 780 square miles a year, and the amount of high forest outside forest reserves now remaining is assessed at 6,327 square miles. Most damage has been done in Ashanti. No control of this farming has yet been achieved, and it is altogether a great blot on the administration in Africa generally—under other governments besides the British.

Three other facts emerge from the report. The control of timber concessions is under the chief conservator of forests. Secondly, plans have been made for the expansion of the training of the subordinate staff which it was hoped to bring into force in 1954. Finally, advice is always available on technical subjects to mining companies and others on the establishment and management of fuel and pole plantations upon which progress is being made in many parts of the country. E. P. STEBBING

J.-S. BAILLY, AN EIGHTEENTH-CENTURY FRENCH SAVANT

IN a publication entitled "Jean-Sylvain Bailly, Astronomer, Mystic, Revolutionary, 1736-1793" (*Trans. Amer. Phil. Soc.*, N.S., 44, Part 1, 427-538; 1954. From the American Philosophical Society, Independence Square, Philadelphia 6, Pa.; 6 dollars), Edwin Burrows Smith gives an account, including a very comprehensive bibliography and index, of one who was a statesman, astronomer and savant. A member of the French Academy and of the Academy of Inscriptions, Bailly was president of the Third Estate and of the National Assembly and was Mayor of Paris during 1789-91. This meteoric career came to an abrupt end soon after his retirement at Melun, where he was seized, charged with conspiracy and executed in 1793.

Born into an essentially artistic milieu, Bailly abandoned the arts to study Newtonian physics, became a respected astronomer and won wide recognition throughout Europe for his research on Jupiter's satellites. Later on, however, he concentrated on the historical side of the subject, and between 1775 and 1787 he published five large volumes on the history of ancient and modern astronomy. In addition, in three smaller works he tried to retrace the course of man's development, and supported the theory of a primitive golden age. Although his scholarly works brought him many public honours, not only in France but also in four other European countries, he nevertheless found himself involved in a number of scientific and literary quarrels, largely because of his wild speculations on antiquity. Perhaps it was fortunate that he took part in the investigations of Mesmer's pretensions regarding animal magnetism, because this brought him back into contact with controlled scientific inquiry in which men like Franklin, Lavoisier, Guillotin and others played a prominent part, so that after the autumn

of 1784 mesmerism rapidly disappeared from Paris, though it continued to be practised in the provinces.

The study of Newtonian physics led Bailly to the belief that scientific precision could be extended to other fields of human knowledge, such as history, law, language, etc., and this view led to a breach with the sceptical philosophers who had little confidence in systematic explanations of immaterial or intangible phenomena. As the author of this biography remarks, "Bailly fell victim to the hobgoblin of *vraisemblance*"; in other words, in cases where truth could not be demonstrated, he was prepared to accept the probable explanation. The French Revolution represented the acid test for Bailly's philosophy, for that was the period when the theorist could try the practical application of his ideas, and Bailly's ideas did not survive the test. At the end of the biography, the author pays a tribute to his public work, in spite of its lack of success: "The remarkable aspect of Bailly's public life is not his failure, but the fact that he succeeded so well in coping with the practical problems which were so far removed from his cognizance".

A DETAILED RADIO MAP OF THE SKY

By PROF. J. D. KRAUS and H. C. KO

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FROM observations during the spring of 1954 with the Ohio State University radio telescope, a detailed radio map of the sky has been made. This map (Fig. 1) has sufficient detail to suggest how the sky would appear if our eyes were sensitive to radio waves instead of light. The central region of our galaxy or Milky Way system stands out prominently, as do also a number of localized radio sources such as Cassiopeia A and Cygnus A.

The contours are lines of equal radio brightness as observed at 250 Mc./s. with the 96-helix antenna of the Ohio State University radio telescope. The observations were made by setting the antenna at a fixed declination for several days. As the earth rotated, a record or profile of the cosmic radio background was then obtained as a function of right ascension for a narrow zone of declination. Scores of such profiles taken at other declinations were combined to produce the map. The co-ordinates are right ascension (α) and declination (δ) (1950.0) and the contours give the apparent radio brightness in units of 10^{-25} W. m.⁻² (c./s.)⁻¹ deg.⁻². The map gives the observed levels, not being corrected for the antenna pattern. Thus, a minor lobe of the antenna appears as a small rise near the preceding sides of the strong sources Cassiopeia A and Cygnus A. The elongated shape of these sources is a direct measure of the antenna pattern, which is a fan-beam 1° wide between half-power levels in right ascension by 8° in declination at 250 Mc./s. The minor lobes and elongated shapes are imperfections in the radio map that are analogous to the defects in an image seen with an optical telescope due to the aberrations of the lens. Since the map is a Mercator projection, a localized source near Dec. 0° such as Virgo A appears as a more slender ellipse than does a source more remote from the equator such as Cassiopeia A.